Scientific Program Book

IMMUNOLOGY 2019™

The Annual Meeting of the American Association of Immunologists

May 9–13, 2019

San Diego Convention Center

San Diego, California

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THURSDAY AFTERNOON

MAY 9

1. MAST CELLS: PHENOTYPE TO FUNCTION

Block Symposium

THU. 12:15 PM—ROOM 26AB

CHAIRS: *T. SUMPTER, T. KAWAKAMI*

12:15 Comprehensive characterization of the mast cell surface proteome. **N.J. Shubin, K. Niino, V. Kasprzak, R. James and A.M. Piliponsky**. Seattle Children's Res. Inst. **(54.1)**

12:30 Early life adversity programs mast cells toward a hyperactive phenotype into adulthood. **N.C. Maradiaga, C. Pohl, E. Mackey and A.J. Moeser**. Michigan State Univ. **(54.2)**

12:45 Perinatal androgens drive sex differences in mast cell phenotype and severity of mast cell disease. **E. Mackey and A.J. Moeser**. Michigan State Univ. **(54.15)**

1:00 Skin microbiome regulates SCF level in Keratinocytes and defines mast cell maturation. **C-C. Wu, Z. Wang and A. Di Nardo**. Univ. of California, San Diego. **(54.16)**

1:15 Allergen-induced disulfide-linked dimers/oligomers of histamine-releasing factor enhance mast cell activation. **Y. Kawakami, K. Kasakura, T. Ando, Y. Kawakami and T. Kawakami**. La Jolla Inst. for Immunology and Atopy (Allergy) Res. Ctr., Juntendo Univ. Grad. Sch. of Med., Japan. **(54.4)**

1:30 Selective serotonin reuptake inhibitors suppress mast cell function. **T. Haque and J. Ryan**. Virginia Commonwealth Univ. **(54.11)**

1:45 STAT5b dimers and tetramers are critical for mast cell function. **K.N. Kiwanuka, J. Lin, W.J. Leonard and J.J. Ryan**. Virginia Commonwealth Univ. and NHLBI, NIH, MD. **(54.13)**

2:00 Ceramide-CD300f interaction inhibits Mrgprb2-mediated mast cell activation and pseudo-allergic drug reactions in mice. **A. Takamori, T. Ando, A. Kaitani, A. Maehara, K. Izawa, K. Okumura and J. Kitaura**. Juntendo Univ. Graduate Sch. of Med., Japan. **(54.8)**

2. TREGS AND TH17

Block Symposium

THU. 12:15 PM—ROOM 30CDE

CHAIRS: *A. FRANCO, V. KUMAR*

12:15 Phenotypic and functional characterisation of expanded antigen-specific regulatory T cells towards clinical translation. **J. Bianchi, R.I. Azevedo, A.I.S. Vieira, D. Ligeiro, C.L. da Silva and J.F. de Lacerda**. IMM, FMUL, CF, Lisbon, Spain, CSTL, IPST-IP, Spain and IST-iBB. **(57.2)**

12:30 Human natural regulatory T cells recognize peptides of the heavy constant region of immunoglobulins presented by IgG+ B cells. **L-E. Hsieh, J. Sidney, N. Behnamfar, J.C. Burns, D. Boyle, G.S. Firestein, A. Sette and A. Franco**. Sch. of Med., Univ. of California, San Diego and La Jolla Inst. for Immunology. **(57.4)**

12:45 $CD71^+$erythroid cells promote Tregs and via ectonucleotides CD39 and CD73 modulate T cell responses. **S. Elahi, S. Shahbaz and P. Koleva**. Univ. of Alberta, Canada. **(57.5)**

1:00 Negative feedback control of autoimmunity by a novel population of regulatory unconventional $CD8^+$ T cells. **I. Marrero, H. Sheng, I. Maricic, S.S. Fanchiang, S. Zhang, D. Sant'Angelo and V. Kumar**. Univ. of California, San Diego and Rutgers Univ. **(57.10)**

1:15 A wave of $Foxp3^+$ regulatory T cell accumulation in neonatal liver plays unique roles in maintaining self-tolerance. **Q. Ge and M. Li**. Peking Univ., China. **(57.14)**

1:30 LAG-3+-induced regulatory T cells confer infectious tolerance with suppression of IFN-γ response decoupled from reserved proliferation. **C-T. Huang, A. Dutta, C-Y. Hung, T-C. Chen, C-Y. Lin, Y-C. Lin, C-S. Chang, T-A. Chen and Y-L. Huang**. Chang Gung Mem. Hosp., Taiwan. **(57.16)**

1:45 c-Maf-dependent Treg cell control of intestinal T_H17 cells and IgA establishes host-microbiota homeostasis. **S. Rutz, C. Neumann, J. Blume, A. Kalies and A. Scheffold**. Genentech, Inc., German Rheumatism Res. Ctr., Germany, The Walter and Eliza Hall Inst. of Med. Res. and Christian Albrechts Univ., Germany. **(57.19)**

2:00 Recently alloactivated $CD4^+CD8^-CD25^+$T regulatory cells express CD8alpha and are potent suppressor cells. **B.M. Hall, N.D. Verma, C.M. Robinson, C. Wang, A. Sharland, G. Tran, P. Wilcox and S.J. Hodgkinson**. Univ. of New South Wales, Australia and Sydney Univ., Australia. **(57.20)**

3. MYELOID CELLS

Block Symposium

THU. 12:15 PM—ROOM 31ABC

CHAIRS: *R.G. SCHERAGA, M. MESSMER*

12:15 Myeloid responders to programmed cell death. **M.N. Messmer, A.G. Snyder, M.Y. Gerner and A. Oberst**. Univ. of Washington. **(58.2)**

12:30 TRPV4 mediates the macrophage phagocytic and cytokine response to leptin. **R.G. Scheraga, A. Perelas, S. Abraham, L. Grove, B.D. Southern, J. Crish and M. Olman**. Cleveland Clin. **(58.4)**

12:45 Creatine shapes macrophage polarization by reprogramming L-arginine metabolism. **L. Ji, X. Zhao, B. Zhang, L. Kang, W. Song, B. Zhao, W. Xie, L. Chen and X. Hu**. Inst. for Immunology and Sch. of Med., Tsinghua Univ., China, Sch. of Pharmaceutical Sci., Tsinghua Univ., China, Hospital for Special Surgery Res. Div. and the David Z. Rosensweig Genomics Ctr. and Tsinghua-Peking Center for Life Sci., School of Life Sci., Tsinghua Univ., China. **(58.5)**

1:00 WITHDRAWN

1:15 Itaconate inhibits alternative activation of macrophages by targeting Janus kinase 1. **M.C. Runtsch and L. O'Neill**. Trinity Col. Dublin, Ireland. **(58.11)**

1:30 IL-34 differentiation of immunosuppressive macrophage. **K. Kelly-Scumpia, R. Shirazi and R. Modlin**. Univ. of California, Los Angeles. **(58.13)**

1:45 Sympathetic nervous tone influences anti-tumor immunity by mediating accumulation of myeloid-derived suppressor cells and regulatory T-cells. **J.T. Nevin, W.L. Corwin and P.K. Srivastava**. Univ. of Connecticut Hlth. Ctr. **(58.15)**

2:00 Fatty acid transporter 2 regulates the suppressive functions of PMN-MDSC in cancer. **F. Veglia, V. Tyurin, M. Blasi, A. De Leo, L. Donthireddy, C. DiRusso, P. Black, V. Kagan and D.I. Gabrilovich**. The Wistar Inst., Univ. of Pittsburgh, Duke Univ. and Univ. of Nebraska-Lincoln. **(58.18)**

4. INNATE IMMUNE SENSING AND SIGNALING

Block Symposium

THU. 12:15 PM—ROOM 25ABC

CHAIRS: *K. KOBAYASHI, E. AMIEL*

12:15 Role of NLRC5 and IRF1 in the induction of MHC class I. **S. Vijayan, T.B. Meissner, K-H. Lee, Y-J. Liu, I. Downs, T. Sidiq, C. Zhang, P.J. van den Elsen and K.S. Kobayashi**. Texas A&M Hlth. Sci. Ctr., Harvard Med. Sch. and Leiden Univ. Med. Ctr., The Netherlands. **(64.20)**

12:30 Syk-dependent glycolytic reprogramming in dendritic cells regulates IL-1-beta production to fungal-associated ligands in a TLR-independent manner. **E. Amiel, P.M. Thwe, D. Fritz and J. Snyder**. Univ. of Vermont and Tufts Univ. **(64.2)**

12:45 Regulation of GLI3 expression by TLR4 signaling. **S.J. Matissek and S.F. Elsawa**. Univ. of New Hampshire. **(64.14)**

1:00 NHR-49/PPARα regulates HLH-30/TFEB-mediated innate immune response via a flavin-containing monooxygenase in *C. elegans*. **K. Wani, S. Taubert and J. Irazoqui**. Univ. of Massachusetts Med. Sch. and Univ. of British Columbia, Canada. **(64.6)**

1:15 TRAF3IP3 negatively regulates type I interferon signaling by suppressing TBK1. **M. Deng, J.W. Tam, H. Guo, L. Zhang, B.K. Davis, J. Brickey, S. Sun and J.P. Ting**. Lineberger Comprehensive Cancer Ctr., Univ. of North Carolina, Chapel Hill, Dept. of Biol., Franklin and Marshall Col., Lancaster, PA and Univ. of Texas MD Anderson Cancer Ctr. **(64.12)**

1:30 Induction of innate antiviral immunity through a novel pattern recognition receptor, the RNA helicase DHX16, is regulated by unanchored K48-linked poly-ubiquitin chains. **A. Hage, P. Bharaj and R. Rajsbaum**. Univ. of Texas Med. Br. **(64.16)**

1:45 NME4 regulates TLR3 activation and type I IFN production through autophagy-dependent TRAF6 degradation. **B. Sun, X.H. Zhao and R.H. Zhang**. Shanghai Inst. of Biochemistry and Cell Biol., Chinese Acad. of Sci., China. **(64.22)**

2:00 Dysregulated CARD9 signaling in neutrophils drives inflammation in a mouse model of neutrophilic dermatoses. **S. Tartey and T-D. Kanneganti**. St. Jude Children's Res. Hosp. **(64.25)**

5. CYTOKINE AND T CELL-BASED IMMUNOTHERAPY

Block Symposium

THU. 12:15 PM—ROOM 29ABCD

CHAIRS: *M. KROGSGAARD, C. WARE*

12:15 A powerful ICOS agonist that enhances anti-tumor immune responses restored by immune checkpoint inhibitors. **J. Gariepy, A. Prodeus, A. Sparkes, N. Fischer and S. Saha**. Sunnybrook Res. Inst., Canada, Univ. of Toronto, Canada and McMaster Univ., Canada. **(71.5)**

12:30 A novel agonist of CD137 immune checkpoint stimulator serves as a cancer immunoprevention agent with efficacy against various tumor types. **L. Batra, H.B. Barsoumian, P. Shrestha, J.L. Hawthorne, W.S. Bowen, H. Zhao, N.K. Egilmez, J.G. Gomez-Gutierrez, H. Shirwan and E.S. Yolcu**. Inst. for Cellular Therapeutics, FasCure Therapeutics, LLC and Univ. of Louisville. **(71.6)**

12:45 Interleukin-15 in cancer immunotherapy: IL-15 receptor complex versus soluble IL-15 in a cancer cell-delivered murine leukemia model. **A. Berger, S. Colpitts, M. Seabrook, C. Furlonger, M. Bendix, J. Moreau, W. McKillop, J. Medin and C.J. Paige**. Ontario Cancer Inst., Canada and Med. Col. of Wisconsin. **(71.11)**

1:00 Lenolidamide and IL-15 enhance natural killer cell-mediated immunity and augments the anti-tumor effect of an anti-CD30/CD16A bispecific antibody against Hodgkin's lymphoma B cells. **A. Manna, S. Aulakh, S. Ailawadhi, A. Chanan-Khan, T. Sher and A. Paulus**. Mayo Clin. **(71.12)**

1:15 Rejection-resistant off-the-shelf T cells for adoptive cell therapy. **F. Mo, M. Srinivasan, R. Ma, T.S. Smith, M.K. McKenna, E. Atilla, P. Ataca Atilla, H.E. Heslop, M.K. Brenner and M. Mamonkin**. Baylor Col. of Med. **(71.8)**

1:30 Unbiased functional identification and therapeutic targeting of T cell neoantigens in a spontaneous murine squamous cell carcinoma. **J.S. Dolina, J. Lee, B. Peters and S.P. Schoenberger**. La Jolla Inst. for Immunology. **(71.14)**

1:45 Determinants of TCRα-β chain pairing in generating TCR diversity. **H. Tanno, T.M. Gould, R.E. Durrett, J.R. McDaniel, W. Cao, J. Gollihar, C. Steven, Y. Tanno, A.D. Ellington, G.C. Ippolito, W. Hildebrand, G. Georgiou and J.J. Goronzy**. The Univ. of Texas at Austin, Stanford Univ. Sch. of Med. and The Univ. of Oklahoma Hlth. Sci. Ctr. **(71.15)**

2:00 Covalent adaptor synNotch and chimeric antigen receptors for programmable antigen targeting. **J.J. Lomueller, A. Butchy, Y. Tivon, M. Kvorjak, N. Miskov-Zivanov, A. Deiters and O.J. Finn**. Univ. of Pittsburgh. **(71.18)**

6. BACK TO SCHOOL: A REVIEW OF FOUR FAST-MOVING FIELDS

Committee-Sponsored Session

Sponsored by the AAI Program Committee

THU. 2:30 PM—ROOM 33ABC

CHAIRS: *D. MASOPUST, J. M. BLANDER*

This workshop intends to bring a broad audience up-to-date on a few emerging or rapidly changing fields or areas of technological innovation. Expert lecturers will provide an overview of each trending topic with an emphasis on communicating big picture concepts.

2:30 Super antibodies: the fourth generation. **D. Burton**. Scripps Res. Inst.

3:00 Cellular heterogeneity in the immune system: turning a bug into a feature with single-cell genomics. **A. Shalek**. Massachusetts Inst. of Technol.

3:30 The complement system – new tricks for an old dog. **J. Thurman**. Univ. of Colorado.

4:00 Myeloid cells: directors of the tumor immune microenvironment. **C. Hedrick**. La Jolla Inst. for Immunology.

7. BASIC AUTOIMMUNITY: GENETIC AND NON-GENETIC TRIGGERS

Block Symposium

THU. 2:30 PM—ROOM 30AB

CHAIRS: *L. SHERMAN, J. BOSS*

2:30 p38 MAP kinase signaling in microglia plays a sex-specific protective role in CNS autoimmunity. **D.N. Krementsov and M. McGill**. Univ. of Vermont. **(50.3)**

2:45 Pro-autoimmune genetic risk variant, PTPN22 1858C>T accelerates formation of tertiary lymphoid structures in a mouse model of type 1 diabetes. **S.E. Schmiel, K. Marquardt and L.A. Sherman**. Scripps Res. Inst. **(50.5)**

3:00 Unmasking a killer: discovery of a gene that controls the pathogenic activation of $CD8^+$ T cells in type 1 diabetes. **C. Ye, D.V. Serreze, Y-G. Chen and J.P. Driver**. Univ. of Florida, Jackson Lab. and Med. Col. of Wisconsin. **(50.9)**

3:15 A hypomorphic Ephb2 gene variant contributes to autoimmune diabetes in NOD mice associated with altered Mapk3 activities in B-lymphocytes. **Q. Wang, H.D. Chapman, J.J. Racine and D. Serreze**. Jackson Lab. **(50.6)**

3:30 Distinctions in gene-expression in PBMC from male and female SLE patients. **M. Olferiev, D. Fernandez, D. Greenman, M. Peng, K. Kirou and M.K. Crow**. Hosp. for Special Surgery. **(50.8)**

3:45 X-chromosome inactivation maintenance is perturbed in T cells from lupus mouse models and human lupus patients. **M. Anguera**. Univ. of Pennsylvania. **(50.2)**

4:00 Epigenetic programming underpins B cell dysfunction in human SLE. **C. Scharer, E. Blalock, T. Mi, B. Barwick, S. Jenks, B. Neary, D. Patterson, T. Deguchi, E-H. Lee, C. Wei, I. Sanz and J.M. Boss**. Emory Univ. Sch. of Med. **(50.10)**

4:15 Developmental exposure to environmental toxicant trichloroethylene alters DNA methylation in polycomb protein binding regions in effector/memory $CD4^+$ T cells from autoimmune-prone mice. **S.J. Blossom, S. Byrum, C.L. Washam, J.D. Patterson, K.K. Vyas and K.M. Gilbert**. Univ. of Arkansas for Med. Sci. **(50.7)**

8. LYMPHOCYTE DEVELOPMENT

Block Symposium

THU. 2:30 PM—ROOM 32AB

CHAIRS: *K.L. MEDINA, M. ANDERSON*

2:30 Hoxa9 silencing of *p16^{ink4a}* is essential for murine lymphopoiesis. **K.L. Medina and K.A. Gwin**. Mayo Clin. **(53.20)**

2:45 MicroRNA-142 is an essential negative regulator of B cell maturation and malignant transformation. **N.M. Graham, W-L. Wang, N. Magilnick, J. Lee, H. Wang, B. Zhang, G. Marcucci, M. Muschen, E. Reyes and M.P. Boldin**. City of Hope Beckman Res. Inst., Syst.s Biol., Beckman Res. Inst., City of Hope and Gehr Family Ctr. for Leukemia Res., Hematology Malignancies and Stem Cell Transplantation Inst. **(53.22)**

3:00 Modulation of Id3 induces a fetal-specific HEB-dependent gamma delta T cell developmental pathway in the adult mouse thymus. **J.S. Selvaratnam and M.K. Anderson**. Sunnybrook Res. Inst., Canada and Univ. of Toronto, Canada. **(53.14)**

3:15 Distinct CD28 signaling requirements determine the alternative fates of thymic agonist selection. **M. Watanabe, F. Alkhaleel and R.J. Hodes**. NCI, NIH. **(53.13)**

3:30 A critical role for the Slam/SAP signaling pathway in the developmental programming of γδ T cell function. **J.E. Boyson, V.L. DeVault, S.K. Mistri, L. Mei, S.C. Musial, C. Spear, J.A. Dragon, A. Veillette and O. Dienz**. Univ. of Vermont and McGill Univ., Canada. **(53.21)**

3:45 Cell-targeted steroid signaling in the thymus determines T cell repertoire strength. **M.D. Taves, P. Mittelstadt, D. Presman, G. Hager and J.D. Ashwell**. NCI, NIH and Univ. de Buenos Aires, Argentina. **(53.12)**

4:00 Regulation of thymic type I IFN expression and its role in T cell development. **O.C. Salgado Barrero, S.T. Lee, E.R. Breed and K.A. Hogquist**. Ctr. for Immunology, Univ. of Minnesota. **(53.16)**

4:15 Perturbation of developmental hematopoiesis shapes lung ILC2 immune memory. **D.A. Lopez and A.E. Beaudin**. Sch. of Natural Sci., UC Merced. **(53.15)**

9. HEMATOPOIESIS AND MYELOID DEVELOPMENT

Block Symposium

THU. 2:30 PM—ROOM 25ABC

CHAIRS: *R.S. WELNER, J.O. MANILAY*

2:30 Sclerostin depletion may induce inflammation in the bone marrow. **C. Donham, G. Loots and J. Manilay**. Univ. of California, Merced. **(118.16)**

2:45 Bone marrow resident Tregs maintain stromal cell function via IL-10. **V. Camacho, S. Patel, V. Matkins, H.R. Turnquist and R.S. Welner**. Univ. of Alabama, Birmingham and Univ. of Pittsburgh Sch. of Med. **(118.14)**

3:00 Plasma cells are obligate enhancers of age-associated myeloid skewing. **P. Pioli, D. Casero, E. Montecino-Rodriguez, S.L. Morrison and K.A. Dorshkind**. Univ. of California, Los Angeles. **(118.10)**

3:15 IL7R regulates fetal tissue resident macrophage development. **G. Leung, T. McCann, C.H. Valencia, A. Worthington, C. Forsberg and A.E. Beaudin**. Univ. of California, Merced and Univ. of California, Santa Cruz. **(118.13)**

3:30 Histone Deacetylase 3 regulates the ontogeny and maintenance of tissue-resident macrophages. **Y. Yao, Q. Liu, F. Geissmann, L. Zhou and Q-S. Mi**. Henry Ford Hlth. Sys. and Mem. Sloan Kettering Cancer Ctr. **(118.12)**

3:45 Protein kinase C activates multiple pathways to induce dendritic cell differentiation. **C.A. Chavel and K.P. Lee**. Roswell Park Cancer Inst. **(118.15)**

4:00 An *Nfil3-Zeb2-Id2* pathway imposes *Irf8* enhancer switching during cDC1 development. **P. Bagadia**. Washington Univ. Sch. of Med. in St. Louis. **(118.9)**

4:15 Merocytic dendritic cell: a new subset of conventional dendritic cells. **C. Audiger and S. Lesage**. Univ. of Montreal, Canada. **(118.11)**

10. IMMUNE MECHANISMS AT MUCOSAL SITES

Block Symposium

THU. 2:30 PM—ROOM 30CDE

CHAIRS: *C. NAGLER, B. KELSALL*

2:30 Intestinal permeability and IgA provoke immune vasculitis linked to cardiovascular inflammation. **M. Noval Rivas, D. Wakita, M. Franklin, S. Chen, M. Yamashita, T.R. Crother, K. Shimada and M. Arditi**. Cedars-Sinai Med. Ctr. **(67.1)**

2:45 TLR4 signaling regulates an inflammatory response to food allergens. **E. Campbell and C. Nagler**. Univ. of Chicago. **(67.6)**

3:00 Vitamin A signaling regulates pathological epithelial cell shedding via IL-18. **N.R. Iyer and S. Vaishnava**. Brown Univ. **(67.14)**

3:15 BATF is an essential regulator of migratory ILC2 cell fate and function. **M.M. Miller, P. Patel, K. Bao, T. Danhorn, B. O'Connor and R.L. Reinhardt**. Natl. Jewish Hlth. and Duke Univ. Med. Ctr. **(67.9)**

3:30 Pulmonary resident effector $CD4^+$ T cells fail to effectively utilize glycolysis. **L.M. Roberts, T.J. Evans and C.M. Bosio**. NIAID, NIH. **(67.16)**

3:45 Formation of human T cell mucosal resident memory starts in early life with the intestines. **T. Connors, P. Thapa, M.C. Yopes, R.S. Guyer, M.M. Li, M.E. Snyder and D.L. Farber**. Columbia Univ. Med. Ctr. **(67.21)**

4:00 Single-cell mRNA analysis of colon phagocyte heterogeneity identifies two major macrophage developmental pathways. **B. Kang, L.J. Alvarado, M. Lehman, B-H. Kim, P. Li, H. Cho, J. He, A. Larochelle and B.L. Kelsall**. NIAID, NIH, NHLBI, NIH, NIMH, NIH and NCI, NIH. **(67.11)**

4:15 High-dimensional immune atlas of second trimester human intestinal immunity. **L. Konnikova, S. Stras, L. Werner, J. Toothaker, A. Oldham and D. Shouval**. Univ. of Pittsburgh and Edmond and Lily Safra Children's Hosp. **(67.12)**

11. ADJUVANT, ANTIGEN PRESENTATION, AND PEPTIDE-BASED VACCINES FOR IMMUNOTHERAPY

Block Symposium

THU. 2:30 PM—ROOM 29ABCD

CHAIRS: *J. ARVELUND, B. LUI*

2:30 Vasoactive intestinal peptide signaling–a novel immune checkpoint in pancreatic ductal adenocarcinoma. **S. Ravindranathan, Y. Li, S. Wang, M. Zaidi, G.B. Lesinski, B. El-Rayes and E.K. Waller**. Emory Univ. Sch. of Med. **(70.8)**

2:45 Active cancer vaccine targeting carbohydrates for immunotherapy. **V. Padler-Karavani, E.M. Reuven, S. Leviatan Ben-Arye, H. Yu, R. Duchi, A. Perota, S. Conchon, J-P. Soulillou, C. Galli and X. Chen**. Tel Aviv Univ., Israel, Univ. of California, Davis, Avantea, Italy and INSERM, France. **(70.14)**

3:00 Induction of immune responses and clinical efficacy in a pilot personalized trial of 26 multi-epitope immunotherapy using long peptides Th1 and CD8 simultaneously in progressive tumors. **J.P. Marquez-Manriquez, J.A. Matute-Briseno, S. Icedo-Zamora, A. Durazo-Acuna, PA. Lucero-Diaz, M.O. Rosas-Delgado and A. Camacho-Hernandez**. CICS USA. **(70.17)**

3:15 Immunotherapy with tumor membrane vesicle-based cancer vaccine inhibits metastatic tumor growth in lung cancer model. **R. Bommireddy, H.L. Huang, L.E. Munoz, A.P. Menon, S. Ramalingam and P. Selvaraj**. Emory Univ. Sch. of Med. **(70.7)**

3:30 Natural adjuvants for in situ vaccination lymphoma immunotherapy. **M. Aleynick, P. Peng, R. Upadhyay, L. Hammerich, V. Roudko, M. Yellin and J. Brody**. Icahn Sch. of Med., Mount Sinai and Celldex Therapeutics. **(70.9)**

3:45 Defining the signaling and downstream regulation of neutrophil-dendritic cell development for adjunctive therapy. **M. Gui, J.S. Fites, D. Sykes, M.K. Mansour and B.S. Klein**. Univ. of Wisconsin, Madison and Massachusetts Gen. Hosp. **(70.19)**

4:00 Monocytes outperform ex vivo generated dendritic cells as cellular vaccines to trigger cytotoxic T lymphocyte responses against cancer in pre-clinical models. **M-N. Huang, L.T. Nicholson, K.A. Batich, D. Kopin, A.M. Swartz, J.H. Sampson and M.D. Gunn**. Duke Univ. Sch. of Med. **(70.20)**

4:15 Albumin-Flt3L-induced cross-presenting dendritic cells promote neoantigen-specific antitumor immunity and subsequent tumor control in murine models of cancer. **B.K. Lam, D. Esquivel, B. Lee, M. Tan, T.C. Wu and C-F. Hung**. Johns Hopkins Univ. Sch. of Med. **(70.11)**

12. VETERINARY AND COMPARATIVE IMMUNOLOGY

Block Symposium

THU. 2:30 PM—ROOM 26AB

CHAIRS: *J.C. TELFER, I. SALINAS*

2:30 Evolution of the AID/APOBEC family of cytidine deaminases in lampreys. **M. Hirano, Y. Sutoh, S. Das and M. Cooper**. Emory Univ. Sch. of Med. **(73.1)**

2:45 On the evolutionary origins of Cd1d and the type I, semi-invariant natural killer T cells. **N.C. Suryadevara, A. Kumar, P. Chimski, K. Oh, C. Caster, R.R. Truman, L. Ren, M. Criscitiello and S. Joyce**. Vanderbilt Univ. Med. Ctr., Texas A&M Univ., Natl. Hansen's Dis. Program, Lab. Res. Branch, Louisiana State Univ. and State Key Lab. of Agro-biotechnology, China Agricultural Univ. **(73.2)**

3:00 Rainbow trout as a model for the study of neuroimmune interactions in the nasal mucosa. **I. Salinas, A. Sepahi, A. Kraus and P. Das**. Univ. of New Mexico. **(73.5)**

3:15 Low-weight piglets show differences in intestinal microbiota, intestinal transcriptome and immune cell profile compared to high-weight piglets during the first two weeks of lactation. **M. Blais, B. Morissette, G. Talbot, F. Beaudoin, K. Deschene, L. Lo Verso, N. Bissonnette, K. Lauzon, F. Guay and M. Lessard**. Agr. and Agri-Food Canada, Canada and Univ. Laval. **(73.13)**

3:30 Equine bone marrow mesenchymal stromal cells inhibit reactive oxygen species production by neutrophils without affecting other important microbicidal functions. **C. Henriquez, G. Espinosa, A. Schenffeldt, P. Alarcon, G. Gajardo, A. Plaza, V. Caffi, B. Uberti and G. Moran**. Univ. Austral de Chile, Chile. **(73.19)**

3:45 T cells responses during resolving hepacivirus A infection, a surrogate animal model for human hepatitis C. **F. Gimenez, R.H. Mealey and J.D. Ramsay**. Washington State Univ., Col. of Vet. Med. **(73.20)**

4:00 Disease tolerance and immune response in bovine trypanosomiasis is mediated by CD14 promoter gene. **O. Morenikeji and B. Thomas**. Rochester Instit. of Technol. **(73.17)**

4:15 Characterization of bovine $\gamma\delta$ T cells phenotype following *Mycobacterium bovis* vaccination or virulent infection. **M. Guerra-Maupome, M.V. Palmer, R. Waters and J.L. McGill**. Iowa State Univ. and USDA-ARS, Natl. Animal Dis. Ctr. **(73.16)**

13. INFLUENZA VIRUS AND THE IMMUNE RESPONSE

Block Symposium

THU. 2:30 PM—ROOM 31ABC

CHAIRS: *J. KOHLMEIER, T. STRUTT*

2:30 $CD8^+$ T cells require IL-27R for optimal generation of an effector response during influenza infection. **P. Dunbar, Z-R.T. Li, J. Lobby, S.L. Hayward, L. Lawrence and J.E. Kohlmeier**. Emory Univ. Sch. of Med. **(74.1)**

2:45 $CD4^+$ cell-derived IL-2 synergizes with influenza infection to exacerbate lung inflammation. **T.M. Strutt and A. Gilchrist**. Univ. of Central Florida. **(74.2)**

3:00 IFN-lambda modulates dendritic cells to facilitate protective T cell immunity during influenza A virus infection. **E.A. Hemann, R. Green, B. Turnbull, R.A. Langlois, R. Savan and M. Gale**. Univ. of Washington and Univ. of Minnesota. **(74.3)**

3:15 Concomitant effector and LAG-3 regulatory responses of Th1-committed cells in acute influenza. **A. Dutta, C-T. Huang, C-Y. Hung, T-C. Chen, C-Y. Lin, Y-C. Lin, C-S. Chang, T-A. Chen and Y-L. Huang**. Chang Gung Mem. Hosp., Taiwan. **(74.4)**

3:30 BCL6 modulates tissue neutrophil survival and exacerbates pulmonary inflammation following influenza infection. **J. Sun and B. Zhu**. Mayo Clin. **(74.5)**

3:45 Autoreactive potential of universal influenza vaccines. **M.A. McGargill, M.R. Pillai, T-C. Chang, J. Crawford, R. Keating, J. Labombarde, C. Lewis, J. Guthmiller, Q-Z. Li, P.C. Wilson and P. Thomas**. St. Jude Children's Res. Hosp., The Univ. of Chicago and Univ. of Texas Southwestern Med. Ctr. **(74.6)**

4:00 Influenza A virus (IAV) infection in humans leads to expansion of highly diverse $CD8^+$ T cell repertoires cross-reactive with Epstein Barr virus. **A. Gil, R. Mishra, I.Y. Song, N. Aslan, D. Ghersi and L.K. Selin**. Univ. of Massachusetts Med. Sch. and Univ. of Nebraska. **(74.7)**

4:15 Mechanism of influenza virus-induced inflammatory cell death. **K. Sannula and T-D. Kanneganti**. St. Jude Children's Res. Hosp. **(74.8)**

14. AAI PRESIDENT'S ADDRESS

President's Program

THU. 5:00 PM—BALLROOM 20BCD

CHAIR: *J.L. FLYNN*

PRESENTATION OF THE AAI LIFETIME ACHIEVEMENT AWARD

Recipient: **P.J. Fink.** Univ. of Washington

The AAI Lifetime Achievement Award recognizes a deserving member for a career of scientific achievement and for contributions to AAI and fellow immunologists.

PRESIDENT'S ADDRESS

Introduction: **Olja Finn.** Univ. of Pittsburgh

5:10 At the interface of microbiology and immunology. **J.L. Flynn**. Univ. of Pittsburgh Sch. of Med., AAI President.

15. OPENING NIGHT NETWORKING EVENT

Social Event

THU. 6:00 PM—CENTER TERRACE

Following the President's Address, exit left to the Center Terrace for the Opening Night Networking Event. Connect with friends, make new acquaintances, and plan your week. Bring the complimentary drink ticket attached to your meeting badge.

FRIDAY MORNING

MAY 10

16. MAJOR SYMPOSIUM A: INTERACTIONS OF INNATE AND ADAPTIVE IMMUNE CELLS THAT PROMOTE AUTOIMMUNITY

Major Symposium

FRI. 8:00 AM—BALLROOM 20D

CHAIRS: *D. HAFLER, M.A. BROWN*

8:00 Finding the culprit in human autoimmune disease. **D.A. Hafler**. Yale Univ.

8:35 How testosterone shapes T cell responses in neuroinflammatory disease. **M.A. Brown**. Feinberg Sch. of Med., Northwestern Univ.

9:10 Blaming the victim: target tissues in the autoimmune response. **M.A. Su**. Univ. of North Carolina, Chapel Hill.

9:45 T cell intrinsic and extrinsic factors determine the function of Tregs in autoimmunity. **J. Buckner**. Benaroya Res. Inst.

10:20 Th17 functions in mouse and man. **M. McGeachy**. Univ. of Pittsburgh.

10:55 Th17 cells and induction of tissue inflammation. **V.K. Kuchroo**. Brigham and Women's Hosp.

17. MAJOR SYMPOSIUM B: EXTRINSIC AND INTRINSIC IMMUNE ASPECTS OF THE TUMOR MICROENVIRONMENT

Major Symposium

FRI. 8:00 AM—BALLROOM 20BC

CHAIRS: *V.H. ENGELHARD, M.J. TURK*

8:00 Immune cell infiltration and tertiary lymphoid structures as determinants of antitumor immunity. **V.H. Engelhard**. Univ. of Virginia.

8:35 Tissue-resident memory T cell responses to cancer. **M.J. Turk**. Dartmouth Geisel Sch. of Med.

9:10 The role of the microbiome in response and toxicity to cancer therapy. **J.A. Wargo**. MD Anderson Cancer Ctr.

9:45 Visualization and class discovery of tumoral immune systems – beyond checkpoint blockade. **M. Krummel**. Univ. of California, San Francisco.

10:20 Metabolic regulation of anti-tumor immunity. **S.M. Kaech**. Salk Inst.

10:55 Protective spontaneous humoral responses in ovarian cancer. **J.R. Conejo-Garcia**. H. Lee Moffitt Cancer Ctr. and Res. Inst.

18. FROM THERE TO HERE, FROM HERE TO THERE: INFLAMED THINGS ARE EVERYWHERE

Block Symposium

FRI. 8:00 AM—ROOM 26AB

CHAIRS: *F.E. LUND, M. GERNER*

8:00 Exit of human cutaneous resident memory CD4 T cells that enter the circulation and seed distant skin sites. **P.A. Morawski, M. Klicznik, B. Hoellbacher, S. Varkhande, S. Motley, T. Duhen, I. Gratz and D.J. Campbell**. Benaroya Res. Inst. and Univ. of Salzburg, Austria. **(51.7)**

8:15 Type1 IFN signaling on Tregs modulates the migration of myeloid derived suppressor cells. **S. Tanwar, A. Metidji and E.M. Shevach**. NIAID, NIH. **(51.4)**

8:30 Germinal center organization mediated by T-bet-dependent expression of CXCR3 and CCR6. **J.N. Peel, S.L. Stone, C.D. Scharer, J. Boss and F.E. Lund**. Univ. of Alabama, Birmingham and Emory Univ. **(51.1)**

8:45 Intranodal dendritic cell relocalization during inflammation impacts T cell immunity. **J.M. Leal, B. Olin and M.Y. Gerner**. Univ. of Washington Sch. of Med. **(51.11)**

9:00 Dendritic cell-induced dissemination of Mycobacterium tuberculosis into the central nervous system. **T.E. Gilpin, F.R. Walter, M. Herbath, M. Sandor and Z. Fabry**. Univ. of Wisconsin, Madison. **(51.8)**

9:15 Epithelial cell-derived chemokines induce DC recruitment to the gastric epithelium upon *H. pylori* infection. **M. Hashimi, T.A. Seberll, B. Sidar, J.N. Wilking and D. Bimczok**. Montana State Univ. **(51.6)**

9:30 Monocyte activation in cardiovascular disease through inflammatory signaling associated with CD11c function. **A.A. Hernandez, G.A. Foster, Y. Dai, K.R. Rivara, K. Bailey, G.D. Singh and S.I. Simon**. Univ. of California, Davis. **(51.13)**

9:45 Epithelial membrane protein 2 regulates transepithelial migration of neutrophils into the inflamed airspace. **W-C. Lin, K. Gowdy, J. Madenspacher, R. Zemans, K. Yamamoto, M. Lyons-Cohen, H. Nakano, K. Janardhan, C. Williams, D. Cook, J. Mizgerd and M. Fessler**. NIEHS, NIH, East Carolina Univ., Univ. of Michigan and Boston Univ. Sch. of Med. **(51.14)**

19. INNATE IMMUNE MECHANISMS

Block Symposium

FRI. 8:00 AM—ROOM 30AB

CHAIRS: *N. SUBRAMANIAN, M. VIJAY-KUMAR*

8:00 Autophagy-based unconventional secretion of alarmin HMGB1 by keratinocytes plays a pivotal role in psoriatic skin inflammation. **Z. Wang, H. Zhou, H. Zheng, X. Teng, X. Wei and J. Li**. Sichuan Univ., China. **(59.1)**

8:15 Dietary soluble fiber induces HCC in dysbiotic mice through a spectrum of immunosuppressive mediators. **M. Vijay-Kumar, B.S. Yeoh, V. Singh, R.M. Golonka and P. Saha**. Univ. of Toledo Col. of Med. and Life Sci., The Pennsylvania State Univ. and The Univ. of Toledo Col. of Med. and Life Sci. **(59.3)**

8:30 Ptpn6 inhibits caspase-8- and Ripk3/Mlkl-dependent inflammation. **B.A. Croker, M. Speir, C.J. Nowell, A.A. Chen, J.A. O'Donnell, A.A. D'Cruz, M. Bliss-Moreau, S. Wang, M.A. Kelliher, R. Hakem and M. Gerlic**. Boston Children's Hosp., Monash Inst. of Pharmaceutical Sci., Australia, Harvard Med. Sch., The Walter and Eliza Hall Institute of Med. Res., Australia, Univ. of Massachusetts Med. Sch., Univ. of Toronto, Canada and Tel Aviv Univ., Israel. **(59.4)**

8:45 WITHDRAWN

9:00 Extracellular calcium-phosphate nanoparticles activate the NLRP3 inflammasome through CaSR signaling. **E. Jäger, C. Stäubert, P. Sungur, S. Höppener, S. Strobel, S. Murthy, M. Rossol and U. Wagner**. Leipzig Univ., Germany and Friedrich Schiller Univ. Jena, Germany. **(59.5)**

9:15 A sustained small increase in NOD1 expression promotes ligand-independent oncogenic activity. **L. Rommereim, A.S. Akhade, B. Dutta, C. Hutcheon, N. Lounsbury, C. Rostomily, R. Savan, I. Fraser, R. Germain and N. Subramanian**. Inst. for Systems Biol., NIAID, NIH and Univ. of Washington Sch. of Med. **(59.6)**

9:30 A loss-of-function single nucleotide polymorphism in cytochrome b5 reductase 3 amplifies the response of bone marrow-derived macrophages to high salt. **J.A. Jerome, E.R. DeVallance, P.J. Pagano and A.C. Straub**. Univ. of Pittsburgh Sch. of Med. **(59.7)**

9:45 Exploiting altered enhancer landscapes to decode pathogenic changes in gene expression of diverse hepatic macrophages. **T.D. Troutman, J.S. Seidman, M. Sakai, A. Gola, Z. Ouyang, N.J. Spann, C.M. Bruni, H. Bennett, K. Ego, B-C. Vu, X. Sun, M. Pasillas, J.L. Witztum, R.N. Germain and C.K. Glass**. Univ. of California, San Diego and NIAID, NIH. **(59.2)**

20. CELLULAR MECHANISMS OF INNATE IMMUNITY I

Block Symposium

FRI. 8:00 AM—ROOM 31ABC

CHAIRS: *A. JAMIESON, C. BRYANT*

8:00 Crosstalk between lung epithelial cells and myeloid cells in innate immune defense. **X. Liu, M.A. Boyer and S. Shin**. Perelman Sch. of Med., Univ. of Pennsylvania. **(62.1)**

8:15 Type III interferons are expressed in tuberculosis granulomas and may influence signaling in epithelioid macrophages. **P. Talukdar and J.T. Mattila**. Univ. of Pittsburgh Grad. Sch. of Publ. Hlth. **(62.2)**

8:30 Phenotypic analysis of alveolar macrophage populations in old mice and their response to *Mycobacterium tuberculosis* infection. **W.P. Lafuse, M.V.S. Rajaram, Q. Wu, J.I. Moliva, J.B. Torrelles, J. Turner and L.S. Schlesinger**. Dept. of Microbial Infection and Immunity, The Ohio State Univ. and Texas Biomed. Res. Inst. **(62.3)**

8:45 Alveolar macrophage responses to *Mycobacterium tuberculosis* reveal human-to-human variation in important immunobiology pathways gleaned from functional genomics study. **A. Azad, A. Papp, X. Zhou, M. Pietrzak, M. Wang, E. Arnett, M. Montoya, S. Handelman, G. Rempala, S. Lin, W. Sadee and L. Schlesinger**. Texas Biomed. Res. Inst., The Ohio State Univ. and Univ. of Michigan. **(62.4)**

9:00 Caspase 11 negatively regulates carbapenem-resistant *Klebsiella Pneumoniae*-induced pneumonia. **L. Ghimire, S. Paudel, L. Jin and S. Jeyaseelan**. Louisiana State Univ. **(62.5)**

9:15 Novel role of zinc homeostasis in IL-23 regulation and host defense following bacterial infection. **S.C. Hall, D.R. Smith, D.M. Katafiasz, K.L. Bailey and DarenL. Knoell**. Univ. of Nebraska Med. Ctr. **(62.6)**

9:30 Ketogenic diet activates protective $\gamma\delta$ T cell responses against influenza virus infection. **E.L. Goldberg, R. Molony, S. Sidorov, E. Kudo, V.D. Dixit and A. Iwasaki**. Yale Sch. of Med. **(62.7)**

9:45 Gamma Herpesvirus manipulates HVEM regulated IL-1β pathway to evade immune responses. **W.W. Lin, E. Chapell, G. Brar, T-T. Wu, R. Sun, B. Baaten and C.F. Ware**. Sanford Burnham Prebys Med. Discovery Inst. and Univ. of California, Los Angeles. **(62.8)**

21. INNATE LYMPHOCYTE DEVELOPMENT, STROMA, AND AGING

Block Symposium

FRI. 8:00 AM—ROOM 25ABC

CHAIRS: *A. Beaulieu, M. Kronenberg*

8:00 Single cell sequencing reveals mouse MAIT cell diversity. **S. Chandra, G. Seumois, C. Ramirez, G. Seo, P. Vijayanand and M. Kronenberg**. La Jolla Inst. for Allergy and Immunology. **(65.1)**

8:15 Dose-dependent requirements for ETS1 in invariant natural killer T cell development. **R.C. Morgan and B.L. Kee**. Univ. of Chicago. **(65.2)**

8:30 Assessment of the global chromatin landscape and transcriptome of peripheral iNKT cell subsets. **M.L. Paynich, I. Engel, G. Seumois, S. Liang, S. Herrera de la Mata, A. Sethi, A. Logandha Ramamoorthy Premlal, J.A. Greenbaum, P. Vijayanand, A. Rao, J. Scott-Browne and M. Kronenberg**. La Jolla Inst. for Immunology and Natl. Jewish Hlth. **(65.3)**

8:45 Single cell profiling reveals unique stages of NK cell development. **A.M. Beaulieu**. Rutgers New Jersey Med. Sch. **(65.4)**

9:00 Predicting natural killer cell behavior with mathematical models. **A.J. Millan, S. Sindi and J. Manilay**. Univ. of California, Merced. **(65.5)**

9:15 Heterogeneity in differentiation capacity among ILC precursors in human peripheral blood and tissues. **E. Kokkinou, I. Gutierrez-Perez, R. Vinay Pandey, A. Rao, L. Mazzurana, S. Almer, C. Höög, U. Lindforss, Y. Bryceson and J. Mjösberg**. Ctr. for Infectious Med., Karolinska Inst., Sweden, Karolinska Inst., Sweden, Karolinska Inst., Stockholm, Solna, Karolinska Inst., and IBD-Center, Gastroenterology, Karolinska Univ. Hosp., Sweden, Karolinska Inst., Sweden. and Karolinska Univ. Hospital, Sweden. **(65.6)**

9:30 Sustained E protein activity selectively inhibits ILC2 development. **H.R. Berrett and J. Alberola-Ila**. Oklahoma Med. Res. Fndn. **(65.7)**

9:45 Interleukin-37 improves aging-associated declines in adaptive immunity leading to enhanced suppression of Ph+ leukemia. **C.J. Henry, E. Eisenmesser, C.A. Dinarello and J. DeGregori**. Emory Univ. Sch. of Med. and Univ. of Colorado Anschutz Med. Campus. **(65.8)**

22. HIV/SIV VACCINE/IMMUNOTHERAPY AND IMPACT OF HIV/SIV INFECTION IN ANTIGEN-SPECIFIC IMMUNITY

Block Symposium

FRI. 8:00 AM—ROOM 33ABC

CHAIRS: *E. JANOFF, M. CATALFAMO*

8:00 Influence of vaccine-induced mucosal NKp44^{+} and mucosal NKp44^{-}NKG2A^{-} cells on SIV-infection outcomes in rhesus macaques. **M.A. Rahman, E. Ko, G. Enyindah-Asonye, S.H. Hait, T. Hoang and M. Robert-Guroff**. NCI, NIH. **(72.5)**

8:15 A replicating adenovirus-SIV recombinant prime/protein boost regimen induces SIV-specific T and B cell responses in lymph nodes associated with humoral immunity in the genital mucosa of female rhesus macaques. **S.H. Hait, C.J. Hogge, Z. Mushtaq, T. Hoang and M. Robert-Guroff**. NCI, NIH. **(72.3)**

8:30 Novel HIV DNA vaccine changes the immune hierarchy and elicits broad cytotoxic T cell responses targeting subdominant viral epitopes. **B.K. Felber, Z. Lu, X. Hu, A. Valentin, M. Rosati, J.I. Mullins and G.N. Pavlakis**. Natl. Cancer Inst. and Univ. of Washington. **(72.4)**

8:45 Passive infusion of Fc-modified neutralizing antibodies does not affect the dynamics of plasma virus decay in SHIV-infected macaques. **M. Asokan, A. Maximova, J. Dias, A.R. Crowley, A. Pegu, D. Ambrozak, K. McKee, W. Shi, J-P. Todd, M.E. Ackerman, L. Gama, B.F. Keele, J.D. Lifson, A.S. Perelson, J.R. Mascola and R. Koup**. NIAID, NIH, Geisel Sch. of Med., Dartmouth Col., Frederick Natl. Lab. and Los Alamos Natl. Lab. **(72.6)**

9:00 Impact of gut microbiota on vaccine response in HIV exposed infants. **D.D. Nyangahu, C. Plumlee, J. Wendoh, K.B. Urdahl and H. Jaspan**. Seattle Children's Res. Inst., Univ. of Cape Town, South Africa and Univ. of Washington. **(72.10)**

9:15 Higher PIK3C2B gene expression of H1N1+ specific B cells is associated with lower H1N1 immunogenicity after trivalent influenza vaccination in perinatally HIV infected children. **N. Cotugno, S. Zicari, E. Morrocchi, L.R. De Armas, S. Pallikkuth, S. Rinaldi, S. Rocca, E.C. Manno, P. Zangari, S.F. Andrews, A. Cagigi, P. Rossi, A.B. McDermott, S. Pahwa and P. Palma**. Children's Hosp., Italy, Univ. of Rome, Tor Vergata, Italy, Univ. of Miami and VRC, NIAID, NIH. **(72.11)**

9:45 Recombinant human IL-15 in combination with anti-PD-L1 (Avelumab) in SIV infected rhesus macaques leads to the expansion of a subset of CXCR3^{+}PD1$^{-/low}$ CD8 T cells. **M. Moussa, J. Cheng, P. Chen, H. Chen, T. Li, J. Qin, J.D. Lifson, M.C. Sneller, L. Krymskaya, S. Godin, C. Lane and M. Catalfamo**. Georgetown Univ. Sch. of Med., NIH, NIAID, NIH, Leidos Biomed. Res., Inc. and Smithers Avanza Toxicology Services. **(72.13)**

23. HOW TO CONVERT YOUR CV INTO A RÉSUMÉ

Career Development Session

FRI. 9:00 AM—ROOM 32AB

CHAIR: *M.T. LITZINGER*

For anyone seeking a job outside of academe, how you present yourself on paper is critical. A well-prepared résumé can make all the difference in securing that interview. The focus of this session will be on the important elements of a résumé, the differences between a résumé and the standard academic curriculum vitae, and the information needed to make a good impression. In this special career development session, attendees will be instructed in how to transform their CVs into professional résumés. **Small breakout sessions for individual consulting will follow from 10:30 AM to 12:30 PM in Room 28A**. Bring your CV!

9:00 Introduction. **M.T. Litzinger**. American Assn. of Immunologists.

9:05 How to convert your CV into a résumé. **D. Haseltine**. Baylor Col. of Med.

Résumé? Visit the **AAI Jobs Board** in the Exhibit Hall, Friday – Sunday, 9:30 AM – 4:30 PM.

24. ADVOCATING FOR BIOMEDICAL RESEARCH: WE'VE DONE IT AND SO CAN YOU!

Committee-Sponsored Session

Sponsored by the AAI Committee on Public Affairs

FRI. 10:15 AM—ROOM 26AB

CHAIR: *D.D. CHAPLIN*

A 2017 report by the Congressional Management Foundation supports what we at AAI have long believed: that advocacy is important and effective, and that direct interactions between constituents and lawmakers/their staffs are especially influential. Consistent, strong advocacy has played an essential role in persuading Congress to increase the NIH budget by $9 billion over the last four years and to reject a harmful provision that could have significantly increased taxes on graduate students. But how can you, as a working scientist, help ensure that supporting biomedical research, NIH, and the needs of researchers remain top Congressional priorities?

This session will explore key questions like why, how, and when you should advocate for biomedical research. It will also feature a panel of immunologists from various career stages who have engaged in advocacy in a variety of interesting and unique ways. These researchers will share their experiences and then welcome questions from the audience.

PANELISTS:

- **W.M. Yokoyama**. Washington Univ. Sch. of Med. in St. Louis.
- **P.J. Fink**. Univ. of Washington.
- **L.A. Borghesi**. Univ. of Pittsburgh
- **J.P. Gigley**. Univ. of Wyoming
- **M. Guerra-Maupome**. Iowa State Univ. Col. of Vet. Med.

25. SOCIETY FOR MUCOSAL IMMUNOLOGY (SMI) SYMPOSIUM: COMBATING PATHOGENS AT MUCOSAL SURFACES

Guest Society Symposium

FRI. 10:15 AM—ROOM 25ABC

CHAIRS: *L.A. ZENEWICZ, J. LUND*

10:15 Protecting the lung despite the costs through innate immune triage mechanisms. **A. Jamieson**. Brown Univ.

10:45 The rise and fall of lung-resident T cell memory. **J. Kohlmeier**. Emory Univ.

11:15 Development of mucosal resident memory T cells. **D. Farber**. Columbia Univ.

11:45 Regulation of immunity to virus infection in the genital tract. **J. Lund**. Fred Hutchinson Cancer Res. Ctr.

No photography of any sort is allowed in lectures or poster sessions.

26. THE INTERNATIONAL SOCIETY OF COMPARATIVE AND DEVELOPMENTAL IMMUNOLOGY (ISDCI) SYMPOSIUM: DEUTEROSTOME IMMUNE INNOVATIONS FROM ECHINODERMS TO MAMMALS

Guest Society Symposium

FRI. 10:15 AM—ROOM 30AB

CHAIRS: *M. CRISCITIELLO, T. DE TOMASO*

10:15 Evolution of leukocytes transcriptional development in the sea urchin. **C. Schrankel**. Univ. of California, San Diego.

10:45 Primordial histocompatibility in a colonial tunicate. **T. de Tomaso**. Univ. of California, Santa Barbara.

11:15 Lamprey variable lymphocytes receptors. **J. Rast**. Emory Univ.

11:45 Cattlebodies expand paratope possibilities. **V. Smider**. Scripps Res. Inst.

27. REGULATION OF INNATE AND CYTOTOXIC LYMPHOCYTE RESPONSES: MOLECULAR MECHANISMS

Block Symposium

FRI. 10:15 AM—ROOM 31ABC

CHAIRS: *J. SUN, N. LA GRUTA*

10:15 PD-1 is negatively regulated by LSD1 through interactions with Blimp-1 during acute viral infection. **D.K. Neeld, A. Bally, P. Lu, P. Majumder, B. Barwick and J.M. Boss**. Emory Univ. Sch. of Med. **(60.13)**

10:30 BHLHE40 programs mitochondrial regulation of resident $CD8^+$ T cell fitness and functionality. **C. Li, B. Zhu, Y. Son, Z. Wang, B.T. Edelson, T. Hitosugi, J.C. Rathmell, H. Dong and J. Sun**. Mayo Clin., Washington Univ., St. Louis and Vanderbilt Univ. Med. Ctr. **(60.2)**

10:45 Identification of T_{RM} subsets with distinct cellular states and memory potential. **K. Omilusik, JJ. Milner, N. Kurd, C. Toma, J.T. Chang and A.W. Goldrath**. Univ. of California, San Diego. **(60.14)**

11:00 Tracking the in vivo history and fate of IL-2 producing $CD8^+$ T cells during memory differentiation. **Y. Yuzefpolskiy, S. Sarkar and V. Kalia**. Univ. of Washington Sch. of Med. **(60.15)**

11:15 Trib1 controls antiviral immunity by restraining $CD4^+$ and $CD8^+$ T cell effector responses during chronic infection. **K.S. Rome and W.S. Pear**. Univ. of Pennsylvania. **(60.16)**

11:30 Dynamic changes in 3D spatial chromatin organization underpin virus-specific killer T cell differentiation. **S.J. Turner, A. Morey, M. Olshansky, P. Collas, Z. He, C. Murre and B.E. Russ**. Monash Univ., Australia, Univ. of Oslo, Norway and Univ. of California, San Diego. **(60.11)**

11:45 High spare respiratory capacity is a canonical feature of virtual memory, but not conventional memory CD8 T cells, and is driven by IL-15 signaling. **N.L. La Gruta, K.M. Quinn, F. Kraus, L. Formosa, M. Dagley, E. Saunders, T. Hussain, L. Assmus, A. Costin, J. Clark, G. Ramm, K. Good-Jacobson, M. McConville and M. Ryan**. Monash Univ., Australia and Univ. of Melbourne, Australia. **(60.7)**

12:00 Single cell transcriptomics resolves activation dynamics and cellular states of human blood and tissue T cells. **P.A. Szabo, H.M. Levitin, M. Miron, M.E. Snyder, T. Senda, J. Yuan, Y.L. Chen, E.C. Bush, P. Dogra, P. Thapa, P.A. Sims and D.L. Farber**. Columbia Univ. Med. Ctr. **(60.5)**

28. HEMATOPOIETIC STEM CELL TRANSPLANTATION: ALL OF IMMUNOLOGY OCCURRING IN ONE MODEL

Block Symposium

FRI. 10:15 AM—ROOM 30CDE

CHAIRS: *B. BLAZAR, C. CAPITINI*

10:15 Modeling graft-vs-host disease in humanized mice using different hematopoietic stem cells sources reveals inherent differences in Tc and myeloid cell biology. **N.J. Hess, P. Hematti and J.E. Gumperz**. Univ. of Wisconsin, Madison. **(69.2)**

10:45 Neutralization of IL-2 prevents acute GVHD while preserving GVL activity via regulating PD-L1/PD-1 signaling. **Q. Song, X. Wang, P.J. Martin, Y. Chen and D. Zeng**. Beckman Res. Inst., City of Hope, Fred Hutchinson Cancer Res. Ctr. and Fujian Med. Univ. Union Hosp., China. **(69.11)**

11:00 High stearic acid diet aggravates aGVHD by promoting Th17 cells through *Akkermansia muciniphila*. **S. Ma, B. Yang, H. Gong, X. Wu and D. Wu**. Soochow Univ., China. **(69.24)**

11:15 Expression of the butyrate/niacin receptor, GPR109a on T cells plays an important role in a mouse model of graft versus host disease. **M.D. Docampo, C. Stein-Thoeringer, A. Lazrak, M. Burgos da Silva and M.R.M. van den Brink**. Mem. Sloan Kettering Cancer Ctr. **(69.34)**

11:30 Immune responses to the microbiome tune MHC class II antigen presentation by the intestinal epithelium to control gut pathology. **M. Koyama, P. Mukhopadhyay, I.S. Schuster, A.S. Henden, J. Hülsdünker, A. Varelias, M. Vetizou, R.D. Kuns, R.J. Robb, P. Zhang, B.R. Blazar, R. Thomas, J. Begun, N. Waddell, G. Trinchieri, R. Zeiser, A.D. Clouston, M.A. Degli-Esposti and G.R. Hill**. Fred Hutchinson Cancer Res. Ctr., QIMR Berghofer Med. Res. Inst., Monash Univ., Australia, Freiburg Univ. Med. Ctr., NCI, NIH, Univ. of Minnesota, Sch. of Med., Univ. of Queensland, Australia and Envoi Pathology. **(69.38)**

11:45 Human monocytes educated with exosomes from TLR4 primed mesenchymal stem cells treat acute radiation syndrome by promoting hematopoietic recovery. **M.H. Forsberg, J. Kink, P. Hematti and C.M. Capitini**. Univ. of Wisconsin, Madison. **(69.39)**

12:00 Inhibiting EZH2 function prevents and treats chronic graft vs host disease by disrupting germinal center formation and plasma cell maturation. **M.C. Zaiken, R. Flynn, K. Paz, S. Rhee, P. Park, M. Hemming, P. Sage, A. Sharpe, L. Luznik, I. Mailard, G.R. Hill, K. MacDonald, J. Serody, C. Cutler, J. Koreth, D. Miklos, J. Antin, R. Soiffer, J. Ritz, J. Bradner, J. Qi and B.R. Blazar**. Univ. of Minnesota, Dana Farber Cancer Inst., Harvard Med. Sch., Brigham and Women's Hosp., Harvard Med. Sch., Harvard Med. Sch., Johns Hopkins Univ. Sch. of Med., Univ. of Pennsylvania, Fred Hutchinson Cancer Res. Ctr., QIMR Berghofer Med. Res. Inst., Lineberger Comprehensive Cancer Ctr., Univ. of North Carolina, Chapel Hill and Stanford Univ. Sch. of Med. **(69.42)**

29. VIRUSES, CD8$^+$ T CELLS, AND NATURAL KILLERS

Block Symposium

FRI. 10:15 AM—ROOM 33ABC

CHAIRS: *S. WAGGONER, A. JOHNSON*

10:15 Regulation of antiviral CD8$^+$ T cell immunity by CD352/SLAMF6: from patterns to pathways. **V. van der Heide and D. Homann**. Icahn Sch. of Med. at Mount Sinai. **(76.1)**

10:30 Activation of microglia in CD8 T cell-initiated blood-brain barrier disruption induced during Theiler's virus infection. **R. Khadka, J. Zheng, K. Ayasoufi, F. Jin, Z. Trtiz, L. Wu and A. Johnson**. Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin., Grad. Sch. of Biomed. Sci. **(76.2)**

10:45 Cytomegalovirus infection drives avidity selection of natural killer cells. **N.M. Adams, D. Lumaquin, E.K. Santosa, B.M. Whitlock, B.T. Jackson, J.B. Le Luduec, R. Sottile, O.E. Weizman, M. Huse, K.C. Hsu and J.C. Sun**. Mem. Sloan Kettering Cancer Ctr. **(76.3)**

11:00 The Ly49G2 inhibitory receptor is essential to MHC I-dependent NK cell control of murine cytomegalovirus infection. **J.Michael Cronk, A. Gamache, A. Gillespie and M.G. Brown**. Univ. of Virginia. **(76.5)**

11:15 Single cell cloning of untreated HIV-specific natural killer cells in humans. **O.A. Lucar, J. Ghofrani, P.A. Goepfert, S. Jost and R.K. Reeves**. Harvard Med. Sch. and Univ. of Alabama, Birmingham. **(76.4)**

11:30 Accumulation of CXCR5$^+$ NK cells during chronic SHIV infection is associated with enhanced viral control. **V. Velu, S.A. Rahman, J.M. Billingsley, C.C. Ibegbu, A. Shiferaw, F.J. Villinger, S. Bosinger, P. Johnson, R.R. Amara and V. Velu**. Emory Univ., Univ. of Louisiana Lafayette and Yerkes Primate Res. Ctr. and Emory Vaccine Ctr. **(76.6)**

11:45 LAG-3 modulation of natural killer cell immunoregulatory function. **A. Ali, M.T. Moran, J. Tuazon, I. Gyurova, D.A.A. Vignali and S.N. Waggoner**. Cincinnati Children's Hosp. Med. Ctr., Univ. of Cincinnati and Univ. of Pittsburgh Sch. of Med. **(76.7)**

12:00 IL-18 defines exclusive "memory-like" NK cell populations. **R.R. Anderko, C.R. Rinaldo and R.B. Mailliard**. Univ. of Pittsburgh Grad. Sch. of Publ. Hlth. **(76.8)**

30. IMMUNOLOGY TEACHING INTEREST GROUP

Career Development Session

Sponsored by the AAI Education Committee

FRI. 11:00 AM—ROOM 32AB

CHAIRS: *A.K. BAMEZAI, S. JAMES*

Are you looking for new ideas or strategies to enliven and improve your teaching? If so, please join us for this special interest group which will focus on strategies that instructors can use to successfully convey immunology concepts to students at the undergraduate and graduate level. The session will explore the use of course-based undergraduate research experiences (CURE), just in time teaching (JiTT), research articles, entrepreneurial mindset activities, and more through talks and structured breakout discussion groups. Current educators, new faculty, and trainees with an interest in teaching are welcome.

PANELISTS:

11:03 **M. Snyder**. Towson Univ., Student outcomes in a CURE course using simple model organisms to characterize host-pathogen interactions.

11:17 **L. Shornick**. Saint Louis Univ., Using an entrepreneurial mindset activity to create value in an immunobiology course.

11:31 **J. Frelinger**. Univ. of Rochester, Immunology "hooks": strategies to increase student engagement.

11:45 **W. Carr**. Medgar Evers Col., City Univ. of New York, Using "Pillars of Immunology" research articles to enhance problem-solving skills among undergraduate students at a Predominantly Black Institution.

BREAKOUT SESSION LEADERS:

- **D. Brown**. Univ. of Nebraska, Lincoln, JiTT strategies and student outcomes.
- **D. Chatterjea**. Macalester Col., Ready to talk about it? A toolkit for reading and discussing scientific papers in undergraduate immunology classrooms.
- **N. Pullen**. Univ. of Northern Colorado, Authentic science engagement: toward a CURE for undergraduate immunology.
- **K. Lukin**. Univ. of Colorado, Denver. **J. Novack**. Col. of Med., Pacific Northwest Univ. **S. Redmond**. Radford Univ. Using case studies across the immunology curriculum.

31. CAREERS ROUNDTABLE AND SPEED NETWORKING SESSION

Career Development Session

Sponsored by the AAI Minority Affairs Committee (MAC)

FRI. 11:45 AM—BALLROOM 20A

CHAIR: *R.J. BINDER*

Registration Fee: $30 *(includes lunch plus coffee during networking hour)*. Networking skills have never been more crucial to ensure success for early/mid-career scientists, including those traditionally under-represented in biomedical research. At the roundtable, take advantage of the opportunity to meet in small-group format with accomplished, senior immunologists to hear how they have handled the career challenges you now face and learn what they believe will work for you today. Then, practice networking in a relaxed environment offering a structured networking exercise and personalized feedback on communicating your scientific interests/objectives most effectively. Scientists and trainees of all backgrounds are encouraged to attend!

Discussion Topics:

- Grad Student: finding a mentor, setting sights on postdoc training
- Postdoc: finding a mentor, setting sights on a faculty position
- Junior Faculty: preparing for promotion and tenure
- Work-life Balance, it's real!
- Academia or Industry: how to decide (or switch sides)
- Government Agency Careers
- Non-Bench-Research Science Careers–entrepreneurship/research technology; non-profits/foundations; intellectual property/patent law

FRIDAY AFTERNOON

MAY 10

32. TOWARDS ONE HEALTH: UNDERSTANDING DISEASE WITH ANIMAL MODELS

Committee-Sponsored Session

Sponsored by the AAI Veterinary Immunology Committee

FRI. 12:30 PM—BALLROOM 26AB

CHAIRS: *C. LOVING, A.J. YOUNG*

One Health is an approach to ensure the well-being of people, animals, and the environment through collaborative problem solving and interdisciplinary collaboration. Many of the microbes and environmental stressors that impact humans also impact animals, as they overlap in many of the same ecosystems. The intent of this symposium is to present research in animal models that provide important discoveries and findings for improving both human and animal health. The symposium will feature research in pigs, neonatal cattle, and fish and will span topics of stress, interventions, therapy, and neuroimmune interactions. It will showcase commonalities between human and animal health, and highlight the value of One Health approach for understanding immunity and enhancing disease resilience.

12:30 The pig as a translational model to evaluate NKT cell therapy. **J.P. Driver**. Univ. of Florida.

1:00 Use of the neonatal calf for development of novel intervention strategies to reduce and prevent respiratory syncytial virus infection. **J.L. McGill**. Iowa State Univ.

1:30 Early life stress impacts lifelong immune function, but how? Studying piglets may shed light. **A.J. Moeser**. Michigan State Univ.

2:00 Rainbow trout as model for understanding neuroimmune interactions at the nasal mucosa. **I. Salinas**. Univ. of New Mexico.

33. THE AMERICAN SOCIETY OF TRANSPLANTATION (AST) SYMPOSIUM: TEACHING OLD DOGMAS NEW TRICKS: NOVEL FUNCTIONS OF MACROPHAGES AND DENDRITIC CELLS

Guest Society Symposium

FRI. 12:30 PM—ROOM 33ABC

CHAIRS: *D. ROTHSTEIN, A. CHONG*

12:30 Innate allorecognition drives allograft rejection. **F. Lakkis**. Univ. of Pittsburgh.

1:00 Donor pulmonary monocytes and allograft dysfunction. **A. Bharat**. Northwestern Univ.

1:30 Donor alveolar macrophages mediate chronic lung allograft rejection. **T. Monhanakumar**. Univ. of Arizona.

2:00 Tolerogenic macrophages in the spleen and heart. **X. Luo**. Duke Univ.

34. THE AMERICAN SOCIETY OF TROPICAL MEDICINE AND HYGIENE (ASTMH) SYMPOSIUM: IMMUNE RESPONSES TO PARASITES

Guest Society Symposium

FRI. 12:30 PM—ROOM 25ABC

CHAIRS: *R. STEPHENS, F.M. NDUNGU*

12:30 $\alpha\beta$ and $\gamma\delta$ T cells and cytokines in the regulation of the immune response to P. falciparum malaria. **M.E. Feeny**. Univ. of California, San Francisco Med. Ctr.

1:00 LINGO proteins: a new language for the mucosal barrier. **D. Herbert**. Univ. of Pennsylvania Sch. of Vet. Med.

1:30 From mouse to man to vaccine: B cell memory to malaria. **F.M. Ndungu**. KEMRI-Wellcome Trust Res. Programme, Kenya.

2:00 Ex vivo analysis of P. falciparum-specific B cell responses to natural malaria infection in children and adults. **C.S. Hopp**. NIH, NIAID.

35. CYTOKINES REGULATING INFLAMMATION

Block Symposium

FRI. 12:30 PM—ROOM 30CDE

CHAIRS: *L.E. HARRINGTON, P. KUMAR*

12:30 Mass-cytometry reveals global immune remodeling with multi-lineage hypersensitivity to type I interferon in Down syndrome. **K.A. Waugh, A. Pandey, K.R. Jordan, K.P. Smith, R.E. Granrath, S. Khanal, E.T. Butcher, A.L. Rachubinski, J.A. McWilliams, P. Araya, R. Minter, T. Dimasi, K.L. Colvin, D. Baturin, A.T. Pham, M.D. Galbraith, M.E. Yeager, K.D. Sullivan, C.C. Porter, E.W. Hsieh and J.M. Espinosa**. Linda Crnic Inst. for Down Syndrome, Univ. of Colorado Anschutz Med. Campus and Emory Univ. Sch. of Med. **(52.1)**

12:45 A circulating NAD biosynthetic enzyme is a novel modulator of inflammation. **A. Manago', V. Audrito, F. Mazzola, L. Sorci, F. Gaudino, K. Gizzi, D. Incarnato, G. Minazzato, A. Iannillo, A. Varriale, S. D'Auria, G. Mengozzi, G. Politano, S. Olivero, N. Raffaelli and S. Deaglio**. Univ. of Turin, Italy, Polytechnic Univ. of Marche, Italy, Italian Institute for Genomic Med., Italy, AOU Città della Salute e della Scienza, Italy, Institute of Food Science, CNR, Italy and Politecnico di Torino, Italy. **(52.2)**

1:00 Human interleukin-2 receptor beta mutations associated with defects in immunity and peripheral tolerance. **Z. Zhang, F. Gothe, P. Pennamen, J. James, D. McDonald, C. Mata, Y. Modis, A. Alazami, M. Acres, W. Haller, C. Bowen, R. Doffinger, J. Sinclair, S. Brothers, Y. Zhang, H. Matthews, S. Naudion, F. Pelluard, H. Alajlan, Y. Yamazaki, L. Notarangelo, J. Thaventhiran, K. Engelhardt, H. Al-Mousa, S. Hambleton, C. Rooryck, K.G.C. Smith and M.J. Lenardo**. NIAID, NIH, Univ. of Newcastle, UK, Univ. of Cambridge, UK, King Faisal Specialist Hosp. and Res. Ctr., Saudi Arabia, Birmingham Children's Hosp., Starship Children's Hosp., Univ. of Bordeaux, France and CHU Bordeaux, France. **(52.14)**

1:15 WITHDRAWN

1:30 A non-depleting PC61 antibody allows residual CD25 function that maintains regulatory T cell-mediated immune homeostasis. **E. Hayes, C. Hagan and D.J. Campbell**. Benaroya Res. Inst. and Univ. of Washington. **(52.16)**

1:45 A critical role for IL-37 in regulatory T cell maintenance and CD4+ T cell inhibition. **D.G. Osborne, J. Domenico, C.A. Dinarello and M. Fujita**. Univ. of Colorado Sch. of Med. **(52.17)**

2:00 Interleukin-37 promotes colitis-associated carcinogenesis via SIGIRR-mediated cytotoxic T cells exhaustion. **J. Li, X. Teng, X. Wei, Z. Wang, F.L. Zeng, H. Zhou and H. Zheng**. West China Hosp., Sichuan Univ., and Collaborative Innovation Ctr. for Biotherapy, China. **(52.10)**

2:15 Human *IL10* promoter haplotypes confer differential outcomes to experimental colitis in humanized BAC mice. **V. Vacharathit, J. Ma, D.C. Gunasekera, P. Shah, A. Sheh, C.F. Brayton, M.T. Whary, J.G. Fox and J.H. Bream**. Johns Hopkins Univ. Sch. of Med., Johns Hopkins Univ. Bloomberg Sch. of Publ. Hlth. and Massachusetts Inst. of Technol. **(52.13)**

36. CYTOPLASMIC SENSING

Block Symposium

FRI. 12:30 PM—ROOM 31ABC

CHAIRS: *T.S. XIAO, S.M. MAN*

12:30 Molecular mechanisms of gasdermin D autoinhibition and recognition by inflammatory caspases. **T.S. Xiao, Z. Liu, J. Yang, C. Wang and R. Yang**. Case Western Reserve Univ. **(63.9)**

12:45 Calpain drives pyroptotic vimentin cleavage, intermediate filament loss, and cell rupture that mediates immunostimulation. **M.A. Davis, M.R. Fairgrieve, A. den Hartigh, O. Yakovenko, B. Duvvuri, C. Lood, S. Fink, W.E. Thomas and M.J. Gale**. Univ. of Washington. **(63.12)**

1:00 PtdIns4P on dispersed *trans*-Golgi network mediates NLRP3 inflammasome activation. **J. Chen and Z.J. Chen**. Univ. of Texas Southwestern Med. Ctr. **(63.8)**

1:15 Inflammasome-mediated sensing of multi-component pore-forming toxins. **S.M. Man**. Australian Natl. Univ., Australia. **(63.10)**

1:30 Lysophosphatidylcholine activates caspase-1 by bringing about release of ATP and sensitization of purinergic receptor. **S. Ismaeel and A. Qadri**. Natl. Inst. of Immunology, India. **(63.5)**

1:45 Proteomic profiling of autoinflammatory diseases, NOMID and CANDLE before and after treatment with interleukin-1 or with interferon blockade. **S. Alehashemi, M. Sawhney, B. Sellers, A. de Jesus, F. Cheung, A. Biancotto and R. Goldbach-Mansky**. NIAID, NIH. **(63.4)**

2:00 A host cell-intrinsic innate regulatory circuit limits inflammasome activity and promotes immune escape of *Salmonella* inside macrophages. **A.S. Akhade, S.M. Atif, B.S. Lakshmi, N. Dikshit, A. Qadri and N. Subramanian**. Inst. for Syst. Biol. and Natl. Inst. of Immunology, India. **(63.13)**

2:15 Alarmin(g) outcomes of intracellular LPS sensing. **V. Rathinam, A. Russo, A. Menoret, G. Rabinovich, S. Duduskar, S. Deshmukh and A.T. Vella**. UConn Hlth., Universidad de Buenos Aires, Argentina and Jena Univ. Hosp. **(63.14)**

37. CELLULAR THERAPIES FOR CANCER

Block Symposium

FRI. 12:30 PM—BALLROOM 20D

CHAIRS: *M. MARTINEZ-PANIAGUA, R. KEDL*

12:30 Identifying and engineering TCR specificity against solid tumor neoantigens. **M.S. Naradikian, L. Montero, S. Hall, R. Thota, A. Frentzen, M. Bahmanof, L. Sternberg, J. Lane, Z. Kosaloglu-Yalcin, M. Lanka, A. Miller, B. Peters, E. Cohen and S. Schoenberger**. La Jolla Inst. for Allergy and Immunology and Univ. of California, San Diego. **(134.1)**

12:45 CAR^+ T cell anti-tumor efficacy revealed by multi-dimensional single-cell profiling. **X. An, G. Romain, M. Martinez-Paniagua, I.N. Bandey, J.RT. Adolacion, M. Fathi, I. Liadi, F. Sadeghi, A. Mahendra, A. Amritkar, B. Roysam, H. Singh, L.J. Cooper and N. Varadarajan**. Univ. of Houston, Univ. of Texas MD Anderson Cancer Ctr. and Ziopharm Oncology. **(134.2)**

1:00 Disruption of TOX transcription factors enhances CAR T cells function in solid tumors. **H. Seo, J. Chen, E. Gonzalez Avalos, D. Samaniego Castruita, I. Lopez Moyado, C-J. Wu, A. Das, L-F. Lu, A. Bhandoola and A. Rao**. La Jolla Inst. for Immunology, Univ. of California, San Diego and NCI, NIH. **(134.3)**

1:15 CD28 homolog is a strong activator of natural killer cells for lysis of B7H7-positive tumor cells. **X. Zhuang and E.O. Long**. NIAID, NIH. **(134.5)**

1:30 Intratumoral localization of pattern recognition receptor signaling informs CAR T cell design. **L. Johnson, C.H. June and A.J. Minn**. Univ. of Pennsylvania. **(134.4)**

1:45 Robust antitumor effects of SNA-based T cell therapy. **D. Dominguez, N. Chernyak, M. guan, Y. Chou, A. Long, L. Qin, L. Cole, J. Ann, S. Chen, J. Fan, A. Lee, C. Mirkin and B. Zhang**. Northwestern Univ. **(134.7)**

2:00 Integrated profiling of T cells and tumor cells demonstrates metabolic adaptation essential for melanoma cell therapy. **M.A. Martinez-Paniagua, C. Haymaker, J.R.T. Adolacion, X. An, I.N. Bandey, C. Creasy, T. Geiger, M. Harel, J. Robinson, J.B. Nielsen, A. Amritkar, S. Woodman, B. Roysam, P. Hwu, C. Bernatchez and N. Varadarajan**. Univ. of Houston, Univ. of Texas MD Anderson Cancer Ctr., Tel Aviv Univ., Isreal and Chalmers Univ. of Technol., Sweden. **(134.6)**

38. AAI BUSINESS MEETING AND AWARDS PRESENTATIONS

AAI Session

FRI. 1:00 PM—ROOM 30AB

CHAIR: *M.M. HOGAN*

AAI reports on the "state of the association" to its members at every AAI annual meeting. Members will hear from the Executive Director, the Secretary-Treasurer, the Editors-in-Chief of AAI journals (*The Journal of Immunology* and *ImmunoHorizons*), and the Chair of the Committee on Public Affairs on the financial standing of AAI, recent activities and initiatives, and other matters of importance to the membership. Selected 2019 AAI awards will also be presented during this session. Refreshments will be provided.

AAI Distinguished Service Awards

Introduction: **M.M. Hogan**. AAI
Recipients:
B.A. Garvy. Univ. of Kentucky Chandler Med. Ctr.
For outstanding service to AAI and the immunology community as member and Chair of the AAI Committee on Public Affairs, 2011-2018

C.B. Mathias. Western New England Univ.
For outstanding service to AAI and the immunology community as Director of the AAI High School Teachers Program, 2012-2018

Chambers-Thermo Fisher Scientific Award
To advance the career of an early-career scientist who attends the AAI annual meeting and presents an outstanding abstract specifically in the area of cancer biology

Introduction: **M.M. Hogan**. AAI; and **C. Hergersberg**. Thermo Fisher Scientific.
Recipient: **C. Lu**. Med. Col. of Georgia, Augusta Univ.

Lefrançois-BioLegend Award
To advance the career of a trainee who attends the AAI annual meeting and presents an outstanding abstract specifically in the area of mucosal immunology

Introduction: **M.M. Hogan**. AAI; and **G. Lay**. BioLegend.
Recipient: **S.M. Anthony**. Univ. of Iowa

Lustgarten-Thermo Fisher Scientific Award
To advance the career of a mid-career scientist who attends the AAI annual meeting and presents an outstanding abstract specifically in the area of immune regulation

Introduction: **M.M. Hogan**. AAI; and **C. Hergersberg**. Thermo Fisher Scientific.
Recipient: **M. Vijay-Kumar**. Univ. of Toledo Col. of Med. and Life Sci.

Pfizer-Showell Travel Award
To recognize the professional promise of an early-career investigator

Introduction: **M.M. Hogan**. AAI
Recipient: **S.M. Man**. Australian Natl. Univ.

AAI-Thermo Fisher Trainee Achievement Awards
To recognize promising trainees in the field of immunology.

Introduction: **M.M. Hogan**. AAI; and **C. Hergersberg**. Thermo Fisher Scientific.

Recipients:
B. Akkaya. NIAID, NIH.
L. Beura. Univ. of Minnesota.
M. Deng. Univ. of North Carolina, Chapel Hill.
R. Haines. Emory Univ.
S.L. Park. Univ. of Melbourne, Australia.
D.J. Theisen. Washington Univ. in St Louis.

OTHER AWARDS AND GRANTS BEING ACKNOWLEDGED

- AAI Early Career Faculty Travel Grants
- AAI Laboratory Travel Grants
- AAI Undergraduate Faculty Travel Grants
- AAI Trainee Abstract Awards
- AAI Trainee Poster Awards
- FASEB Dream Travel Awards
- AAI Minority Scientist Travel Awards

39. OBTAINING DEEP MECHANISTIC INSIGHTS FROM AND INTO THE HUMAN SYSTEM

Committee-Sponsored Session

Sponsored by the AAI Clinical Immunology Committee

FRI. 3:45 PM—ROOM 33ABC

CHAIRS: *J.S. ORANGE, V. TANEJA*

The study of human disease has always provided the opportunity to derive unconventional insights into immunology. Current genomic technologies and cutting-edge biological approaches have not only made these opportunities more accessible, but they are being brought to bear with greater frequency and impact. Aberrant human immunity owing to inherent genetic influence can result in immunodeficiency, immunodysregulation, autoimmunity, autoinflammation or blends of these clinical expressions. The faculty of this session have made seminal contributions to understanding how aberrant immunity causes clinical disease while providing profound mechanistic insights into how the human immune system works.

3:45 Immune dysregulation with STAT3 gain-of-function. **M.A. Cooper**. Washington Univ. Sch. of Med. in St. Louis.

4:15 Novel immunodeficiencies from the ICID network. **J. Chou**. Harvard Med. Sch.

4:45 Central immune tolerance and human autoimmunity. **M.S. Anderson**. Univ. of California, San Francisco.

5:15 Elucidating molecular mechanisms of a novel inherited immunodeficiency-immunodysregulation disorder. **H. Su**. NIAID/NIH.

40. NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES (NIAID) SYMPOSIUM: IMAGING TISSUE-SPECIFIC IMMUNITY

NIH-Sponsored Session

FRI. 3:45 PM—ROOM 25ABC

CHAIRS: *J.J. BREEN, D. FOWELL*

3:45 T cell navigation within inflamed skin. **D. Fowell**. Univ. of Rochester.

4:15 Immune pathology from the molecular scale on up. **G. Nolan**. Stanford Univ.

4:45 Microscopy imaging of cellular immune responses in the nasal mucosa. **R. Gonzalez**. Harvard Univ.

5:15 Host-pathogen interactions that lead to T cell priming. **C. Hunter**. Univ. of Pennsylvania.

41. GERMAN SOCIETY FOR IMMUNOLOGY (DGFI) SYMPOSIUM: NUCLEIC ACID IMMUNITY

Guest Society Symposium

FRI. 3:45 PM—ROOM 26AB

CHAIRS: *G. HARTMANN, V. HORNUNG, A. ROERS*

3:45 German Society of Immunology. **T. Kamradt**. Univ. of Jena, Germany.

3:55 Cooperation of DNases and cGAS in immune sensing of DNA. **G. Hartmann**. Univ. of Bonn, Germany.

4:13 Mechanisms of pathogenic chronic activation of intracellular DNA sensing. **A. Roers**. Technische Universität Dresden, Germany.

4:31 DNA-induced inflammasome activation. **V. Hornung**. Univ. of Munich, Germany.

4:49 RNA modifications impairing the RIG-I pathway. **M. Schlee**. Univ. of Bonn, Germany.

5:07 Insights into innate DNA sensing through the cGAS-STING pathway. **A. Ablasser**. École Polytechnique Fédérale de Lausanne, Switzerland.

5:25 Therapeutic approaches to type 1 interferonopathies. **M.A. Lee-Kirsch**. Technische Universität Dresden, Germany.

42. BASIC AUTOIMMUNITY: IMMUNOREGULATION

Block Symposium

FRI. 3:45 PM—ROOM 30CDE

CHAIRS: *H-C. HSU, P. RAMAKRISHNAN*

3:45 Overexpression of *Pbx1-d*, a novel splice isoform of *Pbx1* associated with lupus susceptibility, regulates regulatory T cell plasticity. **S-C. Choi, C. Cornaby and L. Morel**. Univ. of Florida. **(116.4)**

4:00 AID deficiency greatly improves survival and diminishes renal pathology in the BXSB mouse model of SLE. **C.M. Leeth, J. Zhu, A. Potter, M. Hasham, M. Richwine and D.C. Roopenian**. Virginia Polytechnic Inst. and State Univ. and Jackson Lab. **(116.12)**

4:15 sCD83 alleviates experimental autoimmune uveitis through disrupting the regulation of Rab1a/LRRK2 on F-actin rearrangements. **W. Lin**. Shandong Acad. of Med. Sci., China. **(116.2)**

4:30 Type-1 interferons inhibition of interleukin-10 signaling in T cells in type 1 diabetes development. **M. Iglesias Lozano, M. Chicco, D. Bibicheff, G. Brandacher and G. Raimondi**. Johns Hopkins Univ. Sch. of Med. **(116.8)**

4:45 Regulation of FOXP3 expression by c-Rel O-GlcNAcylation. **T.J. de Jesus, J. Tomalka, S. Shukla, F. Staback, R. Agarwal, J. Centore and P. Ramakrishnan**. Case Western Reserve Univ. **(116.15)**

5:00 The cellular basis of the PD-1/PD-L1 regulatory pathway in diabetic autoimmunity in the NOD mouse. **H. Hu, X. Wan, P. Zakharov and E.R. Unanue**. Washington Univ. Sch. of Med. **(116.5)**

5:15 Essential role of IL-17A in Tregs induction in autoimmune uveitis. **W.P. Chong, Y. Zhong, M. Mattapallil, J. Chen and R.R. Caspi**. Sun Yat-sen Univ., China and NEI, NIH. **(116.6)**

5:30 CD300c is a negative regulator of T cell immunity. **L. Lai, C. Cui, M. Su and Y. Lin**. Univ. of Connecticut. **(116.3)**

43. B CELLS AND TfH CELLS

Block Symposium

FRI. 3:45 PM—ROOM 31ABC

CHAIRS: *T.L. ROTHSTEIN, Z. FABRY*

3:45 Production of peanut-specific IgE in a food allergy model is promoted by T follicular regulatory cells via an IL-10-dependent pathway. **M.M. Xie, H. Liu, K. Yang and A. Dent**. Indiana Univ. Sch. of Med. **(121.1)**

4:00 Interleukin-27-producing B cells are critical regulators of immunity during persistent viral infection. **I. Pratumchai, Z. Huang, J. Zak and J.R. Teijaro**. Scripps Res. Inst. **(121.4)**

4:15 Distinct antibody repertoire of cerebral spinal fluid B cells from healthy controls. **S. Husain-Krautter, D. Vos, J.A. Gallego, A.K. Malhotra and T.L. Rothstein**. Delaware Psychiatric Ctr., Western Michigan Univ. Homer Stryker MD Sch. of Med., Weill Cornell Med. Col. and Zucker Hillside Hosp. **(121.6)**

4:30 The surprising role of indoleamine 2,3-dioxygenase in supporting the survival of bone marrow-resident long-lived plasma cells. **S.M. Lightman, L.M. Carlson and K.P. Lee**. Roswell Park Cancer Inst. **(121.7)**

4:45 T follicular helper cell recruitment to the ischemic brain. **L.T. Kissel, A. Rayasam, J. Kijak, Y.H. Choi, M. Hsu, K. Kovacs, M. Sandor and Z. Fabry**. Univ. of Wisconsin, Madison, Univ. of California, San Francisco, Med. Col. of Wisconsin and Univ. of Wisconsin Sch. of Med. and Publ. Hlth. **(121.10)**

5:00 Induction of T cell-independent hypermutated and protective IgG and IgA antibody responses by TLR4-BCR or TLR5-BCR co-engagement. **C.E. Rivera, D. Chupp, H. Yan, J. Im, J. Wang, H.N. Sanchez, S. Wu, J. Taylor, H. Zan, Z. Xu and P. Casali**. Univ. of Texas Hlth. Sci. Ctr. San Antonio. **(121.11)**

5:15 Clonal selection of cross-reactive memory B cells dominates recall responses against heterologous flaviviruses without a requirement for secondary affinity maturation. **R. Wong, J. Richner, H. Zhao, M.J. Shlomchik, M.S. Diamond and D. Bhattacharya**. Washington Univ., St. Louis and Univ. of Pittsburgh. **(121.13)**

5:30 T follicular regulatory cells reduce proliferation and downregulate induction of costimulatory molecules on human Tfh and B cells. **I. Sayin, C. Smith, M. Buggert, M.R. Betts and D.H. Canaday**. Case Western Reserve Univ., Karolinska Inst., Sweden and Perelman Sch. of Med., Univ. of Pennsylvania. **(121.16)**

44. CD4+ T CELL DIFFERENTIATION AND FUNCTION

Block Symposium

FRI. 3:45 PM—ROOM 32AB

CHAIRS: *L. D'Cruz, V. Lazarevic*

3:45 Novel Foxp3 regulators discovered by a genome-wide CRISPR screen. **C.S. Loo and Y. Zheng**. Salk Inst. for Biological Studies. **(128.1)**

4:00 CIS inhibits Treg-intrinsic TH2 program and suppresses allergic airway inflammation. **X.O. Yang, H. Zheng, X. Wu, R-L. Jiang, E. Castillo, C. Chock, Q. Zhou, M. Liu and C. Dong**. Univ. of New Mexico Sch. of Med. and Tsinghua Univ., China. **(128.2)**

4:15 Id2 is necessary for differentiation and survival of adipose-resident Tregs. **A.B. Frias, E.J. Hyzny, L.Y. Beppu, H.M. Buechel and L.M. D'Cruz**. Univ. of Pittsburgh Sch. of Med. **(128.3)**

4:30 ICOS signaling in visceral adipose tissue regulatory T cell homeostasis and function. **K.L. Mittelsteadt and D.J. Campbell**. Univ. of Washington and Benaroya Res. Inst. **(128.4)**

4:45 Role of Ets transcription factors in the development of T_H9 cells. **R.P. Kharwadkar, B.J. Ulrich, Y. Fu and M.H. Kaplan**. Indiana Univ. Sch. of Med. **(128.5)**

5:00 Prolonged activation in CD4+ T cells results in extensive mitochondrial remodeling despite the metabolic dominance of aerobic glycolysis. **B. Akkaya, A. Roesler, B.P. Theall, J.A. Al Souz, P. Miozzo, J. Traba, M. Smelkinson, J. Kabat, D. Dorward, S.K. Pierce and M. Akkaya**. NIAID, NIH and NHLBI, NIH. **(128.6)**

5:15 Egr2 deficiency significantly impairs the development of pathogenic T_H17 cells. **Y. Gao, Y. Wang, Y. Guan, N.J. Bouladoux, T. Break, M.S. Lionakis, Y. Belkaid and V. Lazarevic**. NCI, NIH and NIAID, NIH. **(128.7)**

5:30 The Ikaros zinc finger transcription factor Eos regulates $CD4^+$ T_H1 and $CD8^+$ T_C1 differentiation programs. **B.K.N. Sreekumar, M.D. Powell, K. Read, J. Zafar, D. Jones, C. Baker, I.C. Allen and K.J. Oestreich**. Virginia Polytechnic Inst. and State Univ., Carilion Sch. of Med., Virginia Polytechnic Inst. and State Univ. and Virginia-Maryland Col. of Vet. Med. **(128.8)**

45. RESIDENT MEMORY IN TUMOR IMMUNOTHERAPY

Block Symposium

FRI. 3:45 PM—ROOM 29ABCD

CHAIRS: *J. MILNER, M.J. TURK*

3:45 Resident memory (T_{RM}) cells sustain immunity to cancer at sites of frequent metastasis. **A. Molodtsov, K. Lewis, J. Han, J. Vella, Y. Zhao, B. Malik, P. Zhang, F. Kolling, C. Cheng, Y.H. Huang, C. Angeles and M.J. Turk**. Geisel Sch. of Med., Dartmouth Col. **(138.1)**

4:00 Tissue-resident memory T cells mediate melanoma surveillance and are targets of immunotherapy. **S.L. Park, A. Buzzai, J.L. Hor, M. Effern, S.N. Christo, S.N. Mueller, M. Holzel, J. Waithman, L.K. Mackay and T. Gebhardt**. Univ. of Melbourne, Australia, Telethon Kids Inst., Australia and Univ. of Bonn, Germany. **(138.2)**

4:15 Focal tumor ablation by irreversible electroporation augments immunotherapy to promote tumor growth control and formation of tumor antigen-specific tissue-resident memory CD8+ T cells. **B.J. Burbach, S.D. O'Flanagan, M.R. Rollins, J.R. Slaughter, K.M. Young, M. Song, Q. Shao, S.M. Azarin, J.C. Bischof and Y. Shimizu**. Univ. of Minnesota. **(138.3)**

4:30 Immune pressure against ovarian cancer depends on antigen-specific TRM T cells. **C.M. Anadon Galindo, J. Perez Sanz, S. Biswas, K.K. Payne, X. Yu, T.L. Costich, R. Chaurio Gonzalez and J.R. Conejo-Garcia**. Moffitt Cancer Ctr. and Res. Inst. **(138.4)**

4:45 Sphingosine-1-phosphate receptor 1 loss mediates T cell sequestration in bone marrow in the setting of intracranial tumors: a novel mode of cancer-induced immunosuppression. **D.S. Wilkinson, P. Chongsathidkiet, C. Dechant and P. Fecci**. Duke Univ. Med. Ctr. **(138.5)**

5:00 Epigenetic targeting of Brd4 constrains $CD8^+$ T cell differentiation during infection and cancer. **J.J. Milner, C. Toma, K. Omilusik, H. Nguyen, B. Yu, A. Delpoux, T. Yoshida, S. Quon, A. Dey, S.M. Hedrick, K. Ozato, S. Crotty, M.E. Pipkin and A.W. Goldrath**. Univ. of California, San Diego, Stanford Univ., NICHD, NIH, La Jolla Inst. for Immunology and Scripps Res. Inst. **(138.6)**

5:15 Therapeutic antibody discovery in lung tumors by B cell receptor sequencing. **K.J. Kramer, N. Raju, A. Greenplate, K. Pilewski, P. Massion and I. Georgiev**. Vanderbilt Univ. Med. Ctr. **(138.7)**

46. NOVEL STRATEGIES AND THEIR FUNCTIONS FOR PREVENTING RESPIRATORY INFECTIONS

Block Symposium

FRI. 3:45 PM—ROOM 30AB

CHAIRS: *Y. YASUTOMI, T.M. ROSS*

3:45 Mucosal delivery of nanofiber booster vaccine enhances generation of antigen-specific memory T cells in the lung parenchyma. **M.A. Files, P. Bharaj, T.B. Saito, J. Rudra and J.J. Endsley**. Univ. of Texas Med. Br. and Washington Univ. in St. Louis. **(139.2)**

4:00 Intravenous Bacille Calmette-Guerin provides protection across a dose spectrum in a Rhesus macaque model of tuberculosis. **J.J. Zeppa, P.A. Darrah, S. Pokkali, J.A. Hackney, P.A. Maiello, C.A. Scanga, D.J. Laddy, P.L. Lin, R.A. Seder, M. Roederer and J.L. Flynn**. Univ. of Pittsburgh Sch. of Med., VRC, NIAID, NIH and AERAS. **(139.3)**

4:15 SOCS1 antagonist-expressing recombinant BCG enhances anti-tuberculosis protection in a mouse model. **Y. Yasutomi**. Natl. Inst. of Biomed. Innovation, Hlth. and Nutrition, Japan. **(139.4)**

4:30 Antigen-presenting cell targeted, adjuvant-free mucosal vaccine induces protection against pneumococcal infection. **S. Kumar, R. Sunagar and E.J. Gosselin**. Albany Med. Col. **(139.6)**

4:45 Immunity of a *Klebsiella Pneumoniae* vaccine independent of antigen-specific antibody. **N. Iwanaga, I. Sandquist, K. Chen, E.B. Norton, J.R. Moreno and J.K. Kolls**. Tulane Univ. Sch. of Med., Univ. of Pittsburgh Sch. of Med. and Univ. of Rochester Med. Ctr. **(139.7)**

5:00 Robust immune response and protection generated by a polyanhydride-based nanoparticle vaccine utilizing the RSV prefusion F protein and/or M protein. **L. Stephens, K.A. Ross, S.M. Hartwig, J.S. McLellan, B. Narasimhan, K.L. Legge and S.M. Varga**. Univ. of Iowa, Iowa State Univ. and Univ. of Texas, Austin. **(139.11)**

5:15 The impact of pre-existing B-cell memory in the response to influenza vaccination. **R.B. Abreu**. Univ. of Georgia, Athens. **(139.19)**

5:30 Neuraminidase inhibition governs protection efficacy of broadly neutralizing anti-influenza hemagglutinin stem antibodies. **I. Kosik, D. Angeletti, J.S. Gibbs, M. Angel, K. Takeda, M. Kosikova, V. Nair, H.D. Hickman, H. Xie, C.C. Brooke and J.W. Yewdell**. NIAID, NIH, CBER, FDA and Univ. of Illinois, Urbana-Champaign. **(139.20)**

Don't forget to visit the Poster Sessions.
Authors will be present from 2:30 PM – 3:45 PM
Friday – Sunday to share their findings.

47. AAI-BD BIOSCIENCES INVESTIGATOR AWARD PRESENTATION AND LECTURE

The AAI-BD Biosciences Investigator Award recognizes an early-career investigator who has made outstanding contributions to the field of immunology.

Awards Lecture

Generously supported by BD Biosciences

FRI. 4:30 PM—BALLROOM 20BCD

CHAIR: *J.L. FLYNN*

Recipient: **F.J. Quintana**. Brigham and Women's Hosp., Harvard Med. Sch.

4:30 Introduction and Award Presentation. **J.L. Flynn**. Univ. of Pittsburgh Sch. of Med., AAI President; and **R. Balderas.** BD Biosci.

4:35 Environmental control of CNS inflammation. **F.J. Quintana**. Brigham and Women's Hosp., Harvard Med. Sch.

48. DISTINGUISHED LECTURE ANDREA J. TENNER

Distinguished Lecture

FRI. 6:00 PM—BALLROOM 20BCD

CHAIR: *D. MASOPUST*

6:00 Complement: primitive yet powerful—new discoveries in immunity and the nervous system. **A.J. Tenner**. Univ. of California, Irvine.

49. CAREERS IN BIOTECH: PANEL DISCUSSION AND NETWORKING

Career Development Session

Sponsored by the AAI Education Committee

Generously supported by the Allen Institute for Immunology

FRI. 7:00 PM—ROOM 32AB

CHAIR: *K.A. CASEY*

Many opportunities exist in biotechnology for scientists with advanced degrees. There are positions in laboratory research, program management, business development, regulatory affairs, clinical trials oversight, medical liaison, and more. This panel features scientists employed in a variety of positions discussing their career paths and the skills required for success in each. Following the panel discussion, enjoy casual conversation with the speakers and other scientists from biotech at a networking reception.

PANELISTS:

- **C.L. Butts**. Biogen.
- **S. Crampton**. aTyr Pharma, Inc.
- **L. Salter-Cid**. Gossamer Bio.
- **K. Sauer**. Torque Therapeutics.

FRIDAY POSTER SESSIONS

Posters on Display: 9:30 am – 4:30 pm
Author Presentation Time: 2:30 pm – 3:45 pm

50. BASIC AUTOIMMUNITY: GENETIC AND NON-GENETIC TRIGGERS

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P340 **50.1** Crispr/Cas9 gene editing targeted to an intron of a novel isoform of the β-subunit of thyroid stimulating hormone in peripheral leukocytes. **J.R. Klein and H.N. Pawar**. Univ. of Texas Hlth. Sci. Ctr., Houston.

P341 **50.2** X-chromosome inactivation maintenance is perturbed in T cells from lupus mouse models and human lupus patients. **M. Anguera**. Univ. of Pennsylvania.

P342 **50.3** p38 MAP kinase signaling in microglia plays a sex-specific protective role in CNS autoimmunity. **D.N. Krementsov and M. McGill**. Univ. of Vermont.

P343 **50.4** In vivo depletion of microRNA-183-96-182 cluster alleviates autoimmunity in B6-*lpr* lupus mice. **Z. Wang, B. Heid, R. Lu, D. Khan, S.A. Ahmed and R. Dai**. Virginia-Maryland Col. of Vet. Med.

P344 **50.5** Pro-autoimmune genetic risk variant, PTPN22 1858C>T accelerates formation of tertiary lymphoid structures in a mouse model of type 1 diabetes. **S.E. Schmiel, K. Marquardt and L.A. Sherman**. Scripps Res. Inst.

P345 **50.6** A hypomorphic Ephb2 gene variant contributes to autoimmune diabetes in NOD mice associated with altered Mapk3 activities in B-lymphocytes. **Q. Wang, H.D. Chapman, J.J. Racine and D. Serreze**. Jackson Lab.

P346 **50.7** Developmental exposure to environmental toxicant trichloroethylene alters DNA methylation in polycomb protein binding regions in effector/memory CD4 + T cells from autoimmune-prone mice. **S.J. Blossom, S. Byrum, C.L. Washam, J.D. Patterson, K.K. Vyas and K.M. Gilbert**. Univ. of Arkansas for Med. Sci.

P347 **50.8** Distinctions in gene-expression in PBMC from male and female SLE patients. **M. Olferiev, D. Fernandez, D. Greenman, M. Peng, K. Kirou and M.K. Crow**. Hosp. for Special Surgery.

P348 **50.9** Unmasking a killer: discovery of a gene that controls the pathogenic activation of CD8 T cells in type 1 diabetes. **C. Ye, D.V. Serreze, Y-G. Chen and J.P. Driver**. Univ. of Florida, Jackson Lab. and Med. Col. of Wisconsin.

P350 **50.10** Epigenetic programming underpins B cell dysfunction in human SLE. **C. Scharer, E. Blalock, T. Mi, B. Barwick, S. Jenks, B. Neary, D. Patterson, T. Deguchi, E-H. Lee, C. Wei, I. Sanz and J.M. Boss**. Emory Univ. Sch. of Med.

P351 **50.11** Evaluating the role of candidate gene, *csf3r*, for sex-linked susceptibility to lupus-like disease in mice. **M.R. Gubbels Bupp and A.E. Woodfin**. Randolph Macon Col.

P352 **50.12** Molecular and cellular biomarkers that discriminate juvenile idiopathic arthritis from septic arthritis. **N. Nziza, M. Cren, A. Carbasse, P. Mahe, M. Delpont, D. Louahem, J. Pene, H. Chevassus, M. Khalil, T. Mura, C. Jorgensen, P. Louis-Plence, E. Jeziorski, I. Duroux-Richard and F. Apparailly**. INSERM U1183, Univ. Hosp. of Montpellier and La Colombière Hosp., France.

P353 **50.13** Environmental exposure to 17α-ethinyl estradiol augments kidney disease and TLR7/9 signaling in female autoimmune-prone MRL/lpr mice. **M.R. Edwards, R. Dai, T.E. Cecere, B. Heid and S.A. Ahmed**. Virginia Polytechnic Inst. and State Univ.

P354 **50.14** Effect on mental health of narcotics among individuals with autoimmune conditions. **N. Nedley and F.E. Ramirez**. Weimar Inst. and Nedley Clin.

P355 **50.15** Educational program impacts suicidal thoughts of individuals with autoimmune conditions. **F.E. Ramirez, N. Nedley and T. Queva**. Nedley Clin. and Weimar Inst.

P349 **50.16** Role of acetylcholine receptors in cholinergic pathway-mediated protection against autoimmune diabetes. **B.K. Al-Ramadi, J.A. George, G. Bashir, M.M. Qureshi, Y.A. Mohamed, N. Elsayed and M.J. Fernandez-Cabezudo**. United Arab Emirates Univ., Col. of Med. and Hlth. Sci., United Arab Emirates.

P356 **50.17** miR-140-5p regulates encephalitogenic T cell differentiation through DNA methylation and mitochondrial metabolism. **H. Guan, S. Zhu, X. Zhang, F. Huang, L. Wu, D. Hou, Z. Zheng, M. Yu and L. Ge**. Stomatology Hosp. of Guangzhou Med. Univ., China.

P357 **50.18** Transcription factor T-bet is required for pathogenicity of GM-CSF-only Th cells in experimental autoimmune encephalomyelitis. **J. Rasouli, B. Ciric, G. Casella, S. Yoshimura, G-X. Zhang and A. Rostami**. Thomas Jefferson Univ.

51. FROM THERE TO HERE, FROM HERE TO THERE: INFLAMED THINGS ARE EVERYWHERE

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P358 **51.1** PDLIM4: target of JMJD3 regulates CD4 T cell trafficking by connecting S1P1 and cytoskeleton. **C. Fu**. Texas A&M Univ. Health Sci. Ctr.

P359 **51.2** WITHDRAWN

P362 **51.3** TSPAN33 regulates endocytosis and migration of human B lymphocytes by regulating the plasma membrane tension. **I.C. Navarro-Hernandez, E. Acevedo-Ochoa, O. López-Ortega, R. Fragoso-Soriano, A. Galván-Hernández, A. Antillón, I. Ortega-Blake, J.M. Hernández-Hernández and J.L. Maravillas-Montero**. CINVESTAV-IPN, Mexico and Natl. Autonomous Univ. of Mexico, Mexico.

P363 **51.4** Type1 IFN signaling on Tregs modulates the migration of myeloid derived suppressor cells. **S. Tanwar, A. Metidji and E.M. Shevach**. NIAID, NIH.

P364 **51.5** Limited recirculation of cytotoxic NK cells during normal homeostasis in humans. **L. Hertwig, M. Buggert, J.J. Knox, S. Nguyen, E. Sparrelid, M.A. Ivarsson, H. Wedemeyer, Y. Dori, M.G. Itkin, M.R. Betts and N.K. Björkström**. Karolinska Inst., Karolinska Univ. Hosp., Sweden, Perelman Sch. of Med., Univ. of Pennsylvania, Essen Univ. Hospital, Essen, Germany and Children's Hosp. of Philadelphia, Penn Med., Hosp. of the Univ. of Pennsylvania.

P365 **51.6** Epithelial cell-derived chemokines induce DC recruitment to the gastric epithelium upon *H. pylori* infection. **M. Hashimi, T.A. Seberll, B. Sidar, J.N. Wilking and D. Bimczok**. Montana State Univ.

P367 **51.7** Exit of human cutaneous resident memory CD4 T cells that enter the circulation and seed distant skin sites. **P.A. Morawski, M. Klicznik, B. Hoellbacher, S. Varkhande, S. Motley, T. Duhen, I. Gratz and D.J. Campbell**. Benaroya Res. Inst. and Univ. of Salzburg, Austria.

P368 **51.8** Dendritic cell-induced dissemination of Mycobacterium tuberculosis into the central nervous system. **T.E. Gilpin, F.R. Walter, M. Herbath, M. Sandor and Z. Fabry**. Univ. of Wisconsin, Madison.

P369 **51.9** Selective recruitment of lethal pro-inflammatory macrophages in sepsis by MIF but not D-DT (MIF-2). **P.V. Tilstam, W. Schulte, T. Holowka, B-S. Kim, M. Piecychna, G. Pantouris, E. Lolis, L. Leng, J. Bernhagen and R. Bucala**. Yale Univ. Sch. of Med., Universitätsmedizin Berlin, Germany, Uniklinik RWTH Aachen, Germany and Ludwig-Maximilians-Univ. Munich, Germany.

P370 **51.10** Germinal center organization mediated by T-bet-dependent expression of CXCR3 and CCR6. **J.N. Peel, S.L. Stone, C.D. Scharer, J. Boss and F.E. Lund**. Univ. of Alabama, Birmingham and Emory Univ.

P371 **51.11** Intranodal dendritic cell relocalization during inflammation impacts T cell immunity. **J.M. Leal, B. Olin and M.Y. Gerner**. Univ. of Washington Sch. of Med.

P372 **51.12** Modulation of ILC2 trafficking and effector functions in ILC2-driven airway hyperreactivity. **B.P. Hurrell, L. Galle-Treger, E. Howard, P. Shafiei Jahani, S. Santosh, P. Soroosh and O. Akbari**. Univ. of Southern California Keck Sch. of Med. and Janssen Pharmaceutical Companies of Johnson & Johnson.

P373 **51.13** Monocyte activation in cardiovascular disease through inflammatory signaling associated with CD11c function. **A.A. Hernandez, G.A. Foster, Y. Dai, K.R. Rivara, K. Bailey, G.D. Singh and S.I. Simon**. Univ. of California, Davis.

P376 **51.14** Epithelial membrane protein 2 regulates transepithelial migration of neutrophils into the inflamed airspace. **W-C. Lin, K. Gowdy, J. Madenspacher, R. Zemans, K. Yamamoto, M. Lyons-Cohen, H. Nakano, K. Janardhan, C. Williams, D. Cook, J. Mizgerd and M. Fessler**. NIEHS, NIH, East Carolina Univ., Univ. of Michigan and Boston Univ. Sch. of Med.

P360 **51.15** CNS HIV virus persistence irrespective of CD4 T cell trafficking. **A. Kohlmeier, J. Lipscomb, J-F. Li, A. Santos Tino, A.M. Anderson and J.A. Johnson**. CDC and Emory Univ. Sch. of Med.

P361 **51.16** Blimp-1 transcriptionally induced by growth factors, TNF-α and TLR ligands inhibits keratinocyte migration and inflammation but enhances cell migration in squamous cell carcinoma. **W-W. Lin and D-Y. Huang**. Natl. Taiwan Univ., Taiwan.

P366 **51.17** Role of CXCR3 in natural killer cell migration to melanoma cells. **E.J. Park, Y.J. Kang, H.K. Lee, H.S. Kim, J.T. Hong, Y. Kim and S-B. Han**. Chungbuk Natl. Univ., South Korea.

P374 **51.18** CXCL9/10 producing cell clusters optimize Th1 cell positioning for interaction with antigen presenting cells. **S.G. Negatu, H. Prizant and D.J. Fowell**. Univ. of Rochester Sch. of Med. and Dent.

P375 **51.19** Follicular dendritic cell migration is promoted by the expression of matrix metalloproteinase 3 through TNF - ERK1/2-AP-1 signaling. **K. Yong-Woo, H-K. Pak and C-S. Park**. Asan Med. Ctr., Univ. of Ulsan Col. of Med., Korea.

P377 **51.20** Multi-parametric cell-based inflammation assays for cytokines and cell surface antigens. **E. Cromwell, B. Cho, O. Hoxha, N. Bristol, C. Olsen and O. Sirenko**. Protein Fluidics and Molec. Devices, LLC.

P378 **51.21** PIEZO1 forms an adhesive-mechanosensitive complex with activated LFA-1 on T lymphocytes. **A.V. Aguilar, B. Benson, J. Rathkey, L. Correa, L. Li, J. Myers, J. Tomalka, H. Kennelley, D. Abbott, R. Ransohoff and A. Huang**. Case Western Reserve Univ. and Biogen.

52. CYTOKINES REGULATING INFLAMMATION

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P406 **52.1** Mass-cytometry reveals global immune remodeling with multi-lineage hypersensitivity to type I interferon in Down syndrome. **K.A. Waugh, A. Pandey, K.R. Jordan, K.P. Smith, R.E. Granrath, S. Khanal, E.T. Butcher, A.L. Rachubinski, JA. McWilliams, P. Araya, R. Minter, T. Dimasi, K.L. Colvin, D. Baturin, A.T. Pham, M.D. Galbraith, M.E. Yeager, K.D. Sullivan, C.C. Porter, E.W. Hsieh and J.M. Espinosa**. Linda Crnic Inst. for Down Syndrome, Univ. of Colorado Anschutz Med. Campus and Emory Univ. Sch. of Med.

P404 **52.2** A circulating NAD biosynthetic enzyme is a novel modulator of inflammation. **A. Manago', V. Audrito, F. Mazzola, L. Sorci, F. Gaudino, K. Gizzi, D. Incarnato, G. Minazzato, A. Iannillo, A. Varriale, S. D'Auria, G. Mengozzi, G. Politano, S. Olivero, N. Raffaelli and S. Deaglio**. Univ. of Turin, Italy, Polytechnic Univ. of Marche, Italy, Italian Institute for Genomic Med., Italy, AOU Città della Salute e della Scienza, Italy, Institute of Food Science, CNR, Italy and Politecnico di Torino, Italy.

P379 **52.3** Function of protein kinase CK2 in innate immune cells in neuroinflammation. **H. Qin, W. Yang, Z. Yan and E. Benveniste**. Univ. of Alabama, Birmingham.

P405 **52.4** RGC-32 regulates expression of insulin-like growth factor binding proteins in astrocytes. **A. Tatomir, D. Boodhoo, V. Nguyen, C. Cudrici, T. Badea, V. Rus and H. Rus**. Univ. of Maryland Sch. of Med., NHLBI, NIH and NEI, NIH.

P402 **52.5** Bone morphogenic protein receptor 1α and its ligands as a signaling circuit modulating immune response. **P. Kraj, M. Kuczma, C. Simms, M. Pietrzak, L. Ignatowicz, P. Muranski and L. Browning**. Old Dominion Univ., Georgia State Univ., Ohio State Univ. and Columbia Univ. Med. Ctr.

P403 **52.6** Ovarian tumor domain-containing ubiquitin aldehyde binding protein 1 inhibits IL-6 production by regulating Nur77 stability. **S-H. Baek and H.Z. Pei**. Col. of Med., Yeungnam Univ., South Korea.

P419 **52.7** CXCL13 and other co-expressed genes influence in the lung adenocarcinoma (LUAD) TIME (tumor immune microenvironment). **C.D. Young, T.L. Griffen, K. Carey, C.D. Dill, S.K.K. Nunez and O. Adebayo**. Morehouse Sch. of Med.

P409 **52.8** Multivariate analysis of genes expressed in the colorectal tumor immune microenvironment driven by CXCL13. **S.K. Nunez, T.L. Griffen, C. Young, C.D. Dill, O. Adebayo, K. Carey and J.W. Lillard**. Morehouse Sch. of Med.

P415 **52.9** The association between the statistical significance of the AUC and measure of stochastic superiority when modeling cytokines: an example from colon cancer. **F. Qeadan, L. Stalter and E. Beswick**. Univ. of New Mexico and Univ. of Utah Sch. of Med.

P411 **52.10** Interleukin-37 promotes colitis-associated carcinogenesis via SIGIRR-mediated cytotoxic T cells exhaustion. **J. Li, X. Teng, X. Wei, Z. Wang, F.L. Zeng, H. Zhou and H. Zheng**. West China Hosp., Sichuan Univ., and Collaborative Innovation Ctr. for Biotherapy, China.

P412 **52.11** TNF targeting small molecule attenuates colonic inflammation in acute DSS-induced colitis mice. **O. Cho, Y-J. Jeong and T-H. Heo**. Catholic Univ. of Korea, South Korea.

P410 **52.12** Inhibition of ubiquitin-specific processing proteases 10 and 13 modulates IL-10 and TNF-α production in response to LPS in murine macrophages. **P.M. Shah, H. Talwar and L. Samavati**. Wayne State Univ. Sch. of Med.

P416 **52.13** Human *IL10* promoter haplotypes confer differential outcomes to experimental colitis in humanized BAC mice. **V. Vacharathit, J. Ma, D.C. Gunasekera, P. Shah, A. Sheh, C.F. Brayton, M.T. Whary, J.G. Fox and J.H. Bream**. Johns Hopkins Univ. Sch. of Med., Johns Hopkins Univ. Bloomberg Sch. of Publ. Hlth. and Massachusetts Inst. of Technol.

P401 **52.14** Human interleukin-2 receptor beta mutations associated with defects in immunity and peripheral tolerance. **Z. Zhang, F. Gothe, P. Pennamen, J. James, D. McDonald, C. Mata, Y. Modis, A. Alazami, M. Acres, W. Haller, C. Bowen, R. Doffinger, J. Sinclair, S. Brothers, Y. Zhang, H. Matthews, S. Naudion, F. Pelluard, H. Alajlan, Y. Yamazaki, L. Notarangelo, J. Thaventhiran, K. Engelhardt, H. Al-Mousa, S. Hambleton, C. Rooryck, K.G.C. Smith and M.J. Lenardo**. NIAID, NIH, Univ. of Newcastle, UK, Univ. of Cambridge, UK, King Faisal Specialist Hosp. and Res. Ctr., Saudi Arabia, Birmingham Children's Hosp., Starship Children's Hosp., Univ. of Bordeaux, France and CHU Bordeaux, France.

P413 **52.15** WITHDRAWN

P414 **52.16** A non-depleting PC61 antibody allows residual CD25 function that maintains regulatory T cell-mediated immune homeostasis. **E. Hayes, C. Hagan and D.J. Campbell**. Benaroya Res. Inst. and Univ. of Washington.

P400 **52.17** A critical role for IL-37 in regulatory T cell maintenance and CD4+ T cell inhibition. **D.G. Osborne, J. Domenico, C.A. Dinarello and M. Fujita**. Univ. of Colorado Sch. of Med.

P418 **52.18** Investigating epidermal T cell function by C-C chemokine receptor 6. **S. Bshara-Corson, I. Gonzalez, N. Miranda and J. Jameson**. California State Univ., San Marcos.

P407 **52.19** Detecting IL-1β release with a rapid, homogeneous, bioluminescent immunoassay. **M.A. O'Brien, A. Lindstedt, D. Lazar and J. Cali**. Promega Corp.

P417 **52.20** Peripheral blood CD115 (CSF-1R) expression is anticoagulant- and time-dependent. **N.V. Acuff, A.A. Divekar and X. Yang**. BioLegend, Inc.

P408 **52.21** Development of a high sensitivity 10-plex human cytokine assay using Simoa Planar Array technology. **J. Lambert, C. Zarozinski, J. Johnson, Y. Yan, D. Rissin, P. Stadler and A. Ball**. Quanterix.

P420 **52.22** Development of a high throughput, bead-based flow cytometry panel for T-helper cell cytokine quantitation. **J. O`Rourke, C. Weldon, L. Keenan and M.B. Carter**. Essen Biosciences.

P421 **52.23** EBI3 impacts *Leishmania braziliensis*-induced inflammation in localized cutaneous leishmaniasis. **A.K.M. de Santana, G. Gupta, C. Gomes, A. Turatti, R. Bueno Filho, V. Carregaro, A. Roselino, R. Almeida and J. Silva**. Univ. of São Paulo, Brazil, Univ. of Manitoba, Canada, Univ. of Brazil, Brazil and Federal Univ. of Sergipe, Brazil.

53. LYMPHOCYTE DEVELOPMENT

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P430 **53.1** Development of group-3 innate lymphoid cells via *Tox2*-dependent pathway in gut. **A. Das, Y. Wang, X. Lu, C. Harly, J. Kaye and A. Bhandoola**. NCI, NIH, China Natl. GeneBank, China, Univ. of Nantes, France and Cedars-Sinai Med. Ctr.

P431 **53.2** Does TNF-α regulate thymic T cell developmental block in mice with dysregulated expression of Ly-6A? **A.K. Bamezai, S. Moxham and A. Patel**. Villanova Univ.

P437 **53.3** TCR signal strength shapes functional imprinting during CD4 T cell development. **G. Verstichel, N. Thiault, K. Kakugawa, A. Chen, H. Iwaya, I. Takazawa and H. Cheroutre**. La Jolla Inst. for Immunology and RIKEN, Japan.

P438 **53.4** TCR-ligand interactions are required for murine epidermal Vγ3Vδ1 T cell development. **D. Witherden, O.D. Garijo, R. Kelly, H.K. Komori and W.L. Havran**. Scripps Res. Inst.

P439 **53.5** mTORC1 signaling mediates T cell lineage choices. **D.E. Bastardo Blanco, K. Yang and H. Chi**. St. Jude Children's Res. Hosp. and Indiana Univ. Sch. of Med.

P423 **53.6** Conditional deletion of the V-ATPase a2-subunit disrupts intrathymic T cell development. **T.V. Peterson and J.M. Reynolds**. Chicago Med. Sch., Rosalind Franklin Univ. of Med. and Sci.

P433 **53.7** TRAF3IP3 at the trans-Golgi network regulates NKT2 maturation via MEK/ERK signaling pathway. **Q. Ge and X. Zhang**. Peking Univ., China.

P435 **53.8** Atrophied thymus creates tTreg repertoire holes altering an antigen-specific population in the periphery. **R.R. Thomas, J. Oh, W. Wang and D. Su**. Univ. of North Texas Hlth. Sci. Ctr.

P441 **53.9** NOD2 regulates distinct pathways of endogenous thymic regeneration after injury. **S. Kinsella, K. Cooper, P. deRoos, L. Iovino, R. Jain and J.A. Dudakov**. Fred Hutchinson Cancer Res. Ctr.

P443 **53.10** WITHDRAWN

P445 **53.11** CD301b$^+$ SIRPα^+ dendritic cells play a non-redundant role in inducing clonal deletion in the thymus medulla. **E.R. Breed and K.A. Hogquist**. Univ. of Minnesota.

P422 **53.12** Cell-targeted steroid signaling in the thymus determines T cell repertoire strength. **M.D. Taves, P. Mittelstadt, D. Presman, G. Hager and J.D. Ashwell**. NCI, NIH and Univ. de Buenos Aires, Argentina.

P426 **53.13** Distinct CD28 signaling requirements determine the alternative fates of thymic agonist selection. **M. Watanabe, F. Alkhaleel and R.J. Hodes**. NCI, NIH.

P429 **53.14** Modulation of Id3 induces a fetal-specific HEB-dependent gamma delta T cell developmental pathway in the adult mouse thymus. **J.S. Selvaratnam and M.K. Anderson**. Sunnybrook Res. Inst., Canada and Univ. of Toronto, Canada.

P434 **53.15** Perturbation of developmental hematopoiesis shapes lung ILC2 immune memory. **D.A. Lopez and A.E. Beaudin**. Sch. of Natural Sci., UC Merced.

P444 **53.16** Regulation of thymic type I IFN expression and its role in T cell development. **O.C. Salgado Barrero, S.T. Lee, E.R. Breed and K.A. Hogquist**. Ctr. for Immunology, Univ. of Minnesota.

P428 **53.17** CD2-iCre mice reveal a role for ABCB7 in B cell development and bone marrow homeostasis. **M.J. Lehrke, S. McCue, M. Rajcula, M. Shapiro and V.S. Shapiro**. Mayo Clin. Grad. Sch. of Biomed. Sciences.

P436 **53.18** In vitro modeling of human B cell development can identify distinct physiopathological patterns in primary antibody deficiency. **A. Troilo, C. Wehr, I. Janowska, J. Rawluk, J. Thiel, N. Venhoff, G. Herget, B.G. Ochs, L. Konstantinidis, K. Warnatz, U. Salzer and M. Rizzi**. Univ. Med. Ctr. Freiburg, Germany.

P425 **53.19** m^{6}A RNA modification controls transitions between quiescence and proliferation during B-cell development. **Z. Zheng, P.J. Hsu, X-L. Cui, H. Tan, L. Zhang, H. Sun, M. Zhang, J. Peng, C. He and H. Huang**. Univ. of Chicago and St. Jude Children's Res. Hosp.

P427 **53.20** Hoxa9 silencing of *p16^{ink4a}* is essential for murine lymphopoiesis. **K.L. Medina and K.A. Gwin**. Mayo Clin.

P440 **53.21** A critical role for the Slam/SAP signaling pathway in the developmental programming of $\gamma\delta$ T cell function. **J.E. Boyson, V.L. DeVault, S.K. Mistri, L. Mei, S.C. Musial, C. Spear, J.A. Dragon, A. Veillette and O. Dienz**. Univ. of Vermont and McGill Univ., Canada.

P442 **53.22** MicroRNA-142 is an essential negative regulator of B cell maturation and malignant transformation. **N.M. Graham, W-L. Wang, N. Magilnick, J. Lee, H. Wang, B. Zhang, G. Marcucci, M. Muschen, E. Reyes and M.P. Boldin**. City of Hope Beckman Res. Inst., Syst.s Biol., Beckman Res. Inst., City of Hope and Gehr Family Ctr. for Leukemia Res., Hematology Malignancies and Stem Cell Transplantation Inst.

P424 **53.23** A MYC-inducible tumor-suppressor program protects developing B cells from transformation. **E. Tonc, C. Chou, C. Fujii, S. Hsiung and T. Egawa**. Washington Univ. Sch. of Med.

P432 **53.24** Modulation of RAG2 interactions with histone H3K4me3 through residue Thr^{490}. **W.A. Rodgers, J. Byrum, D. Simpson, W. Hoolehan and K. Rodgers**. Univ. of Oklahoma Hlth. Sci. Ctr.

P446 **53.25** Advancing threespine stickleback as an outbred immunogenetics model by pinpointing the onset of adaptive immunity. **E.R. Niebergall, E.A. Beck, S. Bassham and W.A. Cresko**. Univ. of Oregon.

54. MAST CELLS: PHENOTYPE TO FUNCTION

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P447 **54.1** Comprehensive characterization of the mast cell surface proteome. **N.J. Shubin, K. Niino, V. Kasprzak, R. James and A.M. Piliponsky**. Seattle Children's Res. Inst.

P448 **54.2** Early life adversity programs mast cells toward a hyperactive phenotype into adulthood. **N.C. Maradiaga, C. Pohl, E. Mackey and A.J. Moeser**. Michigan State Univ.

P449 **54.3** Transient suppression and functional modulation of mucosal mast cells for the treatment of allergic disease. **Y. Kurashima, Y. Takasato, M. Kiuchi, K. Hirahara, S. Murasaki, J. Kunisawa, M. Kubo, T. Nakayama and H. Kiyono**. Chiba Univ., Japan, Keio Univ. Sch. of Med., Japan, Univ. of Tokyo, Japan, Natl. Inst. of Biomed. Innovation, Hlth. and Nutrition, Japan and RIKEN, Japan.

P451 **54.4** Allergen-induced disulfide-linked dimers/oligomers of histamine-releasing factor enhance mast cell activation. **Y. Kawakami, K. Kasakura, T. Ando, Y. Kawakami and T. Kawakami**. La Jolla Inst. for Immunology and Atopy (Allergy) Res. Ctr., Juntendo Univ. Grad. Sch. of Med., Japan.

P452 **54.5** Neurokinin A renders mast cells responsive to autocrine IL-10. **T.L. Sumpter, Y. Li, M. Rao, D. Gohel, L.D. Falo and A.T. Larregina**. Univ. of Pittsburgh Sch. of Med.

P450 **54.6** IL-33 with anti-FceRI Ab induces functional CD25 on human skin mast cells. **Y. Fukuoka, B.R. Ward and L.B. Schwartz**. Virginia Commonwealth Univ.

P453 **54.7** miR-155 has positive and negative roles on cytokine production in mast cells. **Z.A. Mohammed and G. Gomez**. Univ. of South Carolina Sch. of Med.

P454 **54.8** Ceramide-CD300f interaction inhibits Mrgprb2-mediated mast cell activation and pseudo-allergic drug reactions in mice. **A. Takamori, T. Ando, A. Kaitani, A. Maehara, K. Izawa, K. Okumura and J. Kitaura**. Juntendo Univ. Graduate Sch. of Med., Japan.

P455 **54.9** A review of the evidence for the existence of and relationship between hypermobile Ehlers-Danlos syndrome, postural orthostatic tachycardia syndrome, and mast cell activation syndrome. **A. Kohn and C. Chang**. Florida Atlantic Univ. Col. of Med. and Joe DiMaggio Children's Hosp.

P456 **54.10** Histamine-mediated autocrine signaling in mesenteric perilymphatic mast cells and its role in the regulation of lymphatic immuno-physiology. **S. Pal, O.Y. Gasheva, D. Zawieja, C.J. Meininger and A.A. Gashev**. Texas A&M Univ.

P457 **54.11** Selective serotonin reuptake inhibitors suppress mast cell function. **T. Haque and J. Ryan**. Virginia Commonwealth Univ.

P458 **54.12** The HMGCR inhibitor fluvastatin induces apoptosis and autophagy in primary and neoplastic mast cells. **B.O. Barnstein, P.A. Paez, J.M. Dailey, R.M. Finnegan and J.J. Ryan**. Virginia Commonwealth Univ.

P459 **54.13** STAT5b dimers and tetramers are critical for mast cell function. **K.N. Kiwanuka, J. Lin, W.J. Leonard and J.J. Ryan**. Virginia Commonwealth Univ. and NHLBI, NIH, MD.

P460 **54.14** Comparing mast cell immunometabolism shifts induced by IgE mediated and non-IgE mediated degranulation. **R.P. Mendoza, C.C. Anderson, J.R. Roede and J.M. Brown**. Univ. of Colorado Anschutz Med. Campus.

P461 **54.15** Perinatal androgens drive sex differences in mast cell phenotype and severity of mast cell disease. **E. Mackey and A.J. Moeser**. Michigan State Univ.

P462 **54.16** Skin microbiome regulates SCF level in Keratinocytes and defines mast cell maturation. **C-C. Wu, Z. Wang and A. Di Nardo**. Univ. of California, San Diego.

55. MECHANISMS OF ATOPIC DISEASE

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P465 **55.1** Analysis of allergen-specific T cell and IgE reactivity in milk and egg allergic children in response to progressive forms of baked milk and egg food extracts. **V.M.J. Schulten, M. Chen, S. Laubach, S. Leonard and B. Peters**. La Jolla Institute, Univ. of California, San Diego, Univ. of California, San Diego, Rady Children's Hosp. San Diego and La Jolla Inst. for Immunology.

P468 **55.2** Oral tolerance to peanut allergy is mediated by CTLA-4-positive regulatory T cells. **J.W. Krempski, K. Iijima, T. Kobayshi and H. Kita**. Mayo Grad. Sch. and Mayo Clin.

P701 **55.3** Identification of a novel mechanism of Th2 polarization in mouse CD4+ T cells through nuclear factor erythroid 2-like 2 (Nrf2) regulation. **R.C. Kennedy, S. Liu, A.E. Turley, R.A. Freeborn and C.E. Rockwell**. Michigan State Univ.

P479 **55.4** Gut oxidative responses by chronic exposure to pollutants enhance IgE production via PGE_2-dependent mechanism. **E. Kim, A. Bonnegarde-Bernard, S.O. Opiyo, B.M. Ahmer, E. Comet-Boyaka and P.N. Boyaka**. The Ohio State Univ.

P467 **55.5** Characterization of protein allergens in a mouse model of wheat-induced anaphylaxis. **V. Gangur, R. Jorgensen, H. Gao, Y. Jin, J. Salloum, D. Jian and P.K.W. Ng**. Michigan State Univ.

P466 **55.6** Immune-markers for assessment of wheat allergenicity in mice: comparison of adjuvant-free vs. alum-adjuvant based models. **V. Gangur, Y. Jin, H. Gao, R. Jorgensen and P.K.W. Ng**. Michigan State Univ.

P471 **55.7** An epigenetic link between the gut microbiome and immune responses in atopy. **A. Cait, M.R. Hughes, M. Bilenky, J. Cait, D. Pepin, M. Hirst, W.W. Mohn and K. McNagny**. Univ. of British Columbia, Canada.

P469 **55.8** The bone marrow-derived Gr-1$^+$CXCR2$^+$ cells are required for T cell infiltration into the skin challenge site to elicit contact hypersensitivity responses are inflammatory monocytes expressing FasL and perforin. **D. Kish and R.L. Fairchild**. Cleveland Clin.

P470 **55.9** Effector CD8 T cell infiltration into the skin to mediate contact hypersensitivity responses requires TLR4 signaling on precursors of Gr-1$^+$CXCR2$^+$ bone marrow cells. **D. Kish and R.L. Fairchild**. Cleveland Clin.

P472 **55.10** Silencing of PD-L2/B7-DC by topical application of small interfering RNA Inhibits elicitation of contact hypersensitivity. **E. Furusawa, T. Ohno, S. Nagai, T. Noda, T. Komiyama, K. Kobayashi, H. Hamamoto, M. Miyashin, H. Yokozeki and M. Azuma**. Tokyo Med. and Dent. Univ., Japan and MEDRx, Japan.

P473 **55.11** The transcription factor EPAS1 links DOCK8-deficiency to atopic skin inflammation via IL-31 induction. **K. Kunimura and Y. Fukui**. Kyushu Univ., Japan.

P475 **55.12** A proposed role for interleukin-6 in the modulation of Th2 asthmatic responses. **E.M. McLaughlin and B. Leon-Ruiz**. Univ. of Alabama, Birmingham.

P477 **55.13** Pre-treatment with lipopolysaccharide protects against a normally lethal respiratory viral infection. **J. Resiliac, M. Rohlfing, J. Santoro, S-R.A. Hussain and M.H. Grayson**. The Ohio State Univ. and The Res. Inst. at Nationwide Children's Hosp.

P464 **55.14** Probiotic Lactobacillus GG attenuates pulmonary inflammation through interfering the crosstalk between intestinal microbiota and ILC2 in asthmatic mice. **G. Peng, Z. Liu, Y. Wang, D. Ge and Y. Hao**. Beijing Univ. of Chinese Med., China.

P476 **55.15** C-X3-C chemokine receptor 1 regulates immunopathogenesis during fungal asthma. **M.S. Godwin, M.J. Jones, Z. Yu, S. Matalon and C. Steele**. Univ. of Alabama at Birmingham Sch. of Med. and Tulane Univ. Sch. of Med.

P463 **55.16** Dimethyl fumarate attenuates T helper type 2-mediated allergic airway inflammation by modulating dendritic cell function. **A.K. Jaiswal, M. Sandey, A. Suryawanshi, R.C. Cattley and A. Mishra**. Auburn Univ.

P474 **55.17** Suppression of allergic airway inflammation by MCPIP1 through suppression of IL-5-producing Th2 cells. **J. Liu, Q. Wang, H. Ning and R. Hou**. Saint Louis Univ.

P478 **55.18** Profile of dendritic cells surface biomarkers in nasal and oral mucosa of human subjects reactive to grass pollen and house dust mites. **F.E. Rivera-Mariani, H. Srour, R. Fomenko, S. Bellinger, A. Stateman and J. Baguley**. Larkin Univ. Col. of Biomed. Sci. and Larkin Univ. Resp. and Immunology Project Lab.

P700 **55.19** α-MSH induces CD4+CD25+FOXP3+ cells and suppress activation of PBMCs from pediatric patients with allergic conjunctivitis. **J.E. Nieto, M. Jiménez Martínez, S. Fest, I. Casanova, J. Ayala, L.A. Salazar and H. Velázquez**. Universidad Nacional Autónoma de México, Mexico and Instituto de Oftalmología, Mexico.

P702 **55.20** The role of tyrosine kinase Itk in T helper 17 and T regulatory cells in IL17 mediated hypersensitivity pneumonitis. **J. Elmore, C. Carter, W. Huang, N. Koylas, A. Bennett and A. August**. Col. of Vet. Med., Cornell Univ.

P703 **55.21** Augmented co-stimulatory repertoire of $\gamma\delta$-T cell pool in pediatric peanut allergic patients. **L.B. Watkin, O. Hassan, C.M. Davis and S. Anvari**. Baylor Col. of Med.

56. T CELL REGULATION AND FUNCTION

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P704 **56.1** Regulation of CD8$^+$T-lymphocytes by eEF-2K. **J.K. Das and J. Song**. Texas A&M Hlth. Sci. Ctr.

P705 **56.2** Metabolic shift induced by systemic activation of T cells in PD-1-deficient mice perturbs brain monoamines and emotional behavior. **M. Miyajima, B. Zhang, M. Guerrini, Y. Sugiura and S. Fagarasan**. RIKEN, Japan, Keio Univ. Sch. of Med., Japan and Ctr. for Integrative Med. Sci., RIKEN.

P706 **56.3** Selective inhibition of gelatinases modulates cellular energetics in CD4+ T-cells. **L.C. Onwuha-Ekpete, D. Tokmina-Roszyk and G.B. Fields**. Florida Atlantic Univ.

P707 **56.4** TSC1-mTOR-controlled metabolic-epigenetic crosstalk underlies DC control of CD8$^+$ T cell homeostasis. **H. Xiao, L. Shi, X. Chen, A. Zang, T. Li and J. Yang**. Inst. Pasteur of Shanghai, China and Lanzhou Univ., China.

P708 **56.5** T-cell microvilli constitute immunological synaptosomes that are specialized for intercellular communications. **C-D. Jun and H-R. Kim**. Gwangju Inst. of Sci. and Technol., South Korea.

P709 **56.6** Sec23b-dependent COPII vesicles regulate T cell immunity. **S.H. Kim, R. Khoriaty, R. Valanparambil, S-R.J. Wu, A. Taylor, H. Fujiwara, D. Peltier, I. Henig, Y. Sun, C. Zajac, K. Oravecz-Wilson, M. McClune, S. Brabbs, R. Ahmed, D. Ginsburg and P. Reddy**. Univ. of Michigan Med. Sch. and Emory Univ.

P710 **56.7** Commensal polysaccharide-induced T-cell communication and peripheral immune regulation. **J.Y. Zhou, M.B. Jones, C.A. Alvarez, J.L. Johnson and B.A. Cobb**. Case Western Reserve Univ. Sch. of Med.

P711 **56.8** CTL-derived exosomes enhance the activation of CTLs stimulated by low-affinity peptides. **Z. Xiao, S-W. Wu, L. Li and Y. Wang**. Univ. of Maryland, College Park.

P712 **56.9** Antigen presentation by CD301b+ dermal dendritic cells dictates CD4+ T cell fate. **N. Tatsumi, A. Iwasaki and Y. Kumamoto**. Rutgers New Jersey Med. Sch. and HHMI.

P713 **56.10** You are what you eat: CD46 regulated amino acid usage dictates T cell function. **E.E. West, S. Freeley, M.M. Kaminski, S. Veenbergen, D-Y. Lee, L. St. John-Williams, J.W. Thompson, D.R. Green, S. Scholl-Buergi, D. Karall, M. Huemer and C. Kemper**. NHLBI, NIH, Kings Col. London, United Kingdom, St. Jude Children's Res. Hosp., Erasmus Univ. Med. Ctr., The Netherlands, Duke Univ., Med. Univ. of Innsbruck, Austria and Univ. Children's Hosp., Zurich, Switzerland.

P714 **56.11** PAR1 signaling is involved in TCR-mediated CD8 T cell granule exocytosis. **M.M. Smith, H. Chen, R.B. Hasley, T. Karpova and M. Catalfamo**. NIAID, NIH, NCI, NIH and Georgetown Univ. Sch. of Med.

P715 **56.12** Immune modulation caused by synthetic opioids during CD4+ T cell activation. **B.J. Llorens and A.D. Levine**. Case Western Reserve Univ.

P716 **56.13** The costimulatory molecule ICOS promotes establishment of resident memory CD8$^+$ T cells. **C. Peng, H. Borges da Silva, H. Wang and S. Jameson**. Univ. of Minnesota.

P717 **56.14** Secondary stimulation of CD4 T cells generates an exhaustion phenotype. **G.S. Wolf and N.J. Singh**. Univ. of Maryland, Baltimore.

P718 **56.15** Runx1 is a key regulator of T cell anergy. **D.N. Wilfahrt, F-C. Hsu, S. McCue, M. Rajcula and V. Smith Shapiro**. Mayo Clin.

P719 **56.16** Differential modulation of T cell activation. **P. Swain, Y. Kam, N. Romero and B.P. Dranka**. Agilent Technologies.

P720 **56.17** PD-1 regulates response to bystander activation of memory CD8 T cells. **C. Le, C. Dunai, L.T. Khuat and W.J. Murphy**. Univ. of California, Davis.

P721 **56.18** Lung-migratory dendritic cells traffic into the spleen after influenza virus infection. **M.M. Jenkins, H. Bachus, B. Leon-Ruiz and A. Ballesteros-Tato**. Univ. of Alabama at Birmingham, Sch. of Med.

P723 **56.19** Lymph node conduits transport virions for rapid T cell activation. **G.V. Reynoso, A.S. Weisberg, J.P. Shannon, D.T. McManus, L. Shores, J.L. Americo, R.V. Stan, J.W. Yewdell and H.D. Hickman**. NIAID, NIH and Dartmouth Geisel Sch. of Med.

P722 **56.20** Rapid activation of brain resident memory T cells following neurological insults. **K. Ayasoufi, S. Namen, E. Goddery, Z. Tritz, C.E. Fain, L. Yokanovich, F. Jin and A.J. Johnson**. Mayo Clin., Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin., Rochester, Minnesota.

P724 **56.21** CD160 serves as a negative regulator of NKT cells in acute hepatic injury. **K-M. Lee, G. Park, T-J. Kim, J. Kim, S-A. Lim and Y-X. Fu**. Korea Univ. Col. of Med. and Univ. of Texas Southwestern Med. Ctr.

P725 **56.22** Anti-viral CD8+ T cell responses are impaired by endogenous n-3 polyunsaturated fatty acids. **Y-J. Seo, S. Kim, Y-B. Cho, K-W. Kang and S-M. Lee**. Chang Gung Univ., Taiwan and Chonbuk Natl. Univ., South Korea.

57. TREGS AND TH17

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P726 **57.1** Hematopoietic stem progenitor cells prevent chronic stress-induced Tregs expansion in an IL12-dependent manner. **D. Yin, Y. Caudle and H. Zhang**. East Tennessee State Univ.

P727 **57.2** Phenotypic and functional characterisation of expanded antigen-specific regulatory T cells towards clinical translation. **J. Bianchi, R.I. Azevedo, A.I.S. Vieira, D. Ligeiro, C.L. da Silva and J.F. de Lacerda**. IMM, FMUL, CF, Lisbon, Spain, CSTL, IPST-IP, Spain and IST-iBB.

P728 **57.3** A protective role of IFN-γ in T cell-mediated colitis by regulation of Treg/Th17 via induction of indoleamine-2,3-deoxygenase. **S.G. Zheng, Z. Xu and J. Wang**. Penn State Col. of Med.

P729 **57.4** Human natural regulatory T cells recognize peptides of the heavy constant region of immunoglobulins presented by IgG+ B cells. **L-E. Hsieh, J. Sidney, N. Behnamfar, J.C. Burns, D. Boyle, G.S. Firestein, A. Sette and A. Franco**. Sch. of Med., Univ. of California, San Diego and La Jolla Inst. for Immunology.

P730 **57.5** CD71$^+$erythroid cells promote Tregs and via ectonucleotides CD39 and CD73 modulate T cell responses. **S. Elahi, S. Shahbaz and P. Koleva**. Univ. of Alberta, Canada.

P731 **57.6** Deubiquitinase CYLD controls the plasticity of T_{reg} cells by regulation of Scinderin expression. **J. Lee, Q. Wan, J. Han, S. el Baghdady, S. Geels, C. Elly and Y-C. Liu**. La Jolla Inst. for Immunology.

P732 **57.7** Helios deletion in CD4$^+$T cells induces pTregs that inhibit memory recall responses. **V. Penna, M. Skadow, E.M. Shevach and A.M. Thornton**. NIAID, NIH and Yale Univ.

P733 **57.8** Regulatory T cells limit unconventional memory to preserve the capacity to mount protective CD8 memory responses to pathogens. **J.B. Graham, A.S. Da Costa, J.L. Swarts and J.M. Lund**. Fred Hutchinson Cancer Res. Ctr. and Univ. of Washington.

P734 **57.9** An agonist TIGIT mab suppresses regulatory T cell activity via an IL-2-mediated mechanism. **B.H. Jones, C. Liu, M. Swiecki, B. Strake, E. Chi and P. Bansal-Pakala**. Janssen Pharmaceutical Co. of Johnson & Johnson.

P735 **57.10** Negative feedback control of autoimmunity by a novel population of regulatory unconventional CD8$^+$ T cells. **I. Marrero, H. Sheng, I. Maricic, S.S. Fanchiang, S. Zhang, D. Sant'Angelo and V. Kumar**. Univ. of California, San Diego and Rutgers Univ.

P736 **57.11** CD4+ T-helper 17 signature cytokine, IL-17, mediates CD4 resistance to immune suppression. **M.P. Crawford, S. Sinha, P.S. Renavikar and N.J. Karandikar**. Univ. of Iowa.

P737 **57.12** RNA-binding protein PCBP1 shapes tolerance and immune response by constraining the formation of regulatory T cells. **E.A. Ansa-Addo, H-C. Huang, S. Iamsawat, X-Z. Yu, P.H. Howe and Z. Li**. Med. Univ. of South Carolina and Hollings Cancer Ctr., Med. Univ. of South Carolina.

P738 **57.13** Human Tc17 cells harbor potent immune suppressive potential, whereas Tc1 cells lack suppressive ability. **P.S. Renavikar, M.P. Crawford, S. Sinha and N.J. Karandikar**. Univ. of Iowa Hlth. Care.

P739 **57.14** A wave of Foxp3$^+$ regulatory T cell accumulation in neonatal liver plays unique roles in maintaining self-tolerance. **Q. Ge and M. Li**. Peking Univ., China.

P740 **57.15** Short-chain fatty acids regulate regulatory T cells and intestinal pathology during oral mucosal infection. **N. Bhaskaran, E. Schneider and P. Pandiyan**. Case Western Reserve Univ., Sch. of Dental Med.

P741 **57.16** LAG-3+-induced regulatory T cells confer infectious tolerance with suppression of IFN-γ response decoupled from reserved proliferation. **C-T. Huang, A. Dutta, C-Y. Hung, T-C. Chen, C-Y. Lin, Y-C. Lin, C-S. Chang, T-A. Chen and Y-L. Huang**. Chang Gung Mem. Hosp., Taiwan.

P742 **57.17** Regulatory T cells perform antigen specific suppression by depleting cognate peptide-MHC class II via trogocytosis. **B. Akkaya, Y. Oya, M. Akkaya, J.A. Al Souz, A.H. Holstein, J. Kabat, O. Kamenyeva, D. Dorward, D. Glass and E.M. Shevach**. NIAID, NIH, LIG, NIAID, NIH, LISB, NIAID, NIH and RTB, NIAID, NIH.

P743 **57.18** WITHDRAWN

P744 **57.19** c-Maf-dependent Treg cell control of intestinal T_H17 cells and IgA establishes host-microbiota homeostasis. **S. Rutz, C. Neumann, J. Blume, A. Kalies and A. Scheffold**. Genentech, Inc., German Rheumatism Res. Ctr., Germany, The Walter and Eliza Hall Inst. of Med. Res. and Christian Albrechts Univ., Germany.

P745 **57.20** Recently alloactivated CD4$^+$CD8$^-$CD25$^+$T regulatory cells express CD8alpha and are potent suppressor cells. **B.M. Hall, N.D. Verma, C.M. Robinson, C. Wang, A. Sharland, G. Tran, P. Wilcox and S.J. Hodgkinson**. Univ. of New South Wales, Australia and Sydney Univ., Australia.

P746 **57.21** Evaluation of regulatory T cell mediated senescence of T effector cells. **J.J. Bauer, C. Langsdorf, Y-Z. Hu, S-J. Huang, Y. Wu, X. Wang, S. Clarke, T. Jackson and V. Calderon**. Thermo Fisher Scientific.

P747 **57.22** Construction of CAR-iTreg (chimeric antigen receptor-inducible Treg) for inducing tolerance in transplantation. **H-j. Won, Y-H. Kim and C-G. Park**. Seoul Natl. Univ. Col. of Med.

F R I

58. MYELOID CELLS

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P748 **58.1** HIF-1α is essential for T cell suppression by murine LP-BM5 retrovirus infection-augmented monocytic myeloid derived suppressor cells. **K.A. Green, R.A. Cramer and W.R. Green**. Dartmouth Geisel Sch. of Med.

P749 **58.2** Myeloid responders to programmed cell death. **M.N. Messmer, A.G. Snyder, M.Y. Gerner and A. Oberst**. Univ. of Washington.

P750 **58.3** Rapid Isolation of untouched mouse MDSCs. **F. Antignano, M. Messing, M.R. Hughes, K. McNagny, A.I. Kokaji, S.M. Woodside, A.C. Eaves and T.E. Thomas**. STEMCELL Technol., Canada and Univ. of British Columbia, Canada.

P751 **58.4** TRPV4 mediates the macrophage phagocytic and cytokine response to leptin. **R.G. Scheraga, A. Perelas, S. Abraham, L. Grove, B.D. Southern, J. Crish and M. Olman**. Cleveland Clin.

P752 **58.5** Creatine shapes macrophage polarization by reprogramming L-arginine metabolism. **L. Ji, X. Zhao, B. Zhang, L. Kang, W. Song, B. Zhao, W. Xie, L. Chen and X. Hu**. Inst. for Immunology and Sch. of Med., Tsinghua Univ., China, Sch. of Pharmaceutical Sci., Tsinghua Univ., China, Hosp. for Special Surgery Res. Div. and the David Z. Rosensweig Genomics Ctr., Tsinghua-Peking Ctr. for Life Sci., Sch. of Life Sci., Tsinghua Univ., China, School of Pharmaceutical Sci., Tsinghua Univ., China and Inst. for Immunology and School of Medicine, Tsinghua Univ., China.

P753 **58.6** Immune subsets in the murine pituitary gland and potential impacts on the HPG axis. **D. Nicholas and M.A. Lawson**. Univ. of California, San Diego.

P754 **58.7** Forkhead box O 6 modulates immunological functions of dendritic cells. **M.E. Kim, JH. Cho and J.S. Lee**. Chosun Univ., South Korea.

P755 **58.8** The role of the HO-1/heme axis on macrophage cytokine production. **R. Choa and T. Kambayashi**. Perelman Sch. of Med., Univ. of Pennsylvania.

P756 **58.9** TRAF3 is a critical regulator of the expansion of myeloid-derived suppressor cells in mice. **S. Zhu, A. Lalani, D. Sant'Angelo, L.R. Covey and P. Xie**. Rutgers Univ.

P757 **58.10** Magnolol attenuates the cisplatin-induced muscle wasting via M2c macrophage activation. **C. Lee, S-Y. Park, D. Min and H. Bae**. Kyung Hee Univ., South Korea.

P758 **58.11** Itaconate inhibits alternative activation of macrophages by targeting Janus kinase 1. **M.C. Runtsch and L. O'Neill**. Trinity Col. Dublin, Ireland.

P759 **58.12** WITHDRAWN

P760 **58.13** IL-34 differentiation of immunosuppressive macrophage. **K. Kelly-Scumpia, R. Shirazi and R. Modlin**. Univ. of California, Los Angeles.

P761 **58.14** Targeted deletion of CD11b+ macrophage subtypes alter the acute inflammatory cytokine response in bone healing. **J. Cottrell, S. Hozain and D. Touma**. Seton Hall Univ.

P762 **58.15** Sympathetic nervous tone influences anti-tumor immunity by mediating accumulation of myeloid-derived suppressor cells and regulatory T-cells. **J.T. Nevin, W.L. Corwin and P.K. Srivastava**. Univ. of Connecticut Hlth. Ctr.

P763 **58.16** Visualising interaction of monocytes with red blood cells sensitised with "clinically significant" antibodies. **M.M. Dean, J. Ji, Y.T. Gu, E. Sauret and R.L. Flower**. Australian Red Cross Blood Service, Australia and Queensland Univ. of Technol., Australia.

P764 **58.17** PI3K activated tumors evade tumor immunity by promoting an inhibitory myeloid microenvironment. **N.B. Collins, R. Al Abosy, B. Miller, K. Bi, R. Manguso, K. Yates and W.N. Haining**. Dana-Farber Cancer Inst., Broad Inst. of MIT and Harvard and Merck Res. Lab.

P765 **58.18** Fatty acid transporter 2 regulates the suppressive functions of PMN-MDSC in cancer. **F. Veglia, V. Tyurin, M. Blasi, A. De Leo, L. Donthireddy, C. DiRusso, P. Black, V. Kagan and D.I. Gabrilovich**. The Wistar Inst., Univ. of Pittsburgh, Duke Univ. and Univ. of Nebraska-Lincoln.

P766 **58.19** IL-10 and TGF- β differentially regulate gap junction formation and membrane transfer in macrophages and macrophage-like cells. **E. Eill and S.M. Taffet**. Upstate Med. Univ.

59. INNATE IMMUNE MECHANISMS

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P767 **59.1** Autophagy-based unconventional secretion of alarmin HMGB1 by keratinocytes plays a pivotal role in psoriatic skin inflammation. **Z. Wang, H. Zhou, H. Zheng, X. Teng, X. Wei and J. Li**. Sichuan Univ., China.

P768 **59.2** Exploiting altered enhancer landscapes to decode pathogenic changes in gene expression of diverse hepatic macrophages. **T.D. Troutman, J.S. Seidman, M. Sakai, A. Gola, Z. Ouyang, N.J. Spann, C.M. Bruni, H. Bennett, K. Ego, B-C. Vu, X. Sun, M. Pasillas, J.L. Witztum, R.N. Germain and C.K. Glass**. Univ. of California, San Diego and NIAID, NIH.

P771 **59.3** Dietary soluble fiber induces HCC in dysbiotic mice through a spectrum of immunosuppressive mediators. **M. Vijay-Kumar, B.S. Yeoh, V. Singh, R.M. Golonka and P. Saha**. Univ. of Toledo Col. of Med. and Life Sci., The Pennsylvania State Univ. and The Univ. of Toledo Col. of Med. and Life Sci.

P774 **59.4** Ptpn6 inhibits caspase-8- and Ripk3/Mlkl-dependent inflammation. **B.A. Croker, M. Speir, C.J. Nowell, A.A. Chen, J.A. O'Donnell, A.A. D'Cruz, M. Bliss-Moreau, S. Wang, M.A. Kelliher, R. Hakem and M. Gerlic**. Boston Children's Hosp., Monash Inst. of Pharmaceutical Sci., Australia, Harvard Med. Sch., The Walter and Eliza Hall Institute of Med. Res., Australia, Univ. of Massachusetts Med. Sch., Univ. of Toronto, Canada and Tel Aviv Univ., Israel.

P779 **59.5** Extracellular calcium-phosphate nanoparticles activate the NLRP3 inflammasome through CaSR signaling. **E. Jäger, C. Stäubert, P. Sungur, S. Höppener, S. Strobel, S. Murthy, M. Rossol and U. Wagner**. Leipzig Univ., Germany and Friedrich Schiller Univ. Jena, Germany.

P800 **59.6** A sustained small increase in NOD1 expression promotes ligand-independent oncogenic activity. **L. Rommereim, A.S. Akhade, B. Dutta, C. Hutcheon, N. Lounsbury, C. Rostomily, R. Savan, I. Fraser, R. Germain and N. Subramanian**. Inst. for Systems Biol., NIAID, NIH and Univ. of Washington Sch. of Med.

P803 **59.7** A loss-of-function single nucleotide polymorphism in cytochrome b5 reductase 3 amplifies the response of bone marrow-derived macrophages to high salt. **J.A. Jerome, E.R. DeVallance, P.J. Pagano and A.C. Straub**. Univ. of Pittsburgh Sch. of Med.

P769 **59.8** Axl-mediated Akt phosphorylation leads to mTORC1 activation via NF_k-B in renal mesangial cells. **W. Shao and Y. Zhen**. Univ. of Cincinnati.

P770 **59.9** TRIM14 promotes endothelial activation via NF-κB signaling pathway. **Y. Li, D. Fan and M. Fu**. Univ. of South Carolina and Univ. of Missouri, Kansas City.

P772 **59.10** Distinct heat shock protein-mediated immune responses are induced by macrophages and dendritic cells. **A.L. Sedlacek, L.B. Kinner-Bibeau, Y. Wang, A.P. Mizes and R.J. Binder**. Univ. of Pittsburgh, Colorado State Univ. and Tsinghua Univ., China.

P773 **59.11** Analysis of regulatory elements in the *HLA-A*, *HLA-B*, and *HLA-C* genes provides insights into the specific role of each HLA in the immune system. **S. Anderson and H. Li**. Leidos Biomed. Res., Inc.

P775 **59.12** CD31 acts as a checkpoint molecule and is modulated by FcγR-mediated signaling in monocytes. **J.P. Butchar, G. Merchand-Reyes, F. Robledo-Avila, N. Buteyn, S. Gautam, R. Santhanam, K. Fatehchand, S. Partida-Sanchez and S. Tridandapani**. The Ohio State Univ., Nationwide Children's Hosp. and Texas Biomed. Res. Inst.

P776 **59.13** Changes in myeloid-derived suppressor cell function during neonatal sepsis. **J. Vance, T. Rawson, M.R. Witt, B.G. Seman, S. Bradford and C.M. Robinson**. West Virginia Univ.

P777 **59.14** Investigation of the role of Axl receptor in the development of uterine immune tolerance at the onset and continuation of pregnancy. **E. Konuk, A. Okan, E. Orhan, E. Katırcı, F. Qulieva and N. Demir**. Akdeniz Univ., Turkey.

P778 **59.15** WITHDRAWN

P801 **59.16** Retinoic acid-induced expression of CD103 in human DCs is dependent on p38 MAPK signaling and NFAT1c. **M.M. Roe, S. Swain and D. Bimczok**. Montana State Univ.

Don't forget to take advantage of the knowledge-building opportunities presented at the Exhibitor Workshops. Check the Meeting Guide or app for more details.

P802 **59.17** Knockdown of circular RNA FSCN1 impairs dendritic cell immune function through regulating the NFKB and Foxo3 signaling pathways. **X. Zheng, C. Zhu, Y. Su, B. Wang and D. O'Brien**. Univ. of Western Ontario, Canada.

P804 **59.18** Receptor tyrosine kinase Axl plays a protective role in the autoantibody-induced arthritis. **Y. Wu**. Soochow Univ., China.

60. REGULATION OF INNATE AND CYTOTOXIC LYMPHOCYTE RESPONSES: MOLECULAR MECHANISMS

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P805 **60.1** HMGB1-induced ILC2s activate dendritic cells by producing IL-9 in mice asthma. **H. Xu, J. Wan, Z. Su and S. Wang**. Jiangsu Univ., China.

P806 **60.2** BHLHE40 programs mitochondrial regulation of resident $CD8^+$ T cell fitness and functionality. **C. Li, B. Zhu, Y. Son, Z. Wang, B.T. Edelson, T. Hitosugi, J.C. Rathmell, H. Dong and J. Sun**. Mayo Clin., Washington Univ., St. Louis and Vanderbilt Univ. Med. Ctr.

P807 **60.3** WITHDRAWN

P808 **60.4** The NF-kappa B regulator Bcl-3 is critical factor for memory $CD8^+$ T cell generation. **H. Jaiswal and U. Siebenlist**. NIAID, NIH.

P809 **60.5** Single cell transcriptomics resolves activation dynamics and cellular states of human blood and tissue T cells. **P.A. Szabo, H.M. Levitin, M. Miron, M.E. Snyder, T. Senda, J. Yuan, Y.L. Chen, E.C. Bush, P. Dogra, P. Thapa, P.A. Sims and D.L. Farber**. Columbia Univ. Med. Ctr.

P810 **60.6** NUR77 has a cell intrinsic role in natural killer T cell development and function. **A. Kumar, N. Suryadevara, T.M. Hill, L.E. Gordy, J.S. Bezbradica, L. Wu, P. Acharya, S.W. Hiebert, L. Van Kaer and S. Joyce**. Tennessee Valley Hlth. Care Syst., Vanderbilt Univ. Med. Ctr. and Vanderbilt Univ. Sch. of Med.

P811 **60.7** High spare respiratory capacity is a canonical feature of virtual memory, but not conventional memory CD8 T cells, and is driven by IL-15 signaling. **N.L. La Gruta, K.M. Quinn, F. Kraus, L. Formosa, M. Dagley, E. Saunders, T. Hussain, L. Assmus, A. Costin, J. Clark, G. Ramm, K. Good-Jacobson, M. McConville and M. Ryan**. Monash Univ., Australia and Univ. of Melbourne, Australia.

P812 **60.8** Signaling from individual opioid receptors differentially modulates the functional and phenotypic potential of resting and activated human CD8+ T cells. **C. Mazahery, S. Valadkhan and A.D. Levine**. Case Western Reserve Univ.

P815 **60.9** TIM-3-dependent regulation of restimulation-induced cell death sensitivity flips changes in early versus late-stage human effector T cells. **C. Lake, T. Jiang, B. Bauman, K. Voss and A.L. Snow**. Uniformed Serv. Univ. of the Hlth. Sci.

P813 **60.10** CFTR, which not only serves as a TCR signaling molecule but also function as an anion channel, dual-negatively regulates IFN-γ production and tumor immunity in $\gamma\delta$ T cells. **Y. Duan, G. Li, M. Xu and Z. Yin**. Jinan Univ., China.

P814 **60.11** Dynamic changes in 3D spatial chromatin organization underpin virus-specific killer T cell differentiation. **S.J. Turner, A. Morey, M. Olshansky, P. Collas, Z. He, C. Murre and B.E. Russ**. Monash Univ., Australia, Univ. of Oslo, Norway and Univ. of California, San Diego.

P816 **60.12** $\gamma\delta$ T cell activation in response to a keratinocyte wound signature. **M.D. Johnson, C. Higginson, S. Tekkam, S. Crooke, J. Lloyd, D. Witherden, M.G. Finn and W.L. Havran**. Scripps Res. Inst. and Georgia Inst. of Tech.

P817 **60.13** PD-1 is negatively regulated by LSD1 through interactions with Blimp-1 during acute viral infection. **D.K. Neeld, A. Bally, P. Lu, P. Majumder, B. Barwick and J.M. Boss**. Emory Univ. Sch. of Med.

P819 **60.14** Identification of T_{RM} subsets with distinct cellular states and memory potential. **K. Omilusik, J.J. Milner, N. Kurd, C. Toma, J.T. Chang and A.W. Goldrath**. Univ. of California, San Diego.

P821 **60.15** Tracking the in vivo history and fate of IL-2 producing CD8 T cells during memory differentiation. **Y. Yuzefpolskiy, S. Sarkar and V. Kalia**. Univ. of Washington Sch. of Med.

P820 **60.16** Trib1 controls antiviral immunity by restraining CD4 and CD8 T cell effector responses during chronic infection. **K.S. Rome and W.S. Pear**. Univ. of Pennsylvania.

P818 **60.17** Smad signaling determines the fate of activated CTLs via multiple intersecting signaling pathways. **K. Chandiran, J.E. Suarez-Ramirez, Y. Hu, S. Kaech and L.S. Cauley**. UConn Hlth., Emory Univ. and The Salk Inst.

P822 **60.18** Delineating the functions of RIPK1 in vivo through CRISPR/Cas9-mediated gene editing in mice. **X. Zhang, J.P. Dowling and J. Zhang**. Thomas Jefferson Univ.

P823 **60.19** Simultaneous analysis of mRNA and proteins in immune cells using the BD™ Single-Cell Multiplexing Kit and BD™ AbSeq reagents on the BD Rhapsody™ system for high-resolution interrogation of differential immune regulation. **H-W. Song, G.V. Baracho, N. Bansal, I. Taylor, E. Shum, S. Widmann and S. Mortimer**. BD Biosciences and FlowJo, LLC.

P824 **60.20** Novel expression of bone morphogenic protein 10 in lymphocytes. **V.K. Tsiagbe, S. Avina, S. Mills, S. Patel and Y. Li**. Rutgers Univ.

61. IMMUNOLOGY EDUCATION

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P834 **61.1** Student outcomes in a cure course using simple model organisms to characterize host-pathogen interactions. **M. Snyder and A. Trauth**. Towson Univ. and Univ. of Delaware.

P826 **61.2** Manipulating peripheral blood cell populations to mimic immune disease states: a novel approach to teach flow cytometry to undergraduate immunology students. **M. Costabile, H. Nguyen and A. Kenyon**. Univ. of South Australia, Australia.

P827 **61.3** Development and evaluation of an interactive simulation to teach undergraduate immunology students all stages of monoclonal antibody production. **M. Costabile**. Univ. of South Australia, Australia.

P828 **61.4** Teaching hemolytic disease of the newborn (Erythroblastalis fetalis) to undergraduate immunology students through the use of an interactive simulation. **M. Costabile**. Univ. of South Australia, Australia.

P829 **61.5** Development of an interactive simulation and app (PipetteMaster) to teach undergraduate students how to read, set and use and automatic laboratory pipette. **M. Costabile and C. Della Vedova**. Univ. of South Australia, Australia.

P830 **61.6** The new paradigm shift in microbiology and immunology education in Azerbaijan Medical University, Baku, Azerbaijan. **N. Fazal, S. Ali, D. Sheriff, D. Brewer and P. Childs**. Chicago State Univ. Col. of Pharm.

P831 **61.7** Just in time teaching strategies: from implementation to student buy-in. **D.M. Brown, K.R. Brazeal and B.A. Couch**. Univ. of Nebraska, Lincoln.

P832 **61.8** A speaking-intensive model for case studies in undergraduate immunology. **S. Redmond and A. Mohamed**. Radford Univ.

P833 **61.9** An intervention to increase accuracy and understanding in undergraduate micropipette use. **L. Avery, A. Dukes and M. Warner**. Children's Hosp. of Philadelphia and Univ. of Pittsburgh.

P835 **61.10** Maximizing engagement and critical thinking with stories: case studies of all shapes and sizes. **K.R. Lukin and K. Aviszus**. Western Governors Univ. and Natl. Jewish Hlth.

P836 **61.11** Supporting scientific knowledge communication and translation efforts by engaging appropriately with the Pacific audience. **D. Sika-Paotonu, B. Laing, T. Anitelea, T. Uiese, R. Puni, T. Vaipuna and A. Fa'atoese**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand.

P837 **61.12** Cinemimmunology-the use of cinema to learn immunology. **S. Siddiqui, S. Olk, R. Collier and N. Fazal**. Chicago State Univ. Col. of Pharmacy.

P838 **61.13** Using IF AT strategy in the Dental Immunology curriculum has a beneficial impact on the performance of second year dental students. **P. Alard**. Univ. of Louisville.

P839 **61.14** Engaging with Pacific communities to support effective dialogue, appropriate outreach and scientific knowledge translation activity. **D. Sika-Paotonu, T. Anitelea, T. Uiese and A. Cockburn**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand and Wellington East Girls' Col., New Zealand.

P840 **61.15** Immunology as a basis for STEM related teaching that is culturally appropriate and engages underrepresented high school students. **D. Sika-Paotonu and A. Cockburn**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand.

P841 **61.16** An Immunological basis for improving interest and participation of underrepresented student groups in high school science classes. **D. Sika-Paotonu, J. Anderson, P. Cashin and A. Cockburn**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand.

P842 **61.17** Role modelling Immunology to support STEM education outreach efforts for Pacific college students. **D. Sika-Paotonu**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand.

P843 **61.18** STEM knowledge translational outreach efforts: connecting with Immunology in the classroom for Pacific intermediate students. **D. Sika-Paotonu**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand.

P844 **61.19** The utilisation of clinically relevant Immunological research examples for undergraduate medical sciences education. **D. Sika-Paotonu, V. Gu, G. Williams, E. Pinfold, J. Whyte, L. Motu, T. Anitelea, J. Yuhoi and B. Laing**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand.

P845 **61.20** Contextualisation of immunology based teaching for undergraduate medical science students that supports knowledge application. **D. Sika-Paotonu, A. Yang, K. Vaipuna, E. Buckley, H. Bartlett, S. Kalyanasundaram and A. Faatoese**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand.

P846 **61.21** An online workshop integrated into Immunology course to teach pharmacogenomics to the first-year pharmacy students. **N. Fazal, R. Joly, N. Jassem, M. Edquiban, B. Lakhani and K. Shaikh**. Chicago State Univ. Col. of Pharmacy.

62. CELLULAR MECHANISMS OF INNATE IMMUNITY I

Poster Session

Fri. 2:30 pm—Exhibit/Poster Hall

P865 **62.1** Crosstalk between lung epithelial cells and myeloid cells in innate immune defense. **X. Liu, M.A. Boyer and S. Shin**. Perelman Sch. of Med., Univ. of Pennsylvania.

P849 **62.2** Type III interferons are expressed in tuberculosis granulomas and may influence signaling in epithelioid macrophages. **P. Talukdar and J.T. Mattila**. Univ. of Pittsburgh.

P860 **62.3** Phenotypic analysis of alveolar macrophage populations in old mice and their response to *Mycobacterium tuberculosis* infection. **W.P. Lafuse, M.V.S. Rajaram, Q. Wu, J.I. Moliva, J.B. Torrelles, J. Turner and L.S. Schlesinger**. The Ohio State Univ. and Texas Biomed. Res. Inst.

P862 **62.4** Alveolar macrophage responses to *Mycobacterium tuberculosis* reveal human-to-human variation in important immunobiology pathways gleaned from functional genomics study. **A. Azad, A. Papp, X. Zhou, M. Pietrzak, M. Wang, E. Arnett, M. Montoya, S. Handelman, G. Rempala, S. Lin, W. Sadee and L. Schlesinger**. Texas Biomed. Res. Inst., The Ohio State Univ. and Univ. of Michigan.

P858 **62.5** Caspase 11 negatively regulates carbapenem-resistant *Klebsiella Pneumoniae*-induced pneumonia. **L. Ghimire, S. Paudel, L. Jin and S. Jeyaseelan**. Louisiana State Univ.

P853 **62.6** Novel role of zinc homeostasis in IL-23 regulation and host defense following bacterial infection. **S.C. Hall, D.R. Smith, D.M. Katafiasz, K.L. Bailey and D.L. Knoell**. Univ. of Nebraska Med. Ctr.

P857 **62.7** Ketogenic diet activates protective $\gamma\delta$ T cell responses against influenza virus infection. **E.L. Goldberg, R. Molony, S. Sidorov, E. Kudo, V.D. Dixit and A. Iwasaki**. Yale Sch. of Med.

P867 **62.8** Gamma Herpesvirus manipulates HVEM regulated IL-1β pathway to evade immune responses. **W.W. Lin, E. Chapell, G. Brar, T-T. Wu, R. Sun, B. Baaten and C.F. Ware**. Sanford Burnham Prebys Med. Discovery Inst. and Univ. of California, Los Angeles.

P847 **62.9** IL-25 regulates alveolar macrophage exosome release in response to LPS. **J. Fan, Y. Li and Z. Li**. Univ. of Pittsburgh Sch. of Med.

P848 **62.10** Post-traumatic pulmonary infection: the innate immune response protects the lung at the expense of the healing cutaneous wound. **M. Crane, Y. Xu, S.F. Monaghan, B.M. Hall, H.L. Tran, W.L. Henry, J.E. Albina and A.M. Jamieson**. Brown Univ. and Rhode Island Hosp.

P850 **62.11** Characterization of AIM2 expression in human macrophages during *M. tuberculosis* infection. **C.O. Ontiveros, E. Arnett and L.S. Schlesinger**. Univ. of Texas Health Sci. Ctr., San Antonio and Texas Biomed. Res. Inst.

P851 **62.12** Characterizing the BCG-induced T cell independent mechanisms for defense against *Mycobacterium tuberculosis*. **T. Bickett, E. Creissen, F. Silva Angulo, A. Izzo, L. Izzo and A.A. Izzo**. Colorado State Univ.

P852 **62.13** Myeloid-derived suppressor cells from HIV-infected individuals are defective in innate immunity to *Mycobacterium tuberculosis* thus increasing the risk of tuberculosis. **A.J. Garg and S.A. Spector**. Univ. of Georgia, Athens and Univ. of California San Diego.

P854 **62.14** Involvement of sphingosine kinase during autophagosome formation plays a critical role in controlling the growth of *Mycobacterium tuberculosis* within human mesenchymal stem cells. **A. Khan, V.K. Singh, L. Mann, R. Papanna, D. Canaday, S.A. David, A.S. Tsetkov and C. Jagannath**. Houston Methodist Res. Inst., Univ. of Texas, Houston, Case Western Reserve Univ. and Univ. of Minnesota.

P855 **62.15** Insulin-like growth factor 1 regulates a pulmonary niche promoting type 3 innate lymphoid cell development necessary for protection against pneumonia in the newborn. **J.K. Gray, K. Oehrle, E.G. Acker, I. Lang, N. Cloud and H. Deshmukh**. Cincinnati Children's Hosp. Med. Ctr.

P856 **62.16** Role of pulmonary innate immune memory leukocytes in the repeated respiratory infection of influenza A virus. **N. Li**. CAMS, China.

P859 **62.17** Deletion of MCP-1 enhances susceptibility to carbapenem-resistant *Klebsiella pneumoniae* via modulating neutrophil and macrophage function. **L. Jin, L. Ghimire, S. Paudel, S. Cai and S. Jeyaseelan**. Louisiana State Univ.

P861 **62.18** HVEM signaling in pulmonary epithelial cells is required for protection against *Streptococcus pneumoniae*. **T-F. Chou, K. Hitomi, J-W. Shui, K. Kakugawa, H. Cheroutre and M. Kronenberg**. La Jolla Inst. for Immunology, Inst. of Biomed. Sci., Academia Sinica, Taiwan and RIKEN Ctr. for Integrative Med. Sci.

P863 **62.19** Type 1 interferon expression and signaling occur in spatially-distinct regions in granulomas from Mycobacterium tuberculosis-infected cynomolgus macaques. **J.T. Mattila**. Univ. of Pittsburgh Grad. Sch. of Publ. Hlth.

P864 **62.20** HIV infection associated oxidation of innate immune proteins in the human lung mucosa alters the host response to *Mycobacterium tuberculosis* infection. **A. Akhter, A. Olmo-Fontánez, J. Moliva, A. Azad, H. Kelley, J. Scordo, M. Gavrilin, M. Wewers and J. Torrelles**. Texas Biomed. Res. Inst. and The Ohio State Univ.

P866 **62.21** Age and HIV perturb the TB immunity in regulatory and cytotoxic subpopulations of NKT cells. **T. Nishiguchi, G. Mtetwa, A. Kay, G. Maphalala, E. Mace, A.M. Mandalakas and A.R. DiNardo**. Baylor Col. of Med., Swaziland Ministry of Hlth., Swaziland and Columbia Univ.

63. CYTOPLASMIC SENSING

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1200 **63.1** WITHDRAWN

P870 **63.2** Nucleosomal double-stranded DNA triggers APOL1 expression through the STING-TBK1-IRF3 pathway. **S.E. Davis, A. Khatua and W. Popik**. Meharry Med. Col.

P879 **63.3** The Ca2+ sensor STIM1 regulates the type I interferon response by retaining the signaling adaptor STING at the endoplasmic reticulum. **J.S. Woo, S. Srikanth, B. Wu, Y.M. El-Sherbiny, J. Leung, K. Chupradit, L. Rice, G.J. Seo, G. Calmettes, C. Ramakrishna, E. Cantin, D.S. An, R. Sun, T-T. Wu, J.U. Jung, S. Savic and Y. Gwack**. David Geffen Sch. of Med., Univ. of California, Los Angeles, St James's Univ. Hosp., Univ. of Southern California, City of Hope Beckman Res. Inst. and Univ. of California, Los Angeles.

P873 **63.4** Proteomic profiling of autoinflammatory diseases, NOMID and CANDLE before and after treatment with interleukin-1 or with interferon blockade. **S. Alehashemi, M. Sawhney, B. Sellers, A. de Jesus, F. Cheung, A. Biancotto and R. Goldbach-Mansky**. NIAID, NIH.

P876 **63.5** Lysophosphatidylcholine activates caspase-1 by bringing about release of ATP and sensitization of purinergic receptor. **S. Ismaeel and A. Qadri**. Natl. Inst. of Immunology, India.

P877 **63.6** Inhibition of NLRP3 inflammasome prevents increase IL1β levels and impairment cognitive in pneumococcal meningitis. **J.S. Generoso, A. Collodel, S.R. Ribeiro Junior, C. Julio Faller, B. França Lodetti, D.I. Bardini, L. Roque Simões, C. Dagostin, F. Fernandes Gabriel, D. Dominguini, F. Dal-Pizzol and T. Barichello**. Universidade do Extremo Sul Catarinense, Brazil and UTHealth.

P871 **63.7** Potassium efflux and serum amyloid A3 are involved in IL-1β production by macrophages infected with *Mycobacterium tuberculosis*. **B-G. Jung and B. Samten**. Univ. of Texas Hlth. Sci. Ctr. Tyler.

P868 **63.8** PtdIns4P on dispersed *trans*-Golgi network mediates NLRP3 inflammasome activation. **J. Chen and ZJ. Chen**. Univ. of Texas Southwestern Med. Ctr.

P869 **63.9** Molecular mechanisms of gasdermin D autoinhibition and recognition by inflammatory caspases. **T.S. Xiao, Z. Liu, J. Yang, C. Wang and R. Yang**. Case Western Reserve Univ.

P872 **63.10** Inflammasome-mediated sensing of multi-component pore-forming toxins. **S.M. Man**. Australian Natl. Univ., Australia.

P874 **63.11** Non-canonical activation of caspase 8 mediates pyroptosis. **A. Poltorak**. Tufts Univ.

P875 **63.12** Calpain drives pyroptotic vimentin cleavage, intermediate filament loss, and cell rupture that mediates immunostimulation. **M.A. Davis, M.R. Fairgrieve, A. den Hartigh, O. Yakovenko, B. Duvvuri, C. Lood, S. Fink, W.E. Thomas and M.J. Gale**. Univ. of Washington.

P878 **63.13** A host cell-intrinsic innate regulatory circuit limits inflammasome activity and promotes immune escape of *Salmonella* inside macrophages. **A.S. Akhade, S.M. Atif, B.S. Lakshmi, N. Dikshit, A. Qadri and N. Subramanian**. Inst. for Syst. Biol. and Natl. Inst. of Immunology, India.

P1201 **63.14** Alarmin(g) outcomes of intracellular LPS sensing. **V. Rathinam, A. Russo, A. Menoret, G. Rabinovich, S. Duduskar, S. Deshmukh and A.T. Vella**. UConn Hlth., Universidad de Buenos Aires, Argentina and Jena Univ. Hosp.

P1202 **63.15** WITHDRAWN

64. INNATE IMMUNE SENSING AND SIGNALING

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1206 **64.1** Redefining the TIR domain: from axon degeneration to innate immunity and beyond. **K. Essuman, L. Wan, D.W. Summers, R.G. Anderson, Y. Sasaki, X. Mao, A.K.Y. Yim, F. Monteiro, E-H. Chung, E. Osborne-Nishimura, J. Dangl, M. Nishimura, A. DiAntonio and J. Milbrandt**. Washington Univ. Sch. of Med., St. Louis, Univ. of North Carolina, Chapel Hill and Colorado State Univ.

P1209 **64.2** Syk-dependent glycolytic reprogramming in dendritic cells regulates IL-1-beta production to fungal-assoicated ligands in a TLR-independent manner. **E. Amiel, P.M. Thwe, D. Fritz and J. Snyder**. Univ. of Vermont and Tufts Univ.

P1211 **64.3** Ikaros zinc finger transcription factors as novel regulators of STAT factor activity. **K. Read, B. Sreekumar, M.D. Powell, D. Jones and K.J. Oestreich**. Virginia Tech.

P1214 **64.4** The suppressor of cytokine signaling 1 impairs skin host defense in healthy and hyperglycemic mice. **N. Klopfenstein and H. Serezani**. Vanderbilt Univ. and Vanderbilt Univ. Med. Ctr.

P1215 **64.5** IRF3 signaling in stromal cells contributes to sepsis pathogenesis. **W. Walker, J. Harper, C. Lopez, J. Nellikappallil and E.L. Heipertz**. Texas Tech Univ. Hlth. Sci. Ctr., El Paso.

P1217 **64.6** NHR-49/PPARα regulates HLH-30/TFEB-mediated innate immune response via a flavin-containing monooxygenase in *C. elegans*. **K. Wani, S. Taubert and J. Irazoqui**. Univ. of Massachusetts Med. Sch. and Univ. of British Columbia, Canada.

P1218 **64.7** Cross-talk between MDP/NOD2 and GPIbα/Mac-1 pathways controls production of PGE_2 and of IL-1b and IL-6 cytokines in human monocytes activated with MDP adjuvant. **M. Zaitseva, F. Liu, Y. Endo, T. Romantseva, W.W. Wu, R. Shen and H. Golding**. CBER, FDA.

P1220 **64.8** Induction of COX-2 gene transcription and prostaglandin E2 (PGE_2) production in primary human monocytes by MDP adjuvant: role of MAPK and p300 HAT. **F. Liu, T. Romantseva, H. Golding and M. Zaitseva**. CBER, FDA.

P1221 **64.9** Lactic acid suppresses LPS-induced mast cell cytokine production by limiting glycolysis and ATP availability. **J.J. Ryan, L.A. Hoeferlin, C.E. Chalfant and H. Caslin**. Virginia Commonwealth Univ., Virginia Commonwealth Univ. Sch. of Med. and Univ. of South Florida Morsani Col. of Med.

P1222 **64.10** Nucleic acid sensing in a 3D hydrogel model of B16F10 mouse melanoma. **L. Heller, A. Bulysheva, S. Arpag-Mcintosh, N. Semenova and M. Cemazar**. Old Dominion Univ. and Inst. of Oncology Ljubljana.

P1223 **64.11** Knockdown of Syk and Hrs in murine astrocytes alters immune response following TLR3 stimulation. **M.B. Mielcarska, M. Bossowska-Nowicka and F.N. Toka**. Warsaw Univ. of Life Sci.

P1224 **64.12** TRAF3IP3 negatively regulates type I interferon signaling by suppressing TBK1. **M. Deng, J.W. Tam, H. Guo, L. Zhang, B.K. Davis, J. Brickey, S. Sun and J.P. Ting**. Lineberger Comprehensive Cancer Ctr., Univ. of North Carolina, Chapel Hill, Dept. of Biol., Franklin and Marshall Col., Lancaster, PA and Univ. of Texas MD Anderson Cancer Ctr.

P1225 **64.13** Bond tension on neutrophil LFA-1 regulates membrane calcium flux from the outside-in. **V.A.ris Morikis, M.H. Jo, T. Ha and S.I. Simon**. Univ. of California, Davis and Johns Hopkins Univ.

P1226 **64.14** Regulation of GLI3 expression by TLR4 signaling. **S.J. Matissek and S.F. Elsawa**. Univ. of New Hampshire.

P1228 **64.15** Novel monoclonal antibodies for the detection of human TLR9. **N.V. Acuff, T. Oida, A.A. Divekar and X. Yang**. BioLegend, Inc.

P1229 **64.16** Induction of innate antiviral immunity through a novel pattern recognition receptor, the RNA helicase DHX16, is regulated by unanchored K48-linked poly-ubiquitin chains. **A. Hage, P. Bharaj and R. Rajsbaum**. Univ. of Texas Med. Br.

P1205 **64.17** Siglec-1 negatively regulates TLR4-mediated inflammatory response by uniquely controlling Src phosphorylation at Ser17. **D. Yang, Y. Wu and G-Y. Chen**. Univ. of Tennessee Hlth. Sci. Ctr.

P1208 **64.18** Conditional disruption of hematopoietic protein-1 in mice reveals an essential role for Hem-1 in myeloid cell functions. **N. Suwankitwat, H. Park, T. Iwata, S. Libby, D. Liggitt and B.M. Iritani**. Univ. of Washington.

P1227 **64.19** Sequential exposure to IFNγ decreases IFNGR and alters myeloid cell IFNγ signaling. **W.J. Crisler, E. Eshleman and L.L. Lenz**. Univ. of Colorado Sch. of Med.

P1204 **64.20** Role of NLRC5 and IRF1 in the induction of MHC class I. **S. Vijayan, T.B. Meissner, K-H. Lee, Y-J. Liu, I. Downs, T. Sidiq, C. Zhang, P.J. van den Elsen and K.S. Kobayashi**. Texas A&M Hlth. Sci. Ctr., Harvard Med. Sch. and Leiden Univ. Med. Ctr., The Netherlands.

P1216 **64.21** H3K4me3 profiles of LPS and immune complex-activated macrophages. **T. Palaga, V. Ruenjaiman and Y-W. Leu**. Fac. of Sci., Chulalongkorn Univ., Thailand, Chulalongkorn Univ., Thailand and Natl. Chung Cheng Univ., Taiwan.

P1207 **64.22** NME4 regulates TLR3 activation and type I IFN production through autophagy-dependent TRAF6 degradation. **B. Sun, X.H. Zhao and R.H. Zhang**. Shanghai Inst. of Biochemistry and Cell Biol., Chinese Acad. of Sci., China.

P1212 **64.23** TLR-2, TLR-3 and TLR-4 agonists induce synthesis of IFN-γ in human M1 but not in M2a, M2b and M2c macrophages through the activation of S6K1-S6 pathwayγ. **A. Kumar, S. Iqbal, A. Mukerjee, N. Gajnayaka, F. Ahmad and A. Crawley**. Univ. of Ottawa, Canada, Hlth. Canada, Canada and Mount Sinai Med. Sch. New York.

P1213 **64.24** Outcomes of ERK signaling differ in macrophages and dendritic cells. **S.G. Groft, N. Nagy, S. Shukla, D. Sweet, W.H. Boom and C.V. Harding**. Case Western Reserve Univ. Sch. of Med.

P1219 **64.25** Dysregulated CARD9 signaling in neutrophils drives inflammation in a mouse model of neutrophilic dermatoses. **S. Tartey and T-D. Kanneganti**. St. Jude Children's Res. Hosp.

P1203 **64.26** Analysis of health and lung injury markers in mice treated with TLR4-interacting SPA4 peptide. **S. Awasthi, N. Rahman, A. Hedrick, V. Awasthi, M. Breshears and S. Kosanke**. Univ. of Oklahoma Hlth. Sci. Ctr. and Oklahoma State Univ.

P1210 **64.27** Modeling the stimulatory network of CD16, 2B4 and NKG2D in natural killer cell activation. **S.Z. Makaryan and S. Finley**. Univ. of Southern California.

65. INNATE LYMPHOCYTE DEVELOPMENT, STROMA, AND AGING

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1233 **65.1** Single cell sequencing reveals mouse MAIT cell diversity. **S. Chandra, G. Seumois, C. Ramirez, G. Seo, P. Vijayanand and M. Kronenberg**. La Jolla Inst. for Allergy and Immunology.

P1234 **65.2** Dose-dependent requirements for ETS1 in invariant natural killer T cell development. **R.C. Morgan and B.L. Kee**. Univ. of Chicago.

P1238 **65.3** Assessment of the global chromatin landscape and transcriptome of peripheral iNKT cell subsets. **M.L. Paynich, I. Engel, G. Seumois, S. Liang, S. Herrera de la Mata, A. Sethi, A. Logandha Ramamoorthy Premlal, J.A. Greenbaum, P. Vijayanand, A. Rao, J. Scott-Browne and M. Kronenberg**. La Jolla Inst. for Immunology and Natl. Jewish Hlth.

P1245 **65.4** Single cell profiling reveals unique stages of NK cell development. **A.M. Beaulieu**. Rutgers New Jersey Med. Sch.

P1244 **65.5** Predicting natural killer cell behavior with mathematical models. **A.J. Millan, S. Sindi and J. Manilay**. Univ. of California, Merced.

P1232 **65.6** Heterogeneity in differentiation capacity among ILC precursors in human peripheral blood and tissues. **E. Kokkinou, I. Gutierrez-Perez, R. Vinay Pandey, A. Rao, L. Mazzurana, S. Almer, C. Höög, U. Lindforss, Y. Bryceson and J. Mjösberg**. Ctr. for Infectious Med., Karolinska Inst., Sweden, Karolinska Inst., Sweden, Karolinska Inst., Stockholm, Solna, Karolinska Inst., and IBD-Center, Gastroenterology, Karolinska Univ. Hosp., Sweden, Karolinska Inst., Sweden. and Karolinska Univ. Hospital, Sweden.

P1237 **65.7** Sustained E protein activity selectively inhibits ILC2 development. **H.R. Berrett and J. Alberola-Ila**. Oklahoma Med. Res. Fndn.

P1235 **65.8** Interleukin-37 improves aging-associated declines in adaptive immunity leading to enhanced suppression of Ph+ leukemia. **C.J. Henry, E. Eisenmesser, C.A. Dinarello and J. DeGregori**. Emory Univ. Sch. of Med. and Univ. of Colorado Anschutz Med. Campus.

P1239 **65.9** Keap1-Nrf2 system controls cellular metabolism to govern NKT cell homeostasis and effector functions. **K. Pyaram, A. Kumar and C-H. Chang**. Univ. of Michigan Med. Sch.

P1231 **65.10** The transcription factor TCF1 is a critical target of ID2 that limits natural killer cell maturation. **B.L. Kee, R. Morman, M. Sun and Z-Y. Li**. Univ. of Chicago.

P1240 **65.11** WITHDRAWN

P1230 **65.12** Effects of TNFα signaling on iNKT cell development, activation and maturation. **H. Zhang, S. Modrak, F. Zhang and A.A. Little**. Col. of Pharmacy and Pharmaceutical Sci., Washington State Univ.

P1241 **65.13** Single-cell analysis of γδ T cells reveals limited TCR delta chain diversity in mouse lung Vγ4 γδ T cells. **S.K. Mistri, K.J. Hampel, O. Dienz and J.E. Boyson**. Univ. of Vermont.

P1236 **65.14** Identification of age-related changes in chromatin accessibility and gene expression in T cells from thymus to periphery. **A. Achour, G. Chen, A. Sharov, T. Nguyen, X. Li, M. Patrick, W. Wood III, S. De, K. Becker, W. Peng and N-P. Weng**. NIA, NIH and George Washington Univ.

P1242 **65.15** Redox regulation of autophagy in thymic stromal cell function. **M.K. Semwal, A.K. Hester, Y. Xiao, T. Venables and A. Griffith**. Univ. of Texas Hlth. at San Antonio and Scripps Res. Inst.

P1243 **65.16** Catalase expression mediates redox regulation of promiscuous gene expression in thymic stromal cells. **A.K. Hester, M.K. Semwal, X. Yangming, S. Cepeda, T. Venables and A. Griffith**. Univ. of Texas Hlth. at San Antonio and Scripps Res. Inst.

66. MUCOSAL IMMUNITY DURING INFECTION

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1246 **66.1** Th17- Mediated Immunity against Co-infection of Influenza A virus and Nontypeable *Haemophilus influenzae*. **X. Zhang and H. Shen**. Univ. of Pennsylvania.

P1247 **66.2** Identification and characterization of lung commensal bacteria that modulate immune response in tuberculosis. **L. Bernard, A. Colom, M. Cescato, C. Cougoule, P. Guilloton, N. Ghebrendrias, F. Capilla, A. Alloy, A. Remot, M. Thomas, P. Langella, O. Neyrolles and G. Lugo-Villarino**. Institut de Pharmacologie et de Biologie Structurale, France, Centre de Physiopathologie de Toulouse Purpan, France and INRA, France.

P1248 **66.3** Inducible epithelial resistance protects against acute viral infection and subsequent $CD8^+$T cell dependent lethal immunopathology. **S. Wali, J.R. Flores, D. Goldblatt, M. Tuvim, B.F. Dickey and S.E. Evans**. Univ. of Texas MD Anderson Cancer Ctr.

P1251 **66.4** Suppression of IL-17 producing type 3 innate lymphoid cells and increased susceptibility to *Klebsiella pneumoniae* sepsis in neonatal mice exposed to extended empiric antibiotics. **J. Mirpuri, S. Thomas Babu, X. Niu, D. Kumar and R. savani**. Univ. of Texas Southwestern Med. Ctr. and Univ. of North Texas Hlth. Sci. Ctr.

P1252 **66.5** Human IFNe and IFNa modulate immune and anti-HIV functions through the differential involvement of IFNa receptors. **V. Pizutelli, C. Tasker, L. Sue, W. Lu and T. Chang**. Rutgers New Jersey Med. Sch., Univ. of North Carolina, Sch. of Med., Chapel Hill and Univ. of Maryland, Sch. of Med.

P1253 **66.6** Novel vaccine adjuvants: exploring the potential of rexinoids to influence effector T cell homing to mucosal sites. **K. Manhas, J.N. Blattman, P.A. Marshall, C.E. Wagner and P.W. Jurutka**. Biodesign Ctr. for Immunotherapy, Vaccines, and Virotherapy, Biodesign Instit., Arizona State Univ. and Sch. of Mathematical and Natural Sciences, Arizona State Univ. West.

P1254 **66.7** Mucosal immune mediated protection of the CNS following olfactory viral infection. **E.A. Moseman**. Duke Univ. Sch. of Med.

P1255 **66.8** Host immunity modulates efficacy of fecal microbiota transplantation treatment of *Clostridium difficile* infection. **M.C. Abt, E.G. Pamer, E.R. Littmann, I. Zarin and R.A. Carter**. Perelman Sch. of Med., Univ. of Pennsylvania and Mem. Sloan Kettering Cancer Ctr.

P1257 **66.9** Analysis of cholinergic pathway-induced alterations at the intestinal mucosa and their association with enhanced resistance to lethal bacterial infection. **M.J. Fernandez-Cabezudo, A.A. Al-Mansouri, G. Bashir, A. Al-Sbiei, K. Venkatachalam and B.K. al-Ramadi**. United Arab Emirates Univ., United Arab Emirates.

P1258 **66.10** *M. tuberculosis* antigen-specific T-cell function in breast milk of HIV-infected mothers. **A.J. Warr, J. Shah, S. LaCourse, J. Kinuthia, E. Maleche-Obimbo, L. Cranmer, F. Nguyen, D. Matemo, G. John-Stewart and T. Hawn**. Univ. of Washington, Kenyatta Natl. Hosp., Kenya and Emory Univ.

P1259 **66.11** Peroxisome proliferator-activated receptor gamma suppresses inflammation and bacterial control during influenza bacterial super-infection. **R. Gopal, A. Mendy, M.A. Marinelli, L.J. Richwalls, P.J. Seger, S. Patel, K.J. McHugh, H.E. Rich, J.A. Grousd, E. Forno and J.F. Alcorn**. Univ. of Pittsburgh and Univ. of Iowa.

P1260 **66.12** WITHDRAWN

P1261 **66.13** Lung-resident memory CD4 T cells do not divide extensively during protective responses against Influenza virus. **K.K. McKinstry and C.M. Finn**. Univ. of Central Florida.

P1262 **66.14** Spatial distribution of antigen-specific $CD8^+$ T cells in virally infected skin. **E. Wynne-Jones, J.P. Shannon, G.V. Reynoso and H.D. Hickman**. NIAD, NIH.

P1264 **66.15** Liver macrophages controls Mycobacterium tuberculosis growth by enhancing autophagy. **R. Sivangala Thandi, D. Tripathi, R.K. Radhakrishnan, P. Paidipally and R. Vankayalapati**. Univ. of Texas Hlth. Sci. Ctr. Tyler and Univ. of Texas Hlth. Sci. Ctr., Tyler.

P1265 **66.16** T-cell derived acetylcholine aids host defenses during enteric bacterial infection with *Citrobacter rodentium*. **V.T. Ramirez, I. Brust-Mascher, M.B. Gardner, J.A. Sladek, M.G. Gareau and C. Reardon**. Univ. of California, Davis, Sch. of Vet. Med.

P1266 **66.17** Unrelated respiratory infections compromise established cellular immunity by promoting apoptosis of pre-existing lung-resident memory CD8 T cells. **S.L. Hayward, Z.R.T. Li, J.L. Lobby, J.O.P. Eggert and J.E. Kohlmeier**. Emory Univ. Sch. of Med.

P1267 **66.18** Prior Bacillus Calmette-Guérin vaccination ameliorates the pathogenesis of type 2 diabetes mellitus mice infected with *Mycobacterium tuberculosis*. **R.K. Radhakrishnan, D. Tripathi, R. Sivangala Thandi, P. Paidipally and R. Vankayalapati**. The Univ. of Texas Hlth. Sci. Ctr. at Tyler.

P1268 **66.19** Swift protection from flu infections in a systemic lupus mouse model. **G. Abboud, S-C. Choi, W. Li, A. Titov, K.K. McKinstry, T.M. Strutt, S. Salek-Ardakani and L. Morel**. Univ. of Florida, Univ. of Central Florida and Pfizer, Inc.

P1269 **66.20** Acetylcholine and cholinergic lymphocytes in the immune response to influenza. **J.A. Phillips, A. Horkowitz and R. Feuer**. San Diego State Univ.

P1256 **66.21** $CD4^+$ resident memory T cells dominate immunosurveillance and orchestrate local recall responses. **L.K. Beura, N.J. Fares-Frederickson, E.M. Steinert, M.C. Scott, E.A. Thompson, K.A. Fraser, J.M. Schenkel, V. Vezys and D. Masopust**. Univ. of Minnesota, Feinberg Sch. of Med., Northwestern Univ., Ctr. for Immunology, Univ. of Minnesota and Bluebird Bio.

P1263 **66.22** Repeated respiratory bacterial exposures elicit lung-resident memory B cells in the absence of organized tertiary lymphoid tissue. **K.A. Barker, N.M. Smith, A.T. Shenoy, I.M.C. Martin, M.R. Jones, L.J. Quinton and J.P. Mizgerd**. Boston Univ. Sch. of Med.

P1249 **66.23** Differential phenotypes and localization of CD8 T cell responses to acute and chronic viral infection. **B.K. Hardman and L. Osborne**. Univ. of British Columbia, Canada.

P1250 **66.24** WITHDRAWN

P1270 **66.25** An intranasally administered antibody cocktail prevents ricin toxin-induced lung inflammation and alveolar macrophage death. **N.J. Mantis, Y. Rong and F.J. Torres-Velez**. New York State Dept. of Hlth.

67. IMMUNE MECHANISMS AT MUCOSAL SITES

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1271 **67.1** Intestinal permeability and IgA provoke immune vasculitis linked to cardiovascular inflammation. **M. Noval Rivas, D. Wakita, M. Franklin, S. Chen, M. Yamashita, T.R. Crother, K. Shimada and M. Arditi**. Cedars-Sinai Med. Ctr.

P1272 **67.2** Distinct roles of TβRIII and LRP-1 in lactoferrin-mediated $Foxp3^+$ inducible Tregs. **S-M. Kim, Y-S. Jang and P-H. Kim**. Kangwon Natl. Univ., South Korea.

P1273 **67.3** The E3 ligase VHL controls lung inflammation by regulating epithelium-ILC2 cross-talk. **J. Han, Q. Wan, S. el Baghdady, J. Lee and Y-C. Liu**. La Jolla Inst. for Allergy and Immunology.

P1274 **67.4** Exosomes from primary bronchial epithelial cells induce tolerance in human monocyte-derived dendritic cells. **A. Agrawal, C. Monterio and S. Agrawal**. Univ. of California, Irvine.

P1275 **67.5** Mechanisms of antigen transport from the female reproductive tract to the gastrointestinal tract. **S.E. Howe, N. Shillova and V.H. Konjufca**. Southern Illinois Univ., Carbondale.

P1276 **67.6** TLR4 signaling regulates an inflammatory response to food allergens. **E. Campbell and C. Nagler**. Univ. of Chicago.

P1277 **67.7** High-frequency irreversible electroporation is an effective tumor ablation strategy that induces inflammatory cell death and promotes anti-tumor immunity. **V.M. Ringel-Scaia, R.M. Brock, N.B. White, K. Eden, S.L. Coutermarsh-Ott, M.F. Lorenzo, R.V. Davalos and I.C. Allen**. Virginia-Maryland Col. of Veterinary Med., Virginia Tech., Virginia Tech. and Virginia Tech-Wake Forest Univ.

P1278 **67.8** Lymphotoxin receptor beta expression by neutrophils prevents metabolic activation and colitis pathogenesis. **D.A. Giles, T. Riffelmacher, S. Zahner, A.Y. Andreyev, S. McArdle, T. Perez, E. Van der Gracht, V. Morris, A. Tumanov and M. Kronenberg**. La Jolla Inst. for Immunology, Univ. of California, San Diego and Univ. of Texas Hlth. Sci. Ctr., San Antonio.

P1279 **67.9** BATF is an essential regulator of migratory ILC2 cell fate and function. **M.M. Miller, P. Patel, K. Bao, T. Danhorn, B. O'Connor and R.L. Reinhardt**. Natl. Jewish Hlth. and Duke Univ. Med. Ctr.

P1300 **67.10** Protective effect of resveratrol on the integrity of alveolar and intestinal epithelial barrier in SEB-induced acute lung injury. **H.F. Alghetaa, A. Mohammed, M. Nagarkatti and P.S. Nagarkatti**. Univ. of South Carolina Sch. of Med.

P1301 **67.11** Single-cell mRNA analysis of colon phagocyte heterogeneity identifies two major macrophage developmental pathways. **B. Kang, L.J. Alvarado, M. Lehman, B-H. Kim, P. Li, H. Cho, J. He, A. Larochelle and B.L. Kelsall**. NIAID, NIH, NHLBI, NIH, NIMH, NIH and NCI, NIH.

P1302 **67.12** High-dimensional immune atlas of second trimester human intestinal immunity. **L. Konnikova, S. Stras, L. Werner, J. Toothaker, A. Oldham and D. Shouval**. Univ. of Pittsburgh and Edmond and Lily Safra Children's Hosp.

P1303 **67.13** Examining the Immune Composition of the intestinal mucosa by mass cytometry. **C.J. Tyler, L. Lundborg, S. Yeasmin and J. Rivera-Nieves**. Univ. of California, San Diego.

P1304 **67.14** Vitamin A signaling regulates pathological epithelial cell shedding via IL-18. **N.R. Iyer and S. Vaishnava**. Brown Univ.

P1305 **67.15** Mutation of *Tgfbr1* leads to non-hematopoietic defects that drive early onset eosinophilic inflammation in the esophagus. **K. Laky, J.L. Kinard, A. Guerrerio, M.J. Li and P. Guerrerio**. NIAID, NIH, Johns Hopkins Univ. and Johns Hopkins Univ. Sch. of Med.

P1306 **67.16** Pulmonary resident effector $CD4^+$ T cells fail to effectively utilize glycolysis. **L.M. Roberts, T.J. Evans and C.M. Bosio**. NIAID, NIH.

P1307 **67.17** Skin-recirculating NK cells express $\alpha_4\beta_1$ integrin, E-selectin ligand, and produce IFNγ. **G.T. Riley, J. Hunka and G.F. Debes**. Thomas Jefferson Univ. and Ludwig-Maximilians-Univ. of Munich, Germany.

P1308 **67.18** The *Cd8* locus controls the functional conversion of CD4 Th cells to CD4 CTL in the intestine. **H. Iwaya, A. Larange, K. Kakugawa and H. Cheroutre**. La Jolla Inst. for Immunology and Lab. for Immune Crosstalk, RIKEN Ctr. for Integrative Med. Sci.

P1310 **67.19** Aryl hydrocarbon receptor activation does not impact the number of myeloid-derived suppressor cells in the spleens of mice immunized with cholera toxin. **A.E. King, E.M. Schoenherr, M.R. Metten and G.K. DeKrey**. Univ. of Northern Colorado.

P1311 **67.20** in vitro model for assessing the effect of T helper cell cytokines on the barrier function of alveolar type II epithelial cells. **D. Coello, J.D. Knott and E. Porter**. California State Univ.

P1312 **67.21** Formation of human T cell mucosal resident memory starts in early life with the intestines. **T. Connors, P. Thapa, M.C. Yopes, R.S. Guyer, M.M. Li, M.E. Snyder and D.L. Farber**. Columbia Univ. Med. Ctr.

P1313 **67.22** WITHDRAWN

P1309 **67.23** Effect of muscarine and atropine on the production of myeloperoxidase and proinflammatory cytokines in small intestine. **A.A. Resendiz-Albor, I.M. Arciniega-Martinez, M.M. Santamaria-Chavez, X.A. Rebollar-Ruiz and R. Campos-Rodriguez**. Escuela Superior de Medicina del Instituto Politecnico Nacional, Mexico.

P1314 **67.24** DOCK8 is involved in mucosal immunity and prevents gut inflammation. **A.K. Singh, S. Saha, G. Bhise, J. Woods, E. Bettelli and M. Oukka**. Seattle Childrens Res. Inst., Benaroya Res. Inst. and Univ. of Washington Sch. of Med.

68. TRANSLATIONAL ADVANCES IN TISSUE SPECIFIC AUTOIMMUNITY

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1315 **68.1** Inducible thymic epithelial cell-based rejuvenation in thymic aging-associated inflammaging. **J. Oh, R. Thomas, W. Wang and D. Su**. Univ. of North Texas Hlth. Sci. Ctr.

P1316 **68.2** Synergistic effect of IL-27 and retinoic acid on the expression of CD39 on mouse Treg cells. **T. Maslanka, I. Gregorczyk, A. Jasiecka-Mikołajczyk and J. Jaroszewski**. Univ. of Warmia and Mazury, Olsztyn, Poland.

P1317 **68.3** B-cell specific duo-conjugates for therapy of autoimmune myasthenia gravis. **R. Huda, A. Bahauddin, X. Fang and X. Wu**. Univ. of Texas Med. Br. and First Affiliated Hosp. of Nanchang Medical Univ.

P1324 **68.4** Blocking the pro-inflammatory response associated with inflammatory bodel Disease with 7-ketocholesterol. **A.K. Bamezai, F. Mallon and A. Lawrence**. Villanova Univ. and Univ. of Pennsylvania.

P1323 **68.5** Development of a novel antigen-specific therapy for autoimmune diabetes using an insulin-ChgA hybrid peptide neoantigen. **B. Jamison, K.S. Beard, T. Neef, B. Bradley, R. Baker, R.G. Gill, S.D. Miller and K. Haskins**. Univ. of Colorado and Feinberg Sch. of Med., Northwestern Univ.

P1331 **68.6** Investigating heme regulation of REV-ERBα activity in Th17 cells. **S.A. Mosure, D. Kojetin and L.A. Solt**. Scripps Res. Inst.

P1320 **68.7** Suppression of inflammatory cytokine production and cell proliferation by salt-inducible kinase inhibition in human myeloid cells is isoform-dependent. **Z. Shao and A. Symons**. Amgen, Inc.

P1325 **68.8** Transplantation of MHC-mismatched mouse embryonic stem cell-derived thymic epithelial progenitors prevents autoimmune diabetes. **M. Su, Y. Lin and L. Lai**. Guizhou Med. Univ., China and Univ. of Connecticut.

P1327 **68.9** Controlling the residual inflammatory risk in type 1 diabetic atherosclerosis. **M. Yussman, D.H. Wagner, G. Vaitaitis and D. Waid**. Univ. of Colorado Anschutz Med. Campus.

P1328 **68.10** T regulatory antigen-specific multi-peptide immunotherapy induce clinical responses in autoimmune diseases. **J.P. Marquez-Manriquez, J.A. Matute-Briseno, P.A.A. Lucero-Diaz and A. Camacho-Hernandez**. CICS USA.

P1332 **68.11** Genetic and pharmacological modulation of RORα regulates T_H17-driven inflammatory disorders. **L.A. Solt, R. Wang, M. Amir, S. Chaudhari, S. Campbell, M.B. Bassette, A. Eliason, M.S. Sundrud and T. Kamenecka**. Scripps Res. Inst.

P1321 **68.12** IFN-β induces IL-6 production by B cells to promote T_H17-mediated neuroinflammation. **A.M. Agasing, S. Gawde, N. Siebert, K. Ruprecht, F. Paul and R.C. Axtell**. Oklahoma Med. Res. Fndn. and Charité – Universitätsmedizin Berlin, Germany.

P1319 **68.13** Human CD39 overexpression or APT102 recombinant apyrase administration enhances Treg and Tr1 cell immunity in inflammatory bowel disease. **M. Vuerich, R.J. Robles, S. Mukherjee, A. Xie, R. Harshe, A.C. Moss, S.C. Robson and M.S. Longhi**. Beth Israel Deaconess Med. Ctr.

P1318 **68.14** Anti-CD4/CD8 antibody therapy induces Foxo1 transcriptional activity promoting T cell egress from inflamed tissue during type 1 diabetes. **M.P. Clark, C. Kroger, A. Martin and R. Tisch**. Univ. of North Carolina, Chapel Hill.

P1329 **68.15** Lipid nanoparticle-mediated delivery of enhanced costimulation blockade to prevent type 1 diabetes. **Y. Zhang, J. Wang, X. Calderon-Colon, O.N. Tiburzi, M. Iglesias Lozano, J.B. Patrone and G. Raimondi**. Johns Hopkins Univ.

P1330 **68.16** ST8Sia6 generated α2,8-disialic acids mitigate hyperglycemia in multiple low dose streptozocin-induced diabetes. **P. Belmonte, M. Shapiro, S. McCue, M. Rajcula and V. Smith Shapiro**. Mayo Clin.

P1326 **68.17** Alpha-synuclein acts as an alarmin to promote dendritic cell activation and proinflammatory immune response. **M.M. Alam, D. Yang, A.L. Trivett, X-Q. Li and J.J. Oppenheim**. NCI, NIH.

P1322 **68.18** Bivalent anti-CD3 Fab dimers drive T cells into a highly efficient fratricide with potential clinical application. **D. Gil Pages, A.D. Nelson, T.A. White and A.G. Schrum**. Univ. of Missouri.

P1333 **68.19** Genetic and pharmacological validation of TAK1 inhibition in macrophages as a therapeutic strategy to effectively inhibit TNF secretion. **S.A. Scarneo, L. Eibschutz, P. Hughes and T. Haystead**. Duke Univ. Sch. of Med.

69. TRANSPLANTATION IMMUNOLOGY

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1334 **69.1** FasL-engineered extracellular vesicles block proliferation of alloreactive T cells in vivo. **S.S. Yerneni, S. Lathwal, P. Shrestha, K. Matyjaszewski, H. Shirwan, S.R. Das, E.S. Yolcu and P.G. Campbell**. Carnegie Mellon Univ. and Univ. of Louisville.

P1335 **69.2** Modeling graft-vs-host disease in humanized mice using different hematopoietic stem cells sources reveals inherent differences in Tc and myeloid cell biology. **N.J. Hess, P. Hematti and J.E. Gumperz**. Univ. of Wisconsin, Madison.

P1336 **69.3** $CD4^+$ T cells are both necessary and sufficient to induce acute graft vs. host disease in lymphopenic recipients. **B.T. McDaniel, J. Enriquez, K. Furr and M. Grisham**. Texas Tech Univ. Hlth. Sci. Ctr.

P1337 **69.4** ITK signaling differentiates GVT and GVHD after allogeneic bone marrow transplantation by regulating IRF-4, JAK/STAT and eomesodermin expression. **M. Karimi**. Upstate Med. Univ.

P1338 **69.5** A longitudinal analysis of TCRβ repertoire diversity in immune tolerance of pediatric patients post-UCBT: T cell clonal deletion over clonal anergy. **X. Chen and P. Szabolcs**. Children's Hosp. of Pittsburgh, Univ. of Pittsburgh Med. Ctr.

P1339 **69.6** Granzyme A-producing helper T cells are critical for lethal acute graft-versus-host disease. **M.R. Olson, S. Park, B. Griesenauer, P. Mehrpouya-Bahrami, M. Kazemian, T. Imam, R. Srivastava, T. Hayes, J. Pardo, S.C. Janga, S. Paczesny and M.H. Kaplan**. Purdue Univ., Indiana Univ. Sch. of Med. and Univ. of Zaragoza, Spain.

P1340 **69.7** Donor $V\gamma4^+$T cells promote graft-versus-leukemia effect and ameliorate acute graft-versus-host disease in allogeneic hematopoietic stem cell transplantation. **Y. Song, Y. Zhu and H. Liu**. National Univ. of Singapore, Singapore.

P1341 **69.8** Bcl-2 inhibition with venetoclax promotes induction of mixed chimerism and renal allograft tolerance without severe myelosuppression in non-human primates. **T. Kawai, H. Sasaki, D. Ma, A. Dehnadi, A.B. Cosimi, P. Cippa and T. Fehr**. Massachusetts Gen. Hosp. and Univ. of Zurich, Switzerland.

P1342 **69.9** Inducible nitric oxide synthase-mediated inhibition of T cell receptor signaling is a mechanism for eosinophil dependent amelioration of alloimmunity in lung grafts. **O.O. Onyema, Y. Guo, B. Mahgoub, A. Manafi, S. Criswell, J. Lannigan, E.A. Jacobsen, A.E. Gelman, D. Kreisel and A.S. Krupnick**. Univ. of Virginia, Mayo Clin. and Washington Univ., St. Louis.

P1343 **69.10** B7-H4 expression in donor T cells and host cells negatively regulates acute graft-versus-host disease lethality. **A. Saha, P.A. Taylor, C.J. Lees, A. Panoskaltsis-Mortari, M.J. Osborn, C.J. Feser, G. Thangavelu, W. Melchinger, Y. Refaeli, G.R. Hill, D.H. Munn, J.S. Serody, I. Maillard, K. Kreymborg, M. van den Brink, C. Dong, S. Huang, X. Zang, J.P. Allison, R. Zeiser and B.R. Blazar**. Univ. of Minnesota, Univ. Med. Ctr. Freiburg, Germany, Univ. of Colorado, Sch. of Med., Fred Hutchinson Cancer Res. Ctr., Georgia Hlth. Sci. Univ., Univ. of North Carolina, Chapel Hill, Univ. of Michigan, Mem. Sloan Kettering Cancer Ctr., Abgenix, Fremont, CA, Albert Einstein Col. of Med. and Univ. of Texas MD Anderson Cancer Ctr.

P1344 **69.11** Neutralization of IL-2 prevents acute GVHD while preserving GVL activity via regulating PD-L1/PD-1 signaling. **Q. Song, X. Wang, P.J. Martin, Y. Chen and D. Zeng**. Beckman Res. Inst., City of Hope, Fred Hutchinson Cancer Res. Ctr. and Fujian Med. Univ. Union Hosp., China.

P1345 **69.12** Alloreactive B cells acquire suppressive function in recipients tolerant to allografts. **S. Khiew, D. Yin, D. Jain, Q. Wang, M-L. Alegre and A.S.F. Chong**. Univ. of Chicago.

P1346 **69.13** Inhibition of the Cullin RING E3 ubiquitin ligase by MLN4924 targets DEPTOR degradation in Tregs to enhance their stability and functional activity. **J. Wedel, K. Liu and D.M. Briscoe**. Boston Children's Hosp.

P1347 **69.14** Kidney allograft recipient absence of myeloperoxidase decreases donor-specific antibody titers and attenuates antibody-mediated allograft rejection. **R.L. Fairchild, S. Miyairi, N. Dvorina, A. Valujskikh and W.M. Baldwin**. Cleveland Clin.

P1348 **69.15** Comparison of the suppressive function of alloantigen-reactive Treg cells and non-stimulated Treg cells in allogeneic skin transplantation. **Y-H. Kim and E.M. Shevach**. LISB, NIAID, NIH.

P1349 **69.16** p40 Homodimers indirectly induce endogenous donor-reactive memory CD8 T cell proliferation within high-risk allografts via IL-15 signaling. **R.L. Fairchild, A. Valujskikh and H. Tsuda**. Cleveland Clin.

P1350 **69.17** Decreased $CD4^+$-Th/$CD8^+$-Tc ratio in bone marrow at diagnosis of acute myeloid leukemia predicts increased risk of graft-versus-host-disease in transplant patients. **W. Wang, H. Li, G. Fan and L. Shen**. Oregon Hlth. and Sci. Univ. and Xinhua Hosp., Shanghai Jiao Tong Univ., China.

P1351 **69.18** Human immune cells directly recognize xenogeneic MHCs. **M.A. Nouri-Shirazi, H. Katz and L. Victor**. Florida Atlantic Univ.

P1352 **69.19** WITHDRAWN

P1353 **69.20** Defining the role of graft-infiltrating B cells in the acute rejection of kidney allografts in mice. **D. Jain, D. Yin and A.S. Chong**. Univ. of Chicago.

P1354 **69.21** C3 expression by lung transplants reduces alloimmune-mediated injury. **H.S. Kulkarni, F. Liao, L. Ma, X. Wu, D. Kreisel, J.P. Atkinson and A.E. Gelman**. Washington Univ. Sch. of Med.

P1355 **69.22** T cell-mediated bone marrow and splenic hypoplasia in a mouse model of acute graft vs. host disease. **J. Enriquez, B. McDaniel Mims, K. Furr and M. Grisham**. Texas Tech Univ. Hlth. Sci. Ctr.

P1356 **69.23** Foxp3 cooperates with Ikaros to control the suppressive function of regulatory T cells. **R.M. Thomas, L. Wang, C. Chen, W.W. Hancock and A.D. Wells**. Children's Hosp. of Philadelphia.

P1357 **69.24** High stearic acid diet aggravates aGVHD by promoting Th17 cells through *Akkermansia muciniphila*. **S. Ma, B. Yang, H. Gong, X. Wu and D. Wu**. Soochow Univ., China.

P1358 **69.25** Ex vivo fucosylation promotes the GVL effect of NK cells after allo-HSCT. **H. Gong, S. Ma and D. Wu**. First Affiliated Hosp. of Soochow Univ., China and Soochow Univ., China.

P1359 **69.26** Inhibition of DNA-PK(cs) prevents graft rejection in a murine allograft skin graft study. **M. Burdine, D. Harrison, Z. Waldrip and L. Burdine**. Univ. of Arkansas for Med. Sci.

P1360 **69.27** Porcine endogenous retrovirus (PERV) C-free pigs as good candidates for xenotransplantation: absence of cell-to-cell PERV transmission to humans. **Z-Y. Wang, J. Easlick, J. Estrada, L.M. Ryes, G.R. Martens, J.M. Ladowski, E. Gray, M. Tector and J. Tectro**. Univ. of Alabama.

P1361 **69.28** The prior exposure of CD4+ T cells to alloantigen blunts their secretion of the reparative growth factor amphiregulin. **X. Zhang, L. Mathews and H.R. Turnquist**. Univ. of Pittsburgh Sch. of Med.

P1362 **69.29** IL-1β and IL-6 facilitate T cell reconstitution in heart allograft recipients treated with anti-thymocyte globulin. **S. Hasgur, R. Fan, D. Zwick and A. Valujskikh**. Cleveland Clin.

P1363 **69.30** Profiling pre-existing autoantibodies for prediction of primary graft dysfunction after lung transplantation. **Q. Li, C. Zhu, L. Terada and V. Kaza**. Univ. of Texas Southwestern Med. Ctr.

P1364 **69.31** The Th17 lineage in heart transplant rejection: examining plasticity and pathogenicity. **L.C. Williams and J. Iacomini**. Sackler Sch. of Grad. Biomed. Sci., Tufts Univ.

P1365 **69.32** The enigmatic impact of donor T cell subsets on the therapeutic efficacy of tolerogenic protocols for transplant rejection. **M. Iglesias Lozano, D. Bibicheff, M. Chicco, G. Brandacher and G. Raimondi**. Johns Hopkins Univ. Sch. of Med.

P1366 **69.33** Type-1 interferons impair the immunoregulatory activity of IL-10: understanding novel mechanisms of abrogation of transplant tolerance. **M. Iglesias Lozano, D. Bibicheff, M. Chicco, G. Brandacher and G. Raimondi**. Johns Hopkins Univ. Sch. of Med.

P1367 **69.34** Expression of the butyrate/niacin receptor, GPR109a on T cells plays an important role in a mouse model of graft versus host disease. **M.D. Docampo, C. Stein-Thoeringer, A. Lazrak, M. Burgos da Silva and M.R.M. van den Brink**. Mem. Sloan Kettering Cancer Ctr.

P1368 **69.35** IL-33 signaling in the barrier tissues sustains alloimmune responses mediating graft vs. host disease. **G.K. Dwyer, L. Mathews, A. Lucas, B.R. Blazar and H.R. Turnquist**. Univ. of Pittsburgh Sch. of Med. and Univ. of Minnesota.

P1369 **69.36** The effect of mouse cytomegalovirus infection on natural killer cell development following hematopoietic stem cell transplant. **C. Dunai, E.G. Aguilar, L.T. Khuat, C.T. Le, Z. Wang, K.M. Stoffel and W.J. Murphy**. Univ. of California, Davis, Univ. of Minnesota and Univ. of California Davis Med. Ctr.

P1370 **69.37** Exopolysaccharide from a commensal bacterium improves outcome of graft versus host disease by decreasing donor T cell activation. **O. Kalinina, S. Talley, W. Paik, E.M. Campbell and K.L. Knight**. Loyola Univ. Chicago.

P1371 **69.38** Immune responses to the microbiome tune MHC class II antigen presentation by the intestinal epithelium to control gut pathology. **M. Koyama, P. Mukhopadhyay, I.S. Schuster, A.S. Henden, J. Hülsdünker, A. Varelias, M. Vetizou, R.D. Kuns, R.J. Robb, P. Zhang, B.R. Blazar, R. Thomas, J. Begun, N. Waddell, G. Trinchieri, R. Zeiser, A.D. Clouston, M.A. Degli-Esposti and G.R. Hill**. Fred Hutchinson Cancer Res. Ctr., QIMR Berghofer Med. Res. Inst., Monash Univ., Australia, Freiburg Univ. Med. Ctr., NCI, NIH, Univ. of Minnesota, Sch. of Med., Univ. of Queensland, Australia and Envoi Pathology.

We want to hear your thoughts and ideas about AAI and its initiatives! Visit us at Booth 1101.

P1372 **69.39** Human monocytes educated with exosomes from TLR4 primed mesenchymal stem cells treat acute radiation syndrome by promoting hematopoietic recovery. **M.H. Forsberg, J. Kink, P. Hematti and C.M. Capitini**. Univ. of Wisconsin, Madison.

P1373 **69.40** Role of Akt isoforms in hyperlipidemia induced changes to regulatory T cells. **M. Hyde, J. Bagley and J. Iacomini**. Sackler Sch. of Grad. Biomed. Sci., Tufts Univ.

P1374 **69.41** Graft plasmacytoid dendritic cells improve thymic function in allogeneic hematopoietic cell transplantation. **J. Zhu, Y. Wang, A. Ulezko Antonova, Y. Li, C. Giver, M. Hassan and E.K. Waller**. Emory Univ. Sch. of Med. and Emory Univ. Hosp.

P1375 **69.42** Inhibiting EZH2 function prevents and treats chronic graft vs host disease by disrupting germinal center formation and plasma cell maturation. **M.C. Zaiken, R. Flynn, K. Paz, S. Rhee, P. Park, M. Hemming, P. Sage, A. Sharpe, L. Luznik, I. Mailard, G.R. Hill, K. MacDonald, J. Serody, C. Cutler, J. Koreth, D. Miklos, J. Antin, R. Soiffer, J. Ritz, J. Bradner, J. Qi and B.R. Blazar**. Univ. of Minnesota, Dana Farber Cancer Inst., Harvard Med. Sch., Brigham and Women's Hosp., Harvard Med. Sch., Harvard Med. Sch., Johns Hopkins Univ. Sch. of Med., Univ. of Pennsylvania, Fred Hutchinson Cancer Res. Ctr., QIMR Berghofer Med. Res. Inst., Lineberger Comprehensive Cancer Ctr., Univ. of North Carolina, Chapel Hill and Stanford Univ. Sch. of Med.

P1376 **69.43** Vasoactive intestinal polypeptide synthesis by somatic tissues in transplant recipients limits GVHD in allo-BMT. **Y. Li and E.K. Waller**. Emory Univ.

P1377 **69.44** Short-term immunosuppression by Ruxolitinib promotes the engraftment of hESC-derived RPE cells in a retinal dege. **Y. Gao, Z. Yin, H. Tang, Z. Lu and H. Zhang**. Southwest Hosp.

P1378 **69.45** Extracellular mitochondria released from hepatic ischemia reperfusion induce macrophage activation both in vitro and in vivo. **Q. Hu, I.D. Haidl, J.S. Marshall and I.P.J. Alwayn**. Dalhousie Univ. and Leiden Univ. Med. Ctr., The Netherlands.

P1379 **69.46** The ocular immune response in a rodent model of whole eye transplantation. **B. Li, W. Zhang, Y. Wang, T. Banaee, W. Chen, A-J. Su, C. Owens, M. Miller, C. Komatsu and K. Washington**. Univ. of Colorado Anschutz Med. Campus and Univ. of Pittsburgh Sch. of Med.

70. ADJUVANT, ANTIGEN PRESENTATION, AND PEPTIDE-BASED VACCINES FOR IMMUNOTHERAPY

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1500 **70.1** Two ICD inducers are better than one for induction of anti-tumor immunity in cold carcinomas. **J.M. Jessup**. Inova Schar Cancer Inst.

P1501 **70.2** Optimization of the T2 HLA-A2 shift assay for testing of the biological activity of immunotherapies. **C. Tram, O. Hrytsenko and M. Stanford**. IMV Inc., Canada.

P1502 **70.3** Intradermal DNA Aβ42 immunization via needle-less Jet injection as potential immunotherapy for Alzheimer's disease. **D. Lambracht-Washington, M. Fu and R.N. Rosenberg**. Univ. of Texas Southwestern Med. Ctr.

P1503 **70.4** Adjuvant screen identifies DC modifying growth factor Flt3 ligand as candidate for prostate cancer DNA vaccine. **K. Malo, A.J. Wong, A.H. Thorne, L. Humeau and E. Masteller**. Inovio Pharmaceuticals, San Diego.

P1504 **70.5** Carbomer-based adjuvant potentiates CTL immunity by enhancing cross-presentation of antigens by NOX2 and TAP-dependent mechanisms. **W. Lee, B. Bakke, S. Sonsalla, D. Sanchez, L. Reyes, G. Iyer and M. Suresh**. Univ. of Wisconsin, Madison.

P1505 **70.6** Kinase domain deleted engineered HER2 could elicit efficient tumor immune response. **I. Jeon, C-H. Koh, T-S. Kang, J-M. Lee, Y. Kang, J. Im, K-S. Shin, B. Song and C-Y. Kang**. Grad. Sch. of Convergence Sci. and Technol., Seoul Natl. Univ., South Korea, Res. Inst. of Pharmaceutical Sci., Col. of Pharmacy, Seoul Natl. Univ., South Korea and Grad. Sch. of Convergence Sci. and Technol., Seoul Natl. Univ., South Korea.

P1506 **70.7** Immunotherapy with tumor membrane vesicle-based cancer vaccine inhibits metastatic tumor growth in lung cancer model. **R. Bommireddy, H.L. Huang, L.E. Munoz, A.P. Menon, S. Ramalingam and P. Selvaraj**. Emory Univ. Sch. of Med.

P1507 **70.8** Vasoactive intestinal peptide signaling–a novel immune checkpoint in pancreatic ductal adenocarcinoma. **S. Ravindranathan, Y. Li, S. Wang, M. Zaidi, G.B. Lesinski, B. El-Rayes and E.K. Waller**. Emory Univ. Sch. of Med.

P1508 **70.9** Natural adjuvants for in situ vaccination lymphoma immunotherapy. **M. Aleynick, P. Peng, R. Upadhyay, L. Hammerich, V. Roudko, M. Yellin and J. Brody**. Icahn Sch. of Med., Mount Sinai and Celldex Therapeutics.

P1509 **70.10** Selenocompounds mediated upregulation of HLA class I expression enhanced mammaglobin-A peptide-specific cytotoxic T lymphocyte responses against breast cancer cells. **V. Tiriveedhi, D. Khandekar and S. Amara**. Tennessee State Univ. and St. Thomas Hosp., Midtown.

P1510 **70.11** Albumin-Flt3L-induced cross-presenting dendritic cells promote neoantigen-specific antitumor immunity and subsequent tumor control in murine models of cancer. **B.K. Lam, D. Esquivel, B. Lee, M. Tan, T.C. Wu and C-F. Hung**. Johns Hopkins Univ. Sch. of Med.

P1511 **70.12** Enhancing antigen delivery using spherical nucleic acids for optimal prostate cancer immunotherapy. **L. Qin, S. Wang, D. Dominguez, A. Long, S. Chen, J. Fan, J.H. Ahn, K. Skakuj, A. Lee, C. Mirkin and B. Zhang**. Feinberg Sch. of Med., Northwestern Univ. and Northwestern Univ.

P1512 **70.13** Mass spectroscopy-defined neoepitopes are a rich source of tumor rejection-mediating neoepitopes in a mouse sarcoma. **H. Ebrahimi-Nik, T. Shcheglova, J. Michaux, H. Pak, E. Sherafat, S. Al Seesi, I.I. Mandoiu, M. Bassani-Sternberg and P.K. Srivastava**. Univ. of Connecticut, Sch. of Med. and Univ. of Lausanne, Switzerland.

P1513 **70.14** Active cancer vaccine targeting carbohydrates for immunotherapy. **V. Padler-Karavani, E.M. Reuven, S. Leviatan Ben-Arye, H. Yu, R. Duchi, A. Perota, S. Conchon, J-P. Soulillou, C. Galli and X. Chen**. Tel Aviv Univ., Israel, Univ. of California, Davis, Avantea, Italy and INSERM, France.

P1514 **70.15** Robust enhancement of tumor-dictated CD8 T cell trafficking and activation by QS21 adjuvanted vaccine. **J.K. Sastry, S.M. Nookala, S.M. Dorta-Estremera, G. Sierra and A.V. Yanamandra**. MD Anderson Cancer Ctr. and Univ. of Texas MD Anderson Cancer Ctr., UTHealth Grad. Sch. of Biomed. Sci.

P1516 **70.16** Assessing the impact of neoantigen load on checkpoint blockade efficacy. **Z. Kosaloglu Yalcin, A. Frentzen, A. Logandha Ramamoorthy Premlal, J. Sidney, J.A. Greenbaum, A. Sette and B. Peters**. La Jolla Inst. for Immunology.

P1517 **70.17** Induction of immune responses and clinical efficacy in a pilot personalized trial of 26 multi-epitope immunotherapy using long peptides Th1 and CD8 simultaneously in progressive tumors. **J.P. Marquez-Manriquez, J.A. Matute-Briseno, S. Icedo-Zamora, A. Durazo-Acuna, P.A. Lucero-Diaz, M.O. Rosas-Delgado and A. Camacho-Hernandez**. CICS USA.

P1515 **70.18** Monoclonal antibodies for reducing opioid use disorders and overdose. **C.A. Baehr and M. Pravetoni**. Univ. of Minnesota.

P1518 **70.19** Defining the signaling and downstream regulation of neutrophil-dendritic cell development for adjunctive therapy. **M. Gui, J.S. Fites, D. Sykes, M.K. Mansour and B.S. Klein**. Univ. of Wisconsin, Madison and Massachusetts Gen. Hosp.

P1519 **70.20** Monocytes outperform ex vivo generated dendritic cells as cellular vaccines to trigger cytotoxic T lymphocyte responses against cancer in pre-clinical models. **M-N. Huang, L.T. Nicholson, K.A. Batich, D. Kopin, A.M. Swartz, J.H. Sampson and M.D. Gunn**. Duke Univ. Sch. of Med.

P1520 **70.21** Engineered toxin bodies delivering immunogenic MHC class I peptides to tumor cells summon polyfunctional and relevant CTL responses against cancers. **J.D. Dekker, B. Brieschke, S. LeMar, G.L. Cornelison, A. Iberg, G.L. Robinson, S. Chu, E.K. Willert and H.J. Ramos**. Molec. Templates.

P1521 **70.22** RNA origami nanostructures for potent and safe anti-cancer immunotherapy. **L. Matiski, X. Qi, X. Liu, R. Rodriguez del Villar, F. Zhang, H. Yan and Y. Chang**. Sch. of Molec. Sci., Arizona State Univ. and Sch. of Life Sci., Arizona State Univ.

P1522 **70.23** A novel vaccination platform for epicutaneous allergen-specific immunotherapy based on beta-glucan neoglycoconjugates. **E. Korotchenko, Y. Machado, H. Strandt, I. Joubert, V. Schiessl, R. Bauer, M. Sarajlic, T. Neuper, S. Wildner, U. Horejs-Hoeck, G. Gadermaier, S. Scheiblhofer, J. Thalhamer and R. Weiss**. Univ. of Salzburg, Austria and Univ. of British Columbia, Canada.

71. CYTOKINE AND T CELL-BASED IMMUNOTHERAPY

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1523 **71.1** Regional pressure-enabled drug delivery of anti-PD-1 agent for colorectal liver metastases improves anti-tumor activity without increased hepatic toxicity. **L.F. Chai, J.C. Hardaway, M.C. Lopes, B.A. Rabinowitz, P. Guha, D. Jaroch, B. Cox, N.J. Espat and S.C. Katz**. Roger Williams Med. Ctr. and TriSalus Life Sciences, Inc.

P1524 **71.2** Improving T cell functionality for adoptive T cell therapy in metastatic colorectal cancer. **S. Ravindranathan, M.R. Jajja, A. Waller, R. Bommireddy, P. Selvaraj, L. Yang and E.K. Waller**. Emory Univ. Sch. of Med.

P1525 **71.3** Optimization of human T-cell activation and expansion protocols improves efficiency of genetic modification and overall cell yield. **J. Yu, P. Chen, A. Watson, D. Truong, J. Antonchuk, A.I. Kokaji, S.M. Woodside, A.C. Eaves and T.E. Thomas**. STEMCELL Technol., Canada.

P1526 **71.4** IL17 depletion enhances the DNA vaccine efficacy in pancreatic ductal adenocarcinoma treatment. **P. Cappello, G. Mucciolo, C. Curcio, C. Roux, R. Curto, G. Barutello and F. Novelli**. Univ. of Turin, Italy and Ctr. for Exp. Res. and Med. Studies, Italy.

P1527 **71.5** A powerful ICOS agonist that enhances anti-tumor immune responses restored by immune checkpoint inhibitors. **J. Gariepy, A. Prodeus, A. Sparkes, N. Fischer and S. Saha**. Sunnybrook Res. Inst., Canada, Univ. of Toronto, Canada and McMaster Univ., Canada.

P1528 **71.6** A novel agonist of CD137 immune checkpoint stimulator serves as a cancer immunoprevention agent with efficacy against various tumor types. **L. Batra, H.B. Barsoumian, P. Shrestha, J.L. Hawthorne, W.S. Bowen, H. Zhao, N.K. Egilmez, J.G. Gomez-Gutierrez, H. Shirwan and E.S. Yolcu**. Inst. for Cellular Therapeutics, FasCure Therapeutics, LLC, Department of Microbiology and Immunology and Hiram C. Polk Jr., MD, Univ. of Louisville.

P1529 **71.7** Towards identification of a lipid metabolic checkpoint for immuno-oncology. **K-L. Hsu, A.L. Borne, J.W. Brulet, S.T. Campbell, C.E. Franks, T. Huang, R.L. McCloud, M. Shin and T.B. Ware**. Univ. of Virginia.

P1530 **71.8** Rejection-resistant off-the-shelf T cells for adoptive cell therapy. **F. Mo, M. Srinivasan, R. Ma, T.S. Smith, M.K. McKenna, E. Atilla, P. Ataca Atilla, H.E. Heslop, M.K. Brenner and M. Mamonkin**. Baylor Col. of Med.

P1531 **71.9** Modulating interlukin-7 (IL-7) cytokine receptor signaling to enhance the persistence and anti-tumor efficacy of Epstein-Barr virus (EBV)-specific T cells in EBV-positive malignancies. **S. Sharma, T. Shum, K. Parikh, B. Omer and C. Rooney**. Baylor Col. of Med. and Houston Methodist Res. Inst.

P1532 **71.10** Deep™ IL-12 priming enhances tumor-specific T cell efficacy and inflammatory activity in tumors without eliciting systemic toxicities. **K. Sauer, D-K. Chang, G. Ahmad, J. Nardozzi, K. Sackton, J. Lyons, T. Andresen and D. Jones**. Torque Therapeutics.

P1533 **71.11** Interleukin-15 in cancer immunotherapy: IL-15 receptor complex versus soluble IL-15 in a cancer cell-delivered murine leukemia model. **A. Berger, S. Colpitts, M. Seabrook, C. Furlonger, M. Bendix, J. Moreau, W. McKillop, J. Medin and C.J. Paige**. Ontario Cancer Inst., Canada and Med. Col. of Wisconsin.

P1534 **71.12** Lenolidamide and IL-15 enhance natural killer cell-mediated immunity and augments the anti-tumor effect of an anti-CD30/CD16A bispecific antibody against Hodgkin's lymphoma B-cells. **A. Manna, S. Aulakh, S. Ailawadhi, A. Chanan- Khan, T. Sher and A. Paulus**. Mayo Clin.

P1535 **71.13** $CD38^{hi}$ B-regulatory cells maintain pathological immune tolerance in chronic lymphocytic leukemia/B cell diseases: *Potential therapeutic considerations*. **A. Manna, S. Aulakh, T. Sher, S. Ailawadhi, A. Chanan- Khan and A. Paulus**. Mayo Clin.

P1536 **71.14** Unbiased functional identification and therapeutic targeting of T cell neoantigens in a spontaneous murine squamous cell carcinoma. **J.S. Dolina, J. Lee, B. Peters and S.P. Schoenberger**. La Jolla Inst. for Immunology.

P1537 **71.15** Determinants of TCRα-β chain pairing in generating TCR diversity. **H. Tanno, T.M. Gould, R.E. Durrett, J.R. McDaniel, W. Cao, J. Gollihar, C. Steven, Y. Tanno, A.D. Ellington, G.C. Ippolito, W. Hildebrand, G. Georgiou and J.J. Goronzy**. The Univ. of Texas at Austin, Stanford Univ. Sch. of Med. and The Univ. of Oklahoma Hlth. Sci. Ctr.

P1538 **71.16** A novel preclinical immunocompetent CAR T cell mouse model for solid tumors. **P.M. Sullivan, L. Arguedas-Jimenez, A. Johnson, J. Yokoyama, Y. Yuzefpolskiy, M. Jensen, V. Kalia and S. Sarkar**. Seattle Children's Res. Inst. and Univ. of Washington.

P1539 **71.17** Use of small molecule inhibitors of metabolism to enhance T cell proliferation and phenotype for adoptive T cell therapies. **A.L. Waller, C.R. Funk, S. Ravindranathan and E.K. Waller**. Emory Univ.

P1540 **71.18** Covalent adaptor synNotch and chimeric antigen receptors for programmable antigen targeting. **J.J. Lomueller, A. Butchy, Y. Tivon, M. Kvorjak, N. Miskov-Zivanov, A. Deiters and O.J. Finn**. Univ. of Pittsburgh.

P1541 **71.19** Improving immunotherapy through immune checkpoint assays, CAR-T target display, and effector function optimization. **S. Edgcomb, J. Zhu, Z. Tao, M. Hsu, M. Kimbara, S. Oberle and H. Zhu**. BPS Bioscience.

P1542 **71.20** CD4-directed adoptive immunotherapy of chimeric antigen receptor-modified T cells with inducible caspase-9 gene for CD4 T-cell malignancies. **W. Ma, G. Li, D. Tian, L. Su and X-n. Xu**. Imperial Col., United Kingdom, UNC-CH, Beijing Ditan Hosp., China and Univ. of North Carolina, Chapel Hill.

72. HIV/SIV VACCINE/IMMUNOTHERAPY AND IMPACT OF HIV/SIV INFECTION IN ANTIGEN-SPECIFIC IMMUNITY

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1548 **72.1** HIV-1-specific B cell immune responses in rhesus macaques induced by early region deleted-Ad5 vectors. **K. Sangare, C. Hogge, S. Helmold Hait, T. Hoang, M. Robert-Guroff and M.A. Thomas**. Howard Univ. and NCI, NIH.

P1551 **72.2** Replicating Ad-SIV recombinant vaccines elicit mucosal humoral immunity in rhesus macaques at both rectal and vaginal sites with potential protective efficacy. **C.J. Hogge, S.H. Hait, G. Enyindah-Asonye, Z. Mushtaq, T. Hoang and M. Robert-Guroff**. NCI, NIH.

P1546 **72.3** A replicating adenovirus-SIV recombinant prime/protein boost regimen induces SIV-specific T and B cell responses in lymph nodes associated with humoral immunity in the genital mucosa of female rhesus macaques. **S.H. Hait, C.J. Hogge, Z. Mushtaq, T. Hoang and M. Robert-Guroff**. NCI, NIH.

P1555 **72.4** Novel HIV DNA vaccine changes the immune hierarchy and elicits broad cytotoxic T cell responses targeting subdominant viral epitopes. **B.K. Felber, Z. Lu, X. Hu, A. Valentin, M. Rosati, J.I. Mullins and G.N. Pavlakis**. Natl. Cancer Inst. and Univ. of Washington.

P1547 **72.5** Influence of vaccine-induced mucosal $NKp44^{+}$ and mucosal $NKp44^{-}NKG2A^{-}$ cells on SIV-infection outcomes in rhesus macaques. **M.A. Rahman, E. Ko, G. Enyindah-Asonye, S.H. Hait, T. Hoang and M. Robert-Guroff**. NCI, NIH.

P1549 **72.6** Passive infusion of Fc-modified neutralizing antibodies does not affect the dynamics of plasma virus decay in SHIV-infected macaques. **M. Asokan, A. Maximova, J. Dias, A.R. Crowley, A. Pegu, D. Ambrozak, K. McKee, W. Shi, J-P. Todd, M.E. Ackerman, L. Gama, B.F. Keele, J.D. Lifson, A.S. Perelson, J.R. Mascola and R. Koup**. NIAID, NIH, Geisel Sch. of Med., Dartmouth Col., Frederick Natl. Lab. and Los Alamos Natl. Lab.

P1552 **72.7** Antibody cross-reactivity in chronic HIV/HCV co-infection. **K. Pilewski, I. Setliff, S. Kalams and I. Georgiev**. Vanderbilt Univ. Med. Ctr.

P1550 **72.8** Reprogramming the antigen specificity of B cells using genome-editing technologies. **A. Gonzalez-Martin, R. Andrabi, R.P. Fuller, B. Murrell, L.E. McCoy, K. Porter, D. Huang, W. Li, D. Sok, K. Le, B. Briney, M. Chateau, G. Rogers, L. Hangartner, A.J. Feeney, D. Nemazee, P. Cannon, D. Burton and J.E. Voss**. Autonoma Univ. of Madrid and Inst. for Biomedical Res. Alberto Sols, Scripps Res. Inst., Univ. of California, San Diego, Univ. Col. London, United Kingdom, Scripps Ctr. for HIV/AIDS Vaccine Immunology & Immunogen Discovery and Univ. of Southern California Keck Sch. of Med.

P1556 **72.9** Characterization of heterologous HIV-1 Tier 2 neutralizing mAbs cloned from a macaque immunized with viral quasispecies present in a human subject with neutralization breadth. **D.A. Spencer, D.C. Malherbe, H. Henderson, S. Pandy, N.V. Bernat, M. Àdori, B. Goldberg, N. Dambrauskas, W. Sutton, N. Sather, J. Kobie, M.E. Ackerman, G.B. Karlsson Hedestam, N.L. Haigwood and A. Jones Hessell**. Oregon Hlth. and Sci. Univ., Karolinska Inst., Karolinska Inst., Sweden, Geisel Sch. of Med., Dartmouth Col., Seattle Children's Res. Inst. and Univ. of Rochester Med. Ctr.

P1543 **72.10** Impact of gut microbiota on vaccine response in HIV exposed infants. **D.D. Nyangahu, C. Plumlee, J. Wendoh, K.B. Urdahl and H. Jaspan**. Seattle Children's Res. Inst., Univ. of Cape Town, South Africa and Univ. of Washington.

Don't forget to take advantage of the knowledge-building opportunities presented at the Exhibitor Workshops. Check the Meeting Guide or app for more details.

P1544 **72.11** Higher PIK3C2B gene expression of H1N1+ specific B cells is associated with lower H1N1 immunogenicity after trivalent influenza vaccination in perinatally HIV infected children. **N. Cotugno, S. Zicari, E. Morrocchi, L.R. De Armas, S. Pallikkuth, S. Rinaldi, S. Rocca, E.C. Manno, P. Zangari, S.F. Andrews, A. Cagigi, P. Rossi, A.B. McDermott, S. Pahwa and P. Palma**. Children's Hosp., Italy, Univ. of Rome, Tor Vergata, Italy, Univ. of Miami and VRC, NIAID, NIH.

P1545 **72.12** Impact of HIV-1 infection and antigen class on T follicular helper cell responses to pneumococcal polysaccharide-protein conjugate vaccine. **L.K. Nicholson**. Denver Veterans Affair Med. Ctr.

P1553 **72.13** Recombinant human IL-15 in combination with anti-PD-L1 (Avelumab) in SIV infected rhesus macaques leads to the expansion of a subset of $CXCR3^{+}PD1^{-/low}$ CD8 T cells. **M. Moussa, J. Cheng, P. Chen, H. Chen, T. Li, J. Qin, J.D. Lifson, M.C. Sneller, L. Krymskaya, S. Godin, C. Lane and M. Catalfamo**. Georgetown Univ. Sch. of Med., NIH, NIAID, NIH, Leidos Biomed. Res., Inc. and Smithers Avanza Toxicology Services.

P1554 **72.14** Assessing the in-vitro effects of anti-PD-L1 (Avelumab) and recombinant human rhIL-15 in CD8 T cell function from HIV infected patients. **B. Goshu, C. Lane and M. Catalfamo**. NIAID, NIH and Georgetown Univ. Sch. of Med.

73. VETERINARY AND COMPARATIVE IMMUNOLOGY

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1577 **73.1** Evolution of the AID/APOBEC family of cytidine deaminases in lampreys. **M. Hirano, Y. Sutoh, S. Das and M. Cooper**. Emory Univ. Sch. of Med.

P1565 **73.2** On the evolutionary origins of Cd1d and the type I, semi-invariant natural killer T cells. **N.C. Suryadevara, A. Kumar, P. Chimski, K. Oh, C. Caster, R.R. Truman, L. Ren, M. Criscitiello and S. Joyce**. Vanderbilt Univ. Med. Ctr., Texas A&M Univ., Natl. Hansen's Dis. Program, Lab. Res. Branch, Louisiana State Univ. and State Key Lab. of Agro-biotechnology, China Agricultural Univ.

P1572 **73.3** Somatic hypermutation of T cell receptor gamma, delta, and beta chains in nurse sharks. **J.A. Ott, J. Harrison, Y. Ota, M.F. Flajnik and M.F. Criscitiello**. Texas A&M Univ. and Univ. of Maryland Sch. of Med.

P1576 **73.4** Isolation and characterization of acute phase protein C-reactive protein in shark serum: a potential biomarker for assessing health in wild sharks. **S.M. Orndorff and L. Merly**. Univ. of Miami.

P1562 **73.5** Rainbow trout as a model for the study of neuroimmune interactions in the nasal mucosa. **I. Salinas, A. Sepahi, A. Kraus and P. Das**. Univ. of New Mexico.

P1566 **73.6** Inflammatory changes and melanization in the Atlantic salmon (*Salmo salar*) targeted by in situ hybridization. **H. Bjoergen, I. Hordvik and E.O. Koppang**. NMBU, Norway and UIB, Norway.

P1567 **73.7** The melanomacrophage center is a potential evolutionary precursor to the mammalian germinal center. **N.C. Steinel**. Univ. of Massachusetts, Lowell.

P1564 **73.8** Segregation of chicken MHC-*Y* haplotypes in high and low antibody selected lines provides evidence that MHC-*Y* contributes to the genetics of immune responses. **J. Zhang, R.M. Goto, C.F. Honaker, P.B. Siegel and M.M. Miller**. Beckman Res. Inst., City of Hope and Virginia Polytechnic Instit. and State Univ.

P1557 **73.9** Sex-specific DLA class II haplotypes are associated with primary hypoadrenocorticism in Standard Poodle dogs. **A. Treeful, A. Rendahl and S. Friedenberg**. Univ. of Minnesota.

P1561 **73.10** Teriflunomide prevents the activation-induced CD25 expression on canine $CD4^{+}$ T cells. **A. Jasiecka-Mikolajczyk, P. Socha, J.J. Jaroszewski and T. Maślanka**. Univ. of Warmia and Mazury, Olsztyn, Poland.

P1563 **73.11** Weaning and postnatal age influence the early time course and nature of intestinal mast cell activation and mucosal inflammation in a porcine model of early life adversity. **N. Wilson, Y. Li, M. Rajput, K. Thelen, K. Kerr and A.J. Moeser**. Michigan State Univ.

P1568 **73.12** Newly isolated porcine epidemic diarrhea virus resistance to interferon and neutralizing antibody. **H-J. Shin and J-E. Park**. Chungnam Natl. Univ., South Korea.

P1571 **73.13** Low weight piglets show differences in intestinal microbiota, intestinal transcriptome and immune cell profile compared to high weight piglets during the first two weeks of lactation. **M. Blais, B. Morissette, G. Talbot, F. Beaudoin, K. Deschene, L. Lo Verso, N. Bissonnette, K. Lauzon, F. Guay and M. Lessard**. Agr. and Agri-Food Canada, Canada and Univ. Laval, Canada.

P1573 **73.14** Skin recirculating B cell subsets in a model of lymph cannulation in sheep. **J. Hunka, J.T. Riley and G.F. Debes**. Thomas Jefferson Univ.

P1575 **73.15** Non-therapeutic administration of antimicrobial growth promoters to interrogate suppression mechanisms of innate and adaptive immune responses using an ovine model of stress. **S.T. Clarke and G.D. Inglis**. Univ. of Alberta, Canada and Lethbridge Res and Develop. Ctr.

P1559 **73.16** Characterization of bovine $\gamma\delta$ T cells phenotype following *Mycobacterium bovis* vaccination or virulent infection. **M. Guerra-Maupome, M.V. Palmer, R. Waters and J.L. McGill**. Iowa State Univ. and USDA-ARS, Natl. Animal Dis. Ctr.

P1558 **73.17** Disease tolerance and immune response in bovine trypanosomiasis is mediated by CD14 promoter gene. **O. Morenikeji and B. Thomas**. Rochester Instit. of Technol.

P1560 **73.18** Aerosol vaccination with Bacille Calmette-Guerin induces a trained innate immune phenotype in calves. **M. Guerra-Maupome and J.L. McGill**. Iowa State Univ.

P1569 **73.19** Equine bone marrow mesenchymal stromal cells inhibit reactive oxygen species production by neutrophils without affecting other important microbicidal functions. **C. Henriquez, G. Espinosa, A. Schenffeldt, P. Alarcon, G. Gajardo, A. Plaza, V. Caffi, B. Uberti and G. Moran**. Univ. Austral de Chile, Chile.

P1574 **73.20** T cells responses during resolving hepacivirus A infection, a surrogate animal model for human hepatitis C. **F. Gimenez, R.H. Mealey and J.D. Ramsay**. Washington State Univ., Col. of Vet. Med.

P1570 **73.21** Functional comparison of human and non-human primate neutrophil responses. **J.F. Brinkworth, K. Van Etten, P. Bhatt, K. McClure, N. Valizadegan, M. Woo, S. Gunasekera, Y. Suarez and B. Aldridge**. Univ. of Illinois, Urbana-Champaign.

P1578 **73.22** Transcriptome analysis of distinct coelomocyte populations in *Strongylocentrotus purpuratus*. **S.D. Fugmann, J.F. Cheng and H.H. Huang**. Chang Gung Univ., Taiwan.

P1579 **73.23** Annotation of the WC1 gene family in *Sus scrofa* and evaluation of individual SRCR domain affinity for *Mycobacterium bovis* and *Leptospira spp*. **L.A. Le Page, J. Buck, N. Boisvert, A. Gillespie, A. Yirsaw, E. Hudgens, H. Hsu, C.L. Baldwin and J.C. Telfer**. Univ. of Massachusetts, Amherst, Harvard Med. Sch., The Ohio State Univ., Col. of Vet. Med., Univ. of Massachusetts Amherst and Univ. of Maryland Sch. of Med.

74. INFLUENZA VIRUS AND THE IMMUNE RESPONSE

Poster Session

Fri. 2:30 pm—Exhibit/Poster Hall

P1604 **74.1** CD8+ T cells require IL-27R for optimal generation of an effector response during influenza infection. **P. Dunbar, Z-R.T. Li, J. Lobby, S.L. Hayward, L. Lawrence and J.E. Kohlmeier**. Emory Univ. Sch. of Med.

P1608 **74.2** CD4 cell-derived IL-2 synergizes with influenza infection to exacerbate lung inflammation. **T.M. Strutt and A. Gilchrist**. Univ. of Central Florida.

P1605 **74.3** IFN-lambda modulates dendritic cells to facilitate protective T cell immunity during influenza A virus infection. **E.A. Hemann, R. Green, B. Turnbull, R.A. Langlois, R. Savan and M. Gale**. Univ. of Washington and Univ. of Minnesota.

P1609 **74.4** Concomitant effector and LAG-3 regulatory responses of Th1-committed cells in acute influenza. **A. Dutta, C-T. Huang, C-Y. Hung, T-C. Chen, C-Y. Lin, Y-C. Lin, C-S. Chang, T-A. Chen and Y-L. Huang**. Chang Gung Mem. Hosp., Taiwan.

P1600 **74.5** BCL6 modulates tissue neutrophil survival and exacerbates pulmonary inflammation following influenza infection. **J. Sun and B. Zhu**. Mayo Clin.

P1612 **74.6** Autoreactive potential of universal influenza vaccines. **M.A. McGargill, M.R. Pillai, T-C. Chang, J. Crawford, R. Keating, J. Labombarde, C. Lewis, J. Guthmiller, Q-Z. Li, P.C. Wilson and P. Thomas**. St. Jude Children's Res. Hosp., The Univ. of Chicago and Univ. of Texas Southwestern Med. Ctr.

P1613 **74.7** Influenza A virus (IAV) infection in humans leads to expansion of highly diverse CD8 T cell repertoires cross-reactive with Epstein Barr virus. **A. Gil, R. Mishra, I.Y. Song, N. Aslan, D. Ghersi and L.K. Selin**. Univ. of Massachusetts Med. Sch. and Univ. of Nebraska.

P1607 **74.8** Mechanism of influenza virus-induced inflammatory cell death. **K. Sannula and T-D. Kanneganti**. St. Jude Children's Res. Hosp.

P1601 **74.9** Differential effect of GITR on lung effector T cell subpopulations during influenza infection. **K.L. Chu, N.V. Batista and T.H. Watts**. Univ. of Toronto, Canada.

P1603 **74.10** Sphingosine 1-phosphate lyase promotes the type I interferon-mediated innate immune response to influenza but is subjected to degradation by influenza A virus NS1. **J.J. Wolf, C. Xia, M. Vijayan, Y. Song, C.J. Studstill, H. Ngo, M.C. Johnson, J.D. Saba, S. Alexander and B. Hahm**. Univ. of Missouri, Columbia and Univ. of California, San Francisco.

P1610 **74.11** The nonlinear relations that predict influenza viral dynamics, host response, pathology, and disease severity. **A.M. Smith**. The Univ. of Tennessee Hlth. Sci. Ctr.

P1606 **74.12** WITHDRAWN

P1611 **74.13** Evaluation of epitope specificity in the immune response to PR8 H1N1 influenza virus infection in neonatal and adult African green monkeys. **E.A. Clemens, D. Angeletti, B.C. Holbrook, S.T. Aycock, J.W. Yewdell and M.A. Alexander-Miller**. Wake Forest Sch. of Med., Univ. of Gothenburg, Sweden, Univ. of Tennessee Hlth. Sci. Ctr. and NIAID, NIH.

P1602 **74.14** Influenza virus M1 interacts with SLD5 to block host cell cycle and inhibit lung epithelial regeneration. **M. Fang, L. Zhu and W. Zhao**. Inst. of Microbiology, CAS, China.

P1614 **74.15** The immune responses to influenza vaccine in aged and metabolic disease occurred cynomolgus macaques. **E. Urano, Y. Murakata, T. Okamura and Y. Yasutomi**. Natl. Institutes of Biomed. Innovation, Hlth. and Nutrition, Japan.

75. VIRUSES AND INNATE IMMUNE EFFECTORS

Poster Session

Fri. 2:30 pm—Exhibit/Poster Hall

P1625 **75.1** Plasmacytoid dendritic cells contribute to HIV diseases and viral persistence via IDO-dependent mechanisms. **G. Li, J. Ma, H. Yu, W. Bi, Y. Wu, L. Cheng and L. Su**. UNC-CH and Inst. of Biophysics of Chinese Acad. of Sci., China.

P1623 **75.2** Microglia secrete exosomes during persistent virus infection of the central nervous system that promote demyelinating disease. **J.K. Olson and N. Luong**. Univ. of Minnesota.

P1627 **75.3** A novel proviral function for IL-17 during gammaherpesvirus infection. **C.N. Jondle, K.E. Johnson, C.A. Aurubin, G. Xin, W. Cui, A. Huppler and V.L. Tarakanova**. Med. Col. of Wisconsin and Blood Res. Inst.

P1617 **75.4** IL-33 promotes antiviral immunity and protects against congenital Zika disease in mice. **Y. Liang, J. Escano and J. Sun**. Univ. of Texas Med. Br.

P1629 **75.5** IL-36γ regulates neutrophil infiltration and limits neuroinvasion in genital HSV-2 pathogenesis. **J.K. Gardner and M.M. Herbst-Kralovetz**. Univ. of Arizona.

P1633 **75.6** Cell type-specific sensing of murine cytomegalovirus through MyD88 and STING control virus infection. **S.J. Piersma, J. Poursine-Laurent, L. Yang, B.A. Parikh and W.M. Yokoyama**. Washington Univ. in St. Louis and Washington Univ. in St. Louis.

P1624 **75.7** The innate signaling adaptor MAVS regulates the quality of the antibody response to West Nile virus. **D. Schenten, M. O'Ketch, C. Larson and B. Hall**. Univ. of Arizona.

P1630 **75.8** IFN-I blockade improves the immunogenicity of viral vector vaccines. **N.M. Palacio, T. Dangui, Y. Wang and P.A. Penaloza-MacMaster**. Feinberg Sch. of Med., Northwestern Univ. and Northwestern Univ.

P1626 **75.9** Not just acute: IRF-7 plays a key role in restriction of chronic gammaherpesvirus infection. **K.E. Johnson, C.N. Jondle, P.T. Lange, C.A. Aurubin and V.L. Tarakanova**. Med. Col. of Wisconsin.

P1616 **75.10** A high throughput genetic screen to uncover novel antiviral mechanisms of the interferon system. **S. Chattopadhyay, G. Subramanian, A. Glanz, K. Chawla, J. Gartland and B. Jay**. Univ. of Toledo.

P1621 **75.11** A comprehensive map of the human dendritic cell HIV-response transcriptional network. **J.S. Johnson, N. De Veaux, A.W. Rives, X. Lahaye, S.Y. Lucas, B. Pérot, M. Luka, L.M. Amon, A. Watters, A. Aderem, N. Manel, D.R. Littman, R. Bonneau and M.M. Ménager**. Univ. of Utah, Simons Fndn., INSERM U932, France, Ctr. for Infectious Dis. Res., INSERM UMR 1163, France and New York Univ. Sch. of Med.

P1631 **75.12** Profiling soluble immune checkpoint proteins in the peripheral blood and central nervous system of HIV patients. **Y. Xia, W. Li, J. Yang, G. Sun, J. Lan, X. Zheng and Q. Yu**. Indiana Univ. Sch. of Med. and Wenzhou Med. Univ.

P1615 **75.13** Severe fever with thrombocytopenia syndrome virus infection drives macrophage differentiation skewed to M2 phenotype which is regulated by miR-146. **I. zhang**. Nanjing Univ., China.

P1618 **75.14** Regulation of IL-37 and its signaling co-receptor IL-1R8 in HIV infection. **A. Ahmad, S. Samarani, A. Abulkhir and D. Amre**. Sainte-Justine Univ. Hosp., Canada.

P1622 **75.15** WITHDRAWN

P1628 **75.16** Regulation and perturbation of myocyte enhancer factor-2 activity in adult T-cell leukemia/lymphoma. **K.K. Madugula, C. DeMarino, A. Panfil, A. Dobzanki, R. Ginwala, Z. Khan, F. Kashanchi, I. Lemasson, P. Green, E. Harhaj and P. Jain**. Drexel Univ. Col. of Med., George Mason Univ., Ohio State Univ., East Carolina Univ. and Pennsylvania State Univ.

P1634 **75.17** HIV infection induces $CD44^{+}PD\text{-}L1^{+}$ tumor initiating cells in AIDS associated non-AIDS defining cancers. **H.B. Gupta, X. Zhang, T.J. Curiel and S. Kulkarni**. Univ. of Texas Hlth. Sci. Ctr. San Antonio and Texas Biomed. Res. Inst.

P1637 **75.18** Patrolling ILCs restrain mucosal viral replication through tissue-wide delivery of IFN-γ. **J.P. Shannon, G.V. Reynoso, O. Kamenyeva, D.T. McManus and H.D. Hickman**. NIAID, NIH.

P1619 **75.19** Robust local immune response to vaccination with a live-attenuated HSV-1 strain (HSV-1 0ΔNLS) is delayed in mice vaccinated with the parental live virus. **D.J.J. Carr and G. Gmyrek**. Univ. of Oklahoma Hlth. Sci. Ctr.

P1620 **75.20** Interferon-α producing dendritic cells impair viremia control in simian immunodeficiency virus-infected rhesus macaques. **E. Ko, S.H. Hait, M.A. Rahman, G. Enyindah-Asonye, C.J. Hogge, T. Hoang and M. Robert-Guroff**. NCI, NIH.

P1632 **75.21** Fibroblasts from individuals with trisomy 21 have increased type-I interferon responses to HSV-1 compared to typical adults. **K. Royzman, C. Drews, T. Maxwell, G. Singh, C. Keefe and S. James**. Regis Univ.

P1635 **75.22** Δ42PD-1 enhances HIV replication and suppresses maturation of dendritic cells. **R. Zhou, Y. Mo, D. Zhou and Z. Chen**. Univ. of Hong Kong.

P1636 **75.23** Serum IL-6 level may differentiate immune inactive phase from other phases in patients with chronic hepatitis B virus infection. **H.W. Lee, I.S. Oh, H.Y. Chang, J.I. Lee and J.S. Lee**. Yonsei Univ. Col. of Med., South Korea and Natl. Police Hosp.

P1638 **75.24** Innate immune responses to Rift Valley fever virus in the brain. **D.R. Weilhammer, F. Bourguet, K. Sanchez, A. Phillips, A. Sebastian and N. Hum**. Lawrence Livermore Natl. Lab.

P1639 **75.25** CD5+ B-1 cell responses to infection are facilitated by toll-like receptor stimulation. **F.L. Smith, H.P. Savage, K. Kläsener, M. Reth and N. Baumgarth**. Univ. of California, Davis, Max Planck Inst. for Immunobiology and Epigenetics, Germany and Univ. of Freiburg, Germany.

76. VIRUSES, $CD8^{+}$ T CELLS, AND NATURAL KILLERS

Poster Session

FRI. 2:30 PM—EXHIBIT/POSTER HALL

P1668 **76.1** Regulation of antiviral CD8 T cell immunity by CD352/SLAMF6: from patterns to pathways. **V. van der Heide and D. Homann**. Icahn Sch. of Med., Mount Sinai.

P1674 **76.2** Activation of microglia in CD8 T cell-initiated blood-brain barrier disruption induced during Theiler's virus infection. **R. Khadka, J. Zheng, K. Ayasoufi, F. Jin, Z. Trtiz, L. Wu and A. Johnson**. Mayo Clin., Grad. Sch. of Biomed. Sci.

P1663 **76.3** Cytomegalovirus infection drives avidity selection of natural killer cells. **N.M. Adams, D. Lumaquin, E.K. Santosa, B.M. Whitlock, B.T. Jackson, J.B. Le Luduec, R. Sottile, O.E. Weizman, M. Huse, K.C. Hsu and J.C. Sun**. Mem. Sloan Kettering Cancer Ctr.

P1664 **76.4** Single-cell cloning of untreated HIV-specific natural killer cells in humans. **O.A. Lucar, J. Ghofrani, P.A. Goepfert, S. Jost and R.K. Reeves**. Harvard Med. Sch. and Univ. of Alabama, Birmingham.

P1665 **76.5** The Ly49G2 inhibitory receptor is essential to MHC I-dependent NK cell control of murine cytomegalovirus infection. **J.M. Cronk, A. Gamache, A. Gillespie and M.G. Brown**. Univ. of Virginia.

P1671 **76.6** Accumulation of CXCR5+ NK cells during chronic SHIV infection is associated with enhanced viral control. **V. Velu, S.A. Rahman, J.M. Billingsley, C.C. Ibegbu, A. Shiferaw, F.J. Villinger, S. Bosinger, P. Johnson, R.R. Amara and V. Velu**. Emory Univ., Univ. of Louisiana Lafayette and Yerkes Primate Res. Ctr. and Emory Vaccine Ctr.

P1676 **76.7** LAG-3 modulation of natural killer cell immunoregulatory function. **A. Ali, M.T. Moran, J. Tuazon, I. Gyurova, D.A.A. Vignali and S.N. Waggoner**. Cincinnati Children's Hosp. Med. Ctr., Univ. of Cincinnati and Univ. of Pittsburgh Sch. of Med.

P1675 **76.8** IL-18 defines exclusive "memory-like" NK cell populations. **R.R. Anderko, C.R. Rinaldo and R.B. Mailliard**. Univ. of Pittsburgh Grad. Sch. of Publ. Hlth.

P1669 **76.9** MicroRNA-21 is a critical regulator of the antiviral NK cell response. **C. Geary, C. Lau, C. Zawislak, E.K. Santosa, M. Berrien-Elliott, N. Bezman, L.L. Lanier, T.A. Fehniger and Y.C-Y. Sun**. Mem. Sloan Kettering Cancer Ctr., Washington Univ. in St. Louis and Univ. of California, San Francisco.

P1673 **76.10** Dynamics of adaptive natural killer cells in longitudinal analysis of CMV vaccine recipients. **I.E. Gyurova, H. Schlums, D. Bernstein, Y. Bryceson and S.N. Waggoner**. Cincinnati Children's Hosp. Med. Ctr. and Karolinska Inst., Sweden.

P1677 **76.11** The epigenetic profile of CD8$^+$ T cells during SIV infection. **S.T. Pillay, M. Nag, J.E. Fogle and K. De Paris**. UNC-CH, NCI, NIH and North Carolina State Univ. Col. of Vet. Med.

P1667 **76.12** Crosseactivity of flaviviruses specific CD8+ T cell responses across different viral species. **A. Grifoni, H. Voic, J. Sidney, A.D. de Silva, A. Durbin, S.A. Diehl, E. Harris, A. Sette and D. Weiskopf**. La Jolla Inst. for Immunology, Johns Hopkins Univ. Bloomberg Sch. of Public Hlth., Univ. of Vermont, Sch. of Med. and Sch. of Public Hlth., Univ. of California, Berkeley.

P1670 **76.13** Diets rich in omega-3s decrease CD8 T cell 2-dimensional affinity and short-lived effector cell development and function during viral infection. **E.M. Kolawole and B.D. Evavold**. Univ. of Utah Sch. of Med.

P1678 **76.14** Quantifying the selection on influenza A virus imposed by CD8 T cells. **Z-R.T. Li, V.I. Zarnitsyna, A.C. Lowen, J.E. Kohlmeier and R. Antia**. Emory Univ. and Emory Univ. Sch. of Med.

P1672 **76.15** Spatial analysis of CD8$^+$ T cell activation after local viral replication in the skin. **C.S. Malo, G.V. Reynoso and H.D. Hickman**. NIAD, NIH.

P1662 **76.16** Patients with natural killer (NK) cell chronic active Epstein-Barr virus have a unique phenotype, with increased activation of the PI3K/Akt/mTOR and STAT1 pathways and immature NK cells. **KC. Dowdell**. NIAID, NIH.

P1666 **76.17** Protein kinase C-eta is dispensable for the activation and function of CD8$^+$T cells. **H.Y. Liu, C. Pedros, A.J. Canonigo-Balancio and A. Altman**. La Jolla Inst. for Immunology.

P1679 **76.18** Investigating the immunological role of galectin-9 on natural killer (NK) cells in human immunodeficiency virus (HIV). **M. Motamedi and S. Elahi**. Univ. of Alberta, Canada.

SATURDAY MORNING

MAY 11

77. MAJOR SYMPOSIUM C: ACUTE AND CHRONIC INFLAMMATION

Major Symposium

SAT. 8:00 AM—BALLROOM 20D

CHAIRS: *C. KEMPER, M.C. CARROLL*

8:00 An unexpected key role for the complosome in cell metabolism. **C. Kemper**. NHLBI, NIH.

8:35 Functional importance of allelic differences in human complement C4A and C4B and inflammatory disease. **M.C. Carroll**. Boston's Children's Hosp.

9:10 Non-canonical functions of complement in inflammatory diseases. **Jörg Köhl.** Univ. of Lübeck, Germany.

9:45 Pattern recognition receptor signalling in response to bacterial Infection. **C.E. Bryant.** Univ. of Cambridge, England.

10:20 Regulation of intestinal inflammation by NLRs and the gut microbiota. **G.Y. Chen**, Univ. of Michigan.

10:55 The how and why of lncRNA function during inflammation. **S. Carpenter**, Univ. of California, Santa Cruz.

78. MAJOR SYMPOSIUM D: STRUCTURAL AND CELLULAR ASPECTS OF INNATE LYMPHOCYTES

Major Symposium

SAT. 8:00 AM—BALLROOM 20BC

CHAIRS: *E.J. ADAMS, J. SUN.*

8:00 Molecular recognition by immune receptors. **E.J. Adams**. Univ. of Chicago.

8:42 Epigenetic and transcriptional control of innate lymphocytes. **J. Sun.** Mem. Sloan Kettering Cancer Ctr.

9:24 Structural anatomy of the T cell receptor complex: towards understanding of function. **L. Teyton.** Scripps Res. Inst.

10:06 Tuning the natural killer response. **C. Blish**. Stanford Univ.

10:48 Innate lymphocyte responses to viral infection. **M.A. Delgi-Esposti**. Univ. of Western Australia, Australia.

79. CHINESE SOCIETY OF IMMUNOLOGY, TAIWAN (CSIT) SYMPOSIUM: HOST DEFENSE AGAINST MICROBIAL INFECTION

Guest Society Symposium

SAT. 8:00 AM—ROOM 26AB

CHAIRS: *J. TING, S.-L. HSIEH*

8:00 Targeting siglec for immunotherapy against HBV infection. **S.-L. Hsieh**. Academia Sinica, Taiwan.

8:24 Cure chronic HBV infection via targeting adaptive immune response: a critical role of $CD4^+$ T cells. **M.-H. Tao.** Academia Sinica, Taiwan.

8:48 Biodegradable nanoparticle co-encapsulating peptides and CpG elicits protective T cell immunity against lethal influenza viral infection. **H.-C. Yang**. Natl. Taiwan Univ. Hosp.

9:12 New method for the development of glycoconjugate bacterial vaccines using bacteriophages. **C.-Y. Wu.** Academia Sinica, Taiwan.

9:36 MAP4K family kinases in T cell-mediated inflammation. **T.-H. Tan**. Natl. Hlth. Res. Inst., Taiwan.

80. BASIC AUTOIMMUNITY: T CELLS

Block Symposium

SAT. 8:00 AM—ROOM 32AB

CHAIRS: *Y-G. CHEN, A. PERL*

8:00 Biomarker discovery in pre-type 1 diabetes; Th40 cells as a predictive risk factor. **G. Vaitaitis, D. Waid and D.H. Wagner**. Univ. of Colorado Anschutz Med. Campus. **(115.4)**

8:15 Rab4A inactivation in T cells blocks mTOR activation, pro-inflammatory lineage development, and disease pathogenesis in lupus-prone mice. **N. Huang, B. Wyman, E. Cravo, T. Winans, G. Choudhary, Z. Oaks, M. Duarte, J. Lewis, Z-W. Lai, K. Banki and A. Perl**. State Univ. of New York Upstate Med. Univ. **(115.6)**

8:30 IL-23 is essential for the switching between Tfh-IFN-γ and Tfh-IL-17 in lupus. **H. Hong, Q. Wu, P. Yang, B. Luo, J. Li, H. Li, D.J. Cua, H-C. Hsu and J.D. Mountz**. Univ. of Alabama, Birmingham, St. John's Episcopal Hosp., Harvard Med. Sch. and Merck Res. Lab. **(115.1)**

8:45 One size does not fit all: SLAM-associated protein is dispensable for type 1 diabetes but required for autoantibody-mediated arthritis. **R. Bonami, L. Nyhoff, C. Hulbert, J. Felton, P.L. Kendall and J.W. Thomas**. Vanderbilt Univ. Med. Ctr. **(115.14)**

9:00 Pathogenic follicular CD8 T cells acquire diverse function during autoimmune disease. **K.M. Valentine, G.N. Mullins, T.J. Lawrence and K.K. Hoyer**. Univ. of California, Merced and Oak Ridge Natl. Lab. **(115.22)**

9:15 CNS-specific autoregulatory CD8 T cells rely on IFNγ signaling for optimal suppression of pathogenic CD4 T cell responses during inhibition of demyelinating disease. **A. Boyden, A.A. Brate, L.G. Laageide and N.J. Karandikar**. Univ. of Iowa Hlth. Care. **(115.9)**

9:30 NKG2D signaling within the pancreas decreases NOD diabetes by enhancing CD8+ central memory T cell formation. **M.A. Markiewicz, A.P. Trembath, N. Sharma and C.E. Mathews**. Univ. of Kansas Med. Ctr. and Univ. of Florida. **(115.16)**

9:45 Single-cell transcriptome analysis reveals diverse islet-infiltrating T cell subsets and a role for BATF in promoting the diabetogenic activity of CD8 T cells. **A.E. Ciecko, D.M. Schauder, B.M. Foda, C-W. Lin, W. Cui and Y-G. Chen**. Med. Col. of Wisconsin and Blood Res. Inst. **(115.20)**

81. MOLECULAR MECHANISMS OF HELPER T CELL DIFFERENTIATION

Block Symposium

SAT. 8:00 AM—ROOM 30CDE

CHAIRS: *M. KAPLAN, H. ZENG*

8:00 Reciprocal regulation of Th2 and Th17 cells by PAD2-mediated citrullination. **B. Sun, H-H. Chang, A. Salinger, B. Tomita, M. Bawadekar, M.A. Shelef, E. Weerapana, P.T. Thompson and I-C. Ho**. Brigham and Women's Hosp., Univ. of Massachusetts Med. Sch., Univ. of Wisconsin, Madison and Boston Col. **(124.2)**

8:15 Transcriptional regulation of IL-10 in T helper cells. **H. Zhang, A. Madi, N. Yosef, N. Chihara, A. Awasthi, C. Pot, L. Apetoh, A. Srivastava, C. Wang, A. Regev and V. Kuchroo**. Brigham and Women's Hosp., Harvard Med. Sch. and MIT and Harvard. **(124.14)**

8:30 Tbet provides survival advantage to Tregs during type 1 inflammation. **B. Akkaya, M. Akkaya, J.A. Al Souz, A.H. Holstein, M. Maz, J. Kabat, O. Kamenyeva and E.M. Shevach**. NIAID, NIH. **(124.8)**

8:45 Helios predisposes human fetal $CD4^+$ naive T cells toward regulatory T cell differentiation. **M. Ng, T. Roth, V. Mendoza, A. Marson and T. Burt**. Univ. of California, San Francisco. **(124.9)**

9:00 Batf promotes and stabilizes Th17 cell development by antagonizing the actions of STAT5. **D. Pham, D.J. Silberger, R.D. Hatton and C.T. Weaver**. Univ. of Alabama at Birmingham. **(124.10)**

9:15 Regulation of Tfh cell development through STAT1 signaling. **L. Qin, A. Sahoo, Y. Zhao, A. Alekseev and R.I. Nurieva**. Univ. of Texas MD Anderson Cancer Ctr. **(124.12)**

9:30 T-bet expression is fine-tuned for balancing IFN-γ-producing Th1 and Tfh cell differentiation and IgG2a(c) production. **D. Fang, M. Zheng, K. Mao, S.L. Reiner, A. Sher and J. Zhu**. NIAID, NIH and Columbia Univ. Med. Ctr. **(124.13)**

REMINDER

82. CELLULAR MECHANISMS OF INNATE IMMUNITY II

Block Symposium

SAT. 8:00 AM—ROOM 31ABC

CHAIRS: *C. SOKOL, R. SINGH*

8:00 Epithelial versus myeloid-derived IL-33 controls different aspects of pathogen-specific immunity. **D.R. Herbert, K. Herbine, L-Y. Hung, C. Pastore, B. Singh, Y. Tanaka, P.J. Bryce and T. Kambayashi**. Univ. of Pennsylvania, Univ. of Pennsylvania Sch. of Vet. Med. and Feinberg Sch. of Med., Northwestern Univ. **(126.1)**

8:15 Basophil-derived tumor necrosis factor can enhance immune responses in a sepsis model in mice. **A.M. Piliponsky, AJ. Shubin, A. Lahiri, P. Truong, M. Clauson, K. Niino, A. Tsuha, SA. Nedospasov, H. Karasuyama, L. Reber, MM. Tsai, K. Mukai and S.J. Galli**. Seattle Children's Res. Inst., Russian Acad. of Sci., Tokyo Med. and Dent. Univ., Japan and Stanford Univ. Sch. of Med. **(126.2)**

8:30 Maternal EGF limits bacterial translocation in the offspring: a model of enterally acquired late onset sepsis. **K.A. Knoop, P. Coughlin, A. Floyd, C. Hall-Moore, M. Ndao, B. Warner, P. Tarr and R. Newberry**. Washington Univ. Sch. of Med. **(126.3)**

8:45 Unique innate functions of fetal macrophage populations. **L.S. Prince, O. Lakhdari and K. Anderson**. Univ. of California, San Diego, and Rady Children's Hosp., San Diego. **(126.4)**

9:00 Microglial antigen presentation is required for antigen-specific CD8 T cell infiltration to the brain parenchyma following CNS viral challenge. **E. Goddery, C. Malo, F. Jin, M. Hansen, J. Fryer, K. Pavelko and A. Johnson**. Mayo Clin. Grad. Sch. of Biomed. Sci., NIAID, NIH, Mayo Clin., Rochester and Mayo Clin., Jacksonville. **(126.5)**

9:15 Analysis of mGBPs in host defense against the obligate parasite *Toxoplasma gondii*. **N. Steffens, L. Legewie, C. Beuter-Gunia, P. Hanisch, S. Weidtkamp-Peters, S. Hänsch, D. Degrandi and K. Pfeffer**. Heinrich-Heine University, Duesseldorf, Germany and Heinrich-Heine Univ., Duesseldorf, Germany. **(126.6)**

9:30 Repeated malaria exposures associate with skewing of monocytes/macrophages toward a regulatory phenotype. **R. Guha, G. Arora, S. Li, D. Doumtabe, O.k Doumbo, S. Doumbo, K. Kayentao, A. Ongoiba, B. Traore and P.D. Crompton**. NIAID, NIH, LIG, NIAID, NIH and Univ. of Sci., Techniques and Technologies of Bamako, Mali. **(126.7)**

9:45 Differential effects of glycerophospholipids versus glycosphingolipids on dendritic cell subsets. **R.R.aj Singh and R. Halder**. David Geffen Sch. of Med., Univ. of California, Los Angeles. **(126.8)**

83. IMMUNE DEVELOPMENT AT MUCOSAL SITES

Block Symposium

SAT. 8:00 AM—ROOM 33ABC

CHAIRS: *R. O'CONNELL, K. MICHELSEN*

8:00 Absence of conventional dendritic cells type 1 impairs intestinal homeostasis and permeability and leads to the development of obesity. **H. Hamade, J.T. Stamps, L.S. Thomas, D. Stamps, Y. Shimodaira and K.S. Michelsen**. Cedars-Sinai Med. Ctr., Los Angeles. **(129.6)**

8:15 Tissue driven influences on human NK cell development, function and residence. **P. Dogra, C. Rancan, W. Ma, M. Toth, T. Senda, D.J. Carpenter, P. Thapa, P.A. Szabo, Y. Shen, L. Fong, L.L. Lanier and D.L. Farber**. Columbia Univ. Med. Ctr., Univ. of California, San Francisco and Univ. of Debrecen, Hungary. **(129.8)**

8:30 Indiscriminate nature of lung resident $CD8^+$ T_{RM} cells reactivation and their varied reactivation profiles. **J.S. Low, C. Amezcua, E. Sefik, C.C.D. Harman, R. Jackson, X. Jiang, J.B. Kelly, L.S. Cauley, R.A. Flavell and S. Kaech**. Yale Univ. Sch. of Med., Stony Brook Univ., Univ. of Connecticut and The Salk Inst. **(129.9)**

8:45 Memory B cell recruitment to the vaginal mucosa is required for luminal antibody secretion. **J.E. Oh, N. Iijima and A. Iwasaki**. Yale Univ. Sch. of Med. **(129.16)**

9:00 Intestinal goblet cells and goblet cell-associated antigen passages regulate the balance between Tregs and Th17. **D.H. Kulkarni, J. Gustafsson, J. Davis, K. McDonald, C. Hsieh and R.D. Newberry**. Washington Univ., St. Louis. **(129.17)**

9:15 The skin: a site of extralymphoid IgM production. **S.E. McGettigan, R.P. Wilson, V.D. Dang, A. Kumar, N. Nikbakht, W. Stohl and G.F. Debes**. Thomas Jefferson Univ., Univ. of Pennsylvania and Univ. of Southern California. **(129.5)**

9:30 Adventitial stromal cells define group 2 innate lymphoid cell tissue niches. **A.B. Molofsky, M.W. Dahlgren, S.W. Jones, A. Dubinin, S. Farhat, J.F. Ortiz-Carpena, K.S. Yu, K. Lee, C. Wang, A.V. R. Molofsky, A.D. Tward, M.F. Krummel and T. Peng**. Univ. of California, San Francisco. **(129.1)**

9:45 Dissecting the tissue-specific mechanisms that support the maintenance of intestinal regulatory T cells. **E. Cruz Morales, A.P. Hart and T.M. Laufer**. Univ. of Pennsylvania. **(129.4)**

84. TECHNOLOGICAL INNOVATIONS II

Block Symposium

SAT. 8:00 AM—ROOM 30AB

CHAIRS: *L. STERN, N.G. SGOURAKIS*

8:00 Buoyant microbubbles as alternatives or adjuncts to magnetic bead methods for high-purity cell isolation. **J.G. Younger, J. Roussey, J. Bao, N. Petlakh Co, T. Jones and L. Ostruszka**. Akadeum Life Sci. **(131.1)**

8:15 A robust human immunophenotyping workflow using CyTOF technology coupled with Maxpar Pathsetter, an automated data analysis software. **S.K.H. Li, D. Majonis, C.B. Bagwell, B.C. Hunsberger, V. Baranov and O. Ornatsky**. Fluidigm, Canada and Verity Software House. **(131.2)**

8:30 Integration of multi-omics data from re-wilded laboratory mice to identify key parameters that determine immune heterogeneity and activation. **J-D. Lin, F. Yeung, C. Devlin, Y-H. Chen, C. Mccauley, A. Cronkite, J.M. Leung, A.L. Graham, K.H. Cadwell and P. Loke**. NYU Med. Ctr., Univ. of Central Florida Col. of Med. and Princeton Univ. **(131.3)**

8:45 Scalable and comprehensive characterization of antigen-specific CD8 T cells using multi-omics single cell analysis. **S.C. Boutet, D. Walter, M.J. T. Stubbington, K.A. Pfeiffer, J.Y. Lee, S.E. B. Taylor, L. Montesclaros, J.K. Lau, D.P. Riordan, A.M. Barrio, L. Brix, K. Jacobsen, B. Yeung, X. Zhao and T.S. Mikkelsen**. 10x Genomics, Immudex, Denmark and BioLegend, Inc. **(131.4)**

9:00 Immunophenotyping extracellular vesicles using the CellStream flow cytometer. **H.R. Pugsley, B.R. Davidson and P. Morrissey**. Luminex Corp. **(131.5)**

9:15 A novel method for high throughput TCR single cell VDJ-pairing with phenotypic analysis. **M. Byrne-Steele, W. Pan, B.E. Brown, X. Hou, M. Depinet, M. Eisenhower, D. Weber and J. Han**. iRepertoire. **(131.6)**

9:30 Development of high-throughput methods used to identify and characterize novel interactions within the human secretome with focus on the Ig and TNF receptor superfamilies. **S.C. Garrett-Thomson and S. Almo**. Albert Einstein Col. of Med. **(131.8)**

9:45 Developing a novel multiplexed high throughput flow cytometry based immune assay to screen kinase modulators of primary T cell activation. **J. O`Rourke, A. Gomez-Donart, C. Weldon and Z. Liu**. Essen Biosciences. **(131.7)**

85. NEW TREATMENTS FOR AUTOIMMUNE ARTHRITIS AND SKIN DISEASE

Block Symposium

SAT. 8:00 AM—ROOM 29ABCD

CHAIRS: *S.G. ZHENG, G. RANDOLPH*

8:00 Human gingival tissue-derived MSC suppress osteoclastogenesis and bone erosion via CD39-adnosine signal pathway in autoimmune arthritis. **S.G. Zheng, Y. Luo and J. Wang**. Penn State Col. of Med. **(133.1)**

8:15 Development of citrullinated-vimentin-specific CAR for targeting Tregs to treat autoimmune rheumatoid arthritis. **C. Raffin, Y. Muller, J. Barragan, Y. Zhou, L. Piccoli, A. Lanzavecchia, S.U. Tareen, J.D. Fontenot and J.A. Bluestone**. Univ. of California, San Francisco, IRB Barcelona, Spain, Inst. for Res. in Biomed., Switzerland and Juno Therapeutics. **(133.2)**

8:30 Identification of potent RORc inhibitors for the treatment of IL-17-mediated inflammatory diseases: is it worth the risk? **C. Everett, J. Zbieg, O. Rene, S. Rutz, W. Lee, S. Laing, J. Zhang, A. Johnson, N. Ghilardi, J. Crawford and C. Eidenschenk**. Genentech, Inc. and Novartis Institutes of Biomed. Res. **(133.3)**

8:45 Therapeutic vaccination by two DerG LEAPS conjugates incorporating different PG (aggrecan) epitopes protect by different immune mechanisms in the PG G1 domain induced mouse model of rheumatoid arthritis. **D.H. Zimmerman, K. Mikecz, K.S. Rosenthal, A. Markovics, R. Carambula, J. Ciemielewski and T. Glant**. CEL-SCI Corporation, Rush Univ. Med. Ctr. and Roseman Univ. of Hlth. Sci. **(133.4)**

9:00 N-acetylcysteine reduces reactive oxygen species and pro-inflammatory cytokine production in HLA-B27-positive macrophages and shapes them towards a quiescent metabolic state. **F. Navid, B. Nguyen, A. Cougnoux, P-C. Violet, M. Levine and R.A. Colbert**. NIAMS, NIH, NICHD, NIH and NIDDK, NIH. **(133.11)**

9:15 Interleukin-17 drives interstitial entrapment of tissue lipoproteins in experimental psoriasis. **P. Huang, B. Zinselmeyer, B.T. Saunders, M.A. Swartz, B.S. Kim and G.J. Randolph**. Washington Univ. Sch. of Med. and Univ. of Chicago. **(133.5)**

9:30 Targeting chemokine receptors CCR6 and CXCR2 in a murine model of IL-36a-induced pustular psoriasis. **J.J. Campbell, K. Ebsworth, L. Ertl, J.P. McMahon, Y. Wang, S. Yau, V.R. Mali, V. Chhina, A. Kumamoto, S. Liu, T. Dang, D. Newland, I.F. Charo, P. Zhang, T.J. Schall and R. Singh**. ChemoCentryx, Inc. **(133.7)**

9:45 Restraining neuroinflammation during antigen delivery as an immunosuppressive approach to prevent and treat contact dermatitis. **M. Bandyopadhyay, A.E. Morelli, G. Erdos, T.L. Sumpter, O.A. Tkacheva, W.J. Shufesky, L.D. Falo and A.T. Larregina**. Univ. of Pittsburgh Sch. of Med. **(133.6)**

86. VIRUSES AND THE T CELL RESPONSE

Block Symposium

SAT. 8:00 AM—ROOM 25ABC

CHAIRS: *A. AUGUST, T. WATTS*

8:00 ITK regulates antigen-specific CD8$^+$ T cell-derived IL-10 production and modulates influenza-induced pulmonary immunopathology. **W. Huang, S. Solouki and A. August**. Sch. of Vet. Med., Louisiana State Univ. and Col. of Vet. Med., Cornell Univ. **(140.1)**

8:15 Single-cell transcriptomics identifies TOX as a key transcriptional regulator of stem-like CD8 T cells in chronic infection. **T. Wu, C. Yao, H. Sun, N. Lacey, L. Gattinoni, D.B. McGavern, J.J. O'Shea and P.L. Schwartzberg**. NIAID, NIH, NIAMS, NIH, NCI, NIH and NINDS, NIH. **(140.2)**

8:30 Herpesvirus entry mediator promotes Th1 responses in the cornea during ocular HSV-1 infection. **S.J. Park, R. Riccio, S. Kopp and R. Longnecker**. Feinberg Sch. of Med., Northwestern Univ. **(140.3)**

8:45 Cytotoxic CD4 T cells control host immunity during viral persistence. **N. Thiault, M. Husain, A. Chen, G. Verstichel, A. Larange, V. Shivagouda Patil, P. Vijayanand, M. Kronenberg and H. Cheroutre**. La Jolla Inst. for Immunology. **(140.4)**

9:00 Monocytes and macrophages limit systemic infection and modulate the CD4 T cell response during Zika virus infection in mice. **Y-T. Wang, S. Hattakam, M.P. Young, J.A. Regla-Nava and S. Shresta**. La Jolla Inst. for Immunology. **(140.5)**

9:15 PSGL-1 is a negative regulator of effector and memory T cells. **R. Tinoco and L.M. Bradley**. Univ. of California, Irvine and Sanford Burnham Prebys Med. Discovery Inst. **(140.6)**

9:30 The role of mTOR, TRAF1, and local antigen in 4-1BB-dependent establishment of T_{rm} in the lung. **N.V. Batista, A.C. Zhou and T.H. Watts**. Univ. of Toronto, Canada. **(140.7)**

9:45 The pleiotropic effects of *PTPN22* and its pro-autoimmune alternative allele on the anti-viral immune response and T cell exhaustion. **R.C. Orozco, K. Marquardt, K.A. Mowen, I. Pratumchai, J.R. Teijaro and L.A. Sherman**. Scripps Res. Inst. **(140.8)**

87. NIH GRANT REVIEW AND FUNDING INFORMATION ROOM

Career Development Session

SAT. 9:30 AM (ALL DAY)—ROOM 21

NIH program and review staff will be available for individual conversations and consultations. Staff members will answer questions about the scientific review process, grant/fellowship opportunities, and NIH Institute specific interests. Consultations will be available on a drop-in basis. No appointments are necessary.

88. FOSTERING DIVERSITY AND PREVENTING HARASSMENT IN THE BIOMEDICAL RESEARCH WORKFORCE

Committee-Sponsored Session

Sponsored by the AAI Committee on Public Affairs, the AAI Minority Affairs Committee, and the AAI Committee on the Status of Women

SAT. 10:15 AM—ROOM 33ABC

CHAIRS: *D.D. CHAPLIN, R.J. BINDER, L.A. SOLT*

AAI believes that science thrives when all scientists thrive. And while the current biomedical research workforce is more diverse and welcoming than ever before, it is insufficiently diverse—and all too often unwelcoming—to female and underrepresented minority scientists. Both the federal government through its Government Accountability Office (GAO), and the National Academies of Sciences, Engineering, and Medicine (NASEM), have recently spoken out on these concerns. An August 2018 GAO report examines progress that the NIH has made in increasing the diversity of the biomedical research workforce and challenges NIH to do more. And a June 2018 NASEM report, entitled "Sexual Harassment of Women, Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine," describes continuing "biases and barriers," including sexual harassment, that are faced by women scientists, and recommends ways to combat the problem.

This session will explore NIH actions to strengthen the diversity of the biomedical research workforce and address recommendations highlighted by the GAO report. It will also focus on the NASEM report, and delve into a key finding: "Diverse, inclusive, and respectful academic environments are environments where careers flourish, but sexual harassment does not."

10:15 Introduction, **D.D. Chaplin**, Univ. of Alabama at Birmingham

SPEAKERS:

- Sexual harassment in academia: the NASEM report and recommendations. **E.L. Hillman**, Mills Col.
- NIH's scientific approach to inclusive excellence. **H.A. Valantine**. NIH.
- What can academic institutions do to address diversity and inclusion? **A. August.** Cornell Univ.

89. INTERVIEWING FOR A JOB

Career Development Session

SAT. 10:15 AM—ROOM 32AB

CHAIR: *M.T. LITZINGER*

This session will be focused on tips and techniques to help you successfully navigate the interview process. Emphasis will be on how you can present yourself in the best possible light. You will also learn how to respond to unexpected questions. This session is open to anyone but is especially intended for student and postdoctoral attendees.

10:15 Introduction. **M.T. Litzinger**. AAI.
10:20 Interviewing for a Job. **D. Haseltine.** Baylor Col. of Med.

90. NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES (NIEHS) SYMPOSIUM: THE MISSING LINK: OUR ENVIRONMENT AND IMMUNE MEDIATED DISEASES

NIH-Sponsored Session

SAT. 10:15 AM—ROOM 25ABC

CHAIRS: *M.C. HUMBLE, C. BEAMER*

10:15 Involvement of ahR in thymic ILC function and regulation. **C. Beamer.** Univ. of Montana.
10:45 Regulation of cellular energetics by the aryl hydrocarbon receptor during hematopoiesis. **M. Laiosa.** Univ. of Wisconsin, Milwaukee.
11:15 Aryl hydrocarbon receptor on $CD4^+$ T cell differentiation and autoimmune disease. **S. McKarns.** Univ. of Missouri, Columbia.
11:45 The AHR as a driver of cancer and immunosuppression. **D. Sheer.** Boston Univ.

91. KOREAN ASSOCIATION OF IMMUNOLOGISTS (KAI) AND ASSOCIATION OF KOREAN IMMUNOLOGISTS IN AMERICA (AKIA) SYMPOSIUM: HOST AND MICROBIAL FACTORS SHAPING ADAPTIVE IMMUNITY

Guest Society Symposium

SAT. 10:15 AM—ROOM 26AB

CHAIRS: *A. YI, E.-C. SHIN*

10:15 Characteristics and regulation of human liver resident T cells. **E.-C. Shin**. Korea Adv. Inst. of Sci. and Technol., Korea.
10:45 The role of cytokine receptors in defining human T cell subsets. **I. Kang.** Yale Univ.
11:15 Regulation of T cell metabolism by promyelocytic leukemic zinc finger (PLZF). **C.-H. Chang**. Univ. of Michigan, Ann Arbor.
11:45 Proinsulin shares a motif with IL-1a and induces inflammatory cytokine via IL-1R1. **S. Kim.** Konkuk Univ., Korea.

92. I'M ON FIRE: LOCAL CONTROL OF TISSUE INFLAMMATION

Block Symposium

SAT. 10:15 AM—ROOM 30AB

CHAIRS: *S.C. MORLEY, J. NOLZ*

10:15 Neuroinflammation functionally regulates CNS lymphatic vasculature and drainage. **M. Hsu, A. Rayasam, J.A. Kijak, Y.H. Choi, J.S. Harding, S.A. Marcus, W.J. Karpus, M. Sandor and Z. Fabry**. Univ. of Wisconsin, Madison, Univ. of California, San Francisco and Mount Sinai Hosp., Toronto, Canada. **(117.13)**

10:30 Peripherally induced tissue resident memory CD8 T cells in the brain mediate protection against CNS infections. **S.L. Urban, I.J. Jensen, L.L. Pewe, V.P. Badovinac and J.T. Harty**. Univ. of Iowa Carver Col. of Med. **(117.4)**

10:45 Targeted expansion of tissue-resident $CD8^+$ T cells to boost cellular immunity in the skin. **S.J. Hobbs and J.C. Nolz**. Oregon Hlth. and Sci. Univ. **(117.16)**

11:00 Type 1 alveolar epithelial cell-derived chemokine CCL19 promotes airway inflammation. **H. Nakano, M. Lyons-Cohen, K. Nakano, T. Karcz, S.Y. Thomas, G. Whitehead and D.N. Cook**. NIEHS, NIH. **(117.1)**

11:15 Inflammasome activation in macrophages is regulated by actin-bundling protein L-plastin. **H. Joshi, B.E. Todd, T. Szasz, E. Anaya and S.C. Morley**. Washington Univ. Sch. of Med. **(117.14)**

11:30 EGF-like repeats and discoidin I-like domain 3 deficiency improves post-myocardial infarction healing via neutrophil extracellular traps mediated pro-inflammatory macrophage polarization. **X. Wei, C. Zhang, Z. Xie, X. Teng, Z. Wang, H. Zheng, S. Zou, N. Huang, K. Cui and J. Li**. West China Hosp., Sichuan Univ., China and Univ. of Michigan, Ann Arbor. **(117.9)**

11:45 The impact of the TRPM2 ion channel on inflammation and macrophage metabolism in gastrointestinal models. **H.M.S. Algood, B.R.E.A. Dixon, D. Olivares-Villagomez, C.H. Serezani, M.K. Washington, J.C. Rathmell and L.A. Coburn**. Vanderbilt Univ. Med. Ctr. **(117.20)**

12:00 Choline acetyltransferase-expressing T cells are required to control chronic viral infection. **M.A. Cox and T. Mak**. Princess Margaret Cancer Ctr. **(117.17)**

93. EPIGENETIC AND METABOLIC REGULATION OF IMMUNITY

Block Symposium

SAT. 10:15 AM—ROOM 31ABC

CHAIRS: *P. KING, W.K.E. IP*

10:15 Choline uptake and metabolism modulate macrophage immunity. **E. Sanchez-Lopez, Z. Zhong, A. Stubelius, S.R. Sweeney, L. Booshehri, L. Antonucci, R. Liu-Bryan, A. Lodi, R. Terkeltaub, J.C. Lacal, A.N. Murphy, H.M. Hoffman, S. Tiziani, M. Guma and M. Karin**. Univ. of California, San Diego Sch. of Med., Univ. of Texas Southwestern Med. Ctr., Univ. of Texas, Austin and Hosp. Univ. Fuenlabrada, Spain. **(125.1)**

10:30 Chromatin interaction maps of active cis-regulatory elements in primary human immune cells reveal extensive overlap with disease-associated genetic variants. **V. Chandra, S. Bhattacharyya, B.J. Schmiedel, A. Madrigal, F. Ay and P. Vijayanand**. La Jolla Inst. for Immunology. **(125.4)**

10:45 CTCF is necessary for $CD8^+$ effector T cell differentiation. **S.J. Quon, B. Yu, Z. He, B. Russ, S.J. Turner, C. Murre and A.W. Goldrath**. Univ. of California, San Diego and Univ. of Melbourne, Australia. **(125.6)**

11:00 Regulation of T cell activation and pathogenicity by dimeric pyruvate kinase M2. **S. Angiari, C. Sutton, M.C. Runtsch, E.M. Palsson-McDermott, K.H. G. Mills and L.A.J. O'Neill**. Trinity Col. Dublin, Ireland. **(125.11)**

11:15 IL-33 induces a metabolic programming supporting dendritic cells tolerogenicity. **M. Velayutham, A.S. Roessing, S. Shiva and H.R. Turnquist**. Univ. of Pittsburgh Sch. of Med. **(125.12)**

11:30 Macropinocytosis of amino acids regulates T cell growth by promoting the sustained activation of mTORC1. **J. Charpentier, P.E. Lapinski, J. Turner, I. Grigorova, J.A. Swanson and P.D. King**. Univ. of Michigan Med. Sch. **(125.14)**

11:45 A "sweet spot" for complement receptor CD46 activity via direct regulation of glycolytic vs. moonlighting functions of GAPDH. **N. Kunz, G. Le Friec, P. Singh, P. Lavender, M. Kazemian, C. Hess and C. Kemper**. NHLBI, NIH, Sch. of Immunology and Microbial Sci., King's Col. London, United Kingdom, Purdue Univ. and Univ. of Basel, Switzerland. **(125.15)**

12:00 Co-stimulation–induced AP-1 activity is required for chromatin opening during T cell activation. **A. Barski, M. Yukawa, S. Jagannathan, A.V. Kartashov, X. Chen and M.T. Weirauch**. Cincinnati Children's Hosp. Med. Ctr. **(125.13)**

94. INNATE AND ADAPTIVE CONTROL OF ALLOGRAFT REJECTION

Block Symposium

SAT. 10:15 AM—ROOM 30CDE

CHAIRS: *A. WELLS, X. LUO*

10:15 Inducible nitric oxide synthase-mediated inhibition of T cell receptor signaling is a mechanism for eosinophil dependent amelioration of alloimmunity in lung grafts. **O.O. Onyema, Y. Guo, B. Mahgoub, A. Manafi, S. Criswell, J. Lannigan, E.A. Jacobsen, A.E. Gelman, D. Kreisel and A.S. Krupnick**. Univ. of Virginia, Mayo Clin. and Washington Univ., St. Louis. **(69.9)**

10:30 Type-1 interferons impair the immunoregulatory activity of IL-10: understanding novel mechanisms of abrogation of transplant tolerance. **M. Iglesias Lozano, D. Bibicheff, M. Chicco, G. Brandacher and G. Raimondi**. Johns Hopkins Univ. Sch. of Med. **(69.33)**

10:45 IL-1β and IL-6 facilitate T cell reconstitution in heart allograft recipients treated with anti-thymocyte globulin. **S. Hasgur, R. Fan, D. Zwick and A. Valujskikh**. Cleveland Clin. **(69.29)**

11:00 Alloreactive B cells acquire suppressive function in recipients tolerant to allografts. **S. Khiew, D. Yin, D. Jain, Q. Wang, M-L. Alegre and A.S.F. Chong**. Univ. of Chicago. **(69.12)**

11:15 Kidney allograft recipient absence of myeloperoxidase decreases donor-specific antibody titers and attenuates antibody-mediated allograft rejection. **R.L. Fairchild, S. Miyairi, N. Dvorina, A. Valujskikh and W.M. Baldwin**. Cleveland Clin. **(69.14)**

11:30 Foxp3 cooperates with Ikaros to control the suppressive function of regulatory T cells. **R.M. Thomas, L. Wang, C. Chen, W.W. Hancock and A.D. Wells**. Children's Hosp. of Philadelphia. **(69.23)**

11:45 Inhibition of the Cullin RING E3 ubiquitin ligase by MLN4924 targets DEPTOR degradation in Tregs to enhance their stability and functional activity. **J. Wedel, K. Liu and D.M. Briscoe**. Boston Children's Hosp. **(69.13)**

12:00 Bcl-2 inhibition with venetoclax promotes induction of mixed chimerism and renal allograft tolerance without severe myelosuppression in non-human primates. **T. Kawai, H. Sasaki, D. Ma, A. Dehnadi, A.B. Cosimi, P. Cippa and T. Fehr**. Massachusetts Gen. Hosp. and Univ. of Zurich, Switzerland. **(69.8)**

95. MACROPHAGES AND MYELOID AND DENDRITIC CELLS IN TUMOR IMMUNITY AND IMMUNOTHERAPY

Block Symposium

SAT. 10:15 AM—ROOM 29ABCD

CHAIRS: *S. CASCIO, R. YOUNIS*

10:15 Paradoxical pro-tumor functions of dendritic cells on colorectal cancer. **H-I. Huang and G. Hammer**. Duke Univ. **(135.1)**

10:30 The role of neutrophil extracellular traps in nonalcoholic steatohepatitis-associated hepatocellular carcinoma. **H. Zhang, D.J. van der Windt, J. Ren, A. Tsung and H. Huang**. Ohio State Univ., Wexner Med. Ctr. and Univ. of Pittsburgh Med. Ctr. **(135.2)**

10:45 Non-small cell lung cancer tumor microenvironment induces arginase1 in neutrophils via the toll-like receptor 2 signaling pathway. **H. Zhang, J. Kargl, X. Zhu, X. Wang, J. Cao and A.M. Houghton**. Fred Hutchinson Cancer Res. Ctr. and Med. Univ. of Graz, Austria. **(135.3)**

11:00 Single cell RNA sequencing reveals distinct gene expression signatures of myeloid-derived suppressor cells in breast cancer. **H. Alshetaiwi, N. Pervolarakis, L.L. McIntyre, D. Ma, Q. Nguyen, K. Nee, J. Rath, K. Evans, L. Torosian, A. Silva, C. Walsh and K. Kessenbrock**. Univ. of California, Irvine, Sch. of Med., Univ. of California, Irvine, Sch. of Bio. and Univ. of California, Irvine, Sch. of Hlth. and Pharmaceutical Sci. **(135.4)**

11:15 The cross-talk between infiltrating macrophages and inflamed or malignant colonic epithelium promotes overexpression of ST6GALNAC1 and epithelial MUC1 tumor form MUC1-sTn. **S. Cascio, M. Kvorjak, Y. Ahmed, M. Miller, J. Al Hashash, D. Hartman, N. Miskov-Zivanov, C. Telmer and O.J. Finn**. Univ. of Pittsburgh Sch. of Med. and Carnegie Mellon Univ. **(135.5)**

11:30 The fate of leukemia-specific $CD8^+$ T cell clones is dictated by antigen specificity and the mechanism of cognate antigen presentation. **X. Chen, B. Flood, B. MacNabb, B.R. Blazar and J. Kline**. Univ. of Chicago and Univ. of Minnesota. **(135.6)**

11:45 Tumor-derived retinoic acid promotes immune suppression in sarcoma. **S. Devalaraja, T. To, I. Folkert, M. Li, Y. Tada and M. Haldar**. Perelman Sch. of Med., Univ. of Pennsylvania. **(135.7)**

12:00 ST8Sia6 overexpression accelerates tumor growth, alters macrophage polarization and the immune response. **D.J. Friedman, M. Shapiro, M. Rajcula, S. McCue and V. Smith Shapiro**. Mayo Clin. Grad. Sch. of Biomed. Sci. **(135.8)**

SATURDAY AFTERNOON

MAY 11

96. AAI-BIOLEGEND HERZENBERG AWARD PRESENTATION AND LECTURE

The AAI-BioLegend Herzenberg Award recognizes outstanding research contributions to the field of immunology in the area of B cell biology.

Awards Lecture

Generously supported by BioLegend

SAT. 12:30 PM—ROOM 25ABC

CHAIR: *J.L. FLYNN*

Recipient: **F.W. Alt.** HHMI, Boston Children's Hosp.

12:30 Introduction and Award Presentation. **J.L. Flynn**. Univ. of Pittsburgh Sch. of Med., AAI President; and **L. Herzenberg**. Stanford Univ. Sch. of Med.

12:35 The fundamental role of chromatin loop extrusion in antibody diversification. **F.W. Alt.** HHMI, Boston Children's Hosp.

97. CAREERS IN SCIENCE ROUNDTABLE

Career Development Session

Sponsored by the AAI Education Committee and the AAI Committee on the Status of Women

SAT. 12:30 PM—BALLROOM 20A

CHAIR: *L.A. SOLT*

Registration Fee: $30 (*includes lunch*). At this popular session, attendees will have the opportunity to meet with experienced scientists to explore specific career issues important to men and women in science today. Gain insights into issues you are confronting in your own career. Topics include international opportunities in science, succeeding in graduate school, participating in NIH Study Sections, considerations for scientists in M.D.-Ph.D. careers, and exciting careers beyond the bench. New to the 2019 session are topics on balancing teaching and research and careers in veterinary immunology. There are also table discussions on navigating work-life issues, such as balancing careers with family and transitioning from specific career stages, which may be relevant to any work environment (academic research, biotech industry, governmental agencies, non-profit). Don't miss this great networking opportunity!

Discussion Topics:

Research Careers in Academia
- Succeeding in Graduate School
- Postdoc to PI
  - Government Research Institutions
  - Medical Schools
  - Undergraduate Institutions
- New PI
  - Recruiting Students and Postdocs
  - Preparing for Promotion
  - Tips for Balancing Teaching and Research
- Negotiating an Academic Position
- Mentoring Effectively
- How to Build a Network for Postdocs
- Networking Skills for PIs

Work / Life Balance

Careers in Veterinary Immunology

Careers in Biotech and Industry: moving from academia to industry and vice versa

Careers at Government Agencies

NIH Study Section Insights
- Grant Writing for Fellowships/Transition Awards
- Grant Writing for PIs

The Physician Scientist: balancing clinical and research duties

Research from the M.D.-Ph.D. Perspective

Non-Research Careers for Scientists: careers enabling scientists to advance the field away from the bench
- Scientific Publishing
- Opportunities for Scientists in Foundations/Non-profits
- Careers in Science Policy
- Technology Transfer

International Opportunities in Science

98. HOW TO GET YOUR SCIENCE PUBLISHED: TIPS ON NAVIGATING THE PROCESS

Committee-Sponsored Session

Sponsored by the AAI Publications Committee

SAT. 12:30 PM—ROOM 33ABC

CHAIRS: *B.D. EVAVOLD, E.M. OLTZ*

In this session sponsored by the AAI Publications Committee, experienced editors and authors will provide valuable insights to the processes of preparing a manuscript, responding to reviewers' comments, and how to avoid possible ethical missteps in scientific publishing. In addition, the Editor-In-Chief of *The Journal of Immunology* will speak on the career benefits of publishing in *The JI*.

SPEAKERS:

12:30 You've done the research, now tell the story: advice on writing manuscripts. **B.D. Evavold**. Univ. of Utah.

1:00 Advancing your career: why you should publish in *The JI*. **E.M. Oltz**. The Ohio State Univ. Col. of Med.

1:30 Ethics in scientific publication: a few do's and a lot of don'ts. **C.R. Nagler**. The Univ. of Chicago.

2:00 Successfully—and diplomatically—responding to reviewers. **S. Ostrand-Rosenberg**. Univ. of Utah.

100. INTERNATIONAL COMPLEMENT SOCIETY (ICS) SYMPOSIUM: NEWLY DEFINED ESSENTIAL ROLES OF COMPLEMENT

Guest Society Symposium

SAT. 12:30 PM—ROOM 26AB

CHAIRS: *R. TAYLOR, S. RAM*

12:30 Complement as an emerging target for cancer immunotherapy. **M. Markiewski.** Texas Tech Univ. Hlth. Sci. Ctr.

1:00 Complement and disease: the changing landscape of treatment and therapy. **C. Harris.** Newcastle Univ., United Kingdom.

1:30 Regulation of autophagy by complement component C3. **A. Blom**. Lund Univ., Sweden.

2:00 Properdin and Factor H: mechanisms of complement dysregulation in disease. **V. Ferreira.** Univ. of Toledo Col. of Med.

101. THE SOCIETY FOR LEUKOCYTE BIOLOGY (SLB) SYMPOSIUM: EARLY CAREER INVESTIGATORS: HOST DEFENSE AT THE MUCOSAL INTERFACE

Guest Society Symposium

SAT. 12:30 PM—ROOM 30AB

CHAIR: *I. MESSAOUDI*

12:30 Respiratory syncytial virus infection in early life results in reduced mucosal T cell responses contributing to poor tissue-resident memory T cell establishment. **A. Malloy**. Uniformed Services Univ. of the Hlth. Sci.

1:00 Post-traumatic pulmonary infection: the innate immune response protects the lung at the expense of the healing cutaneous wound. **M. Crane.** Brown Univ.

1:30 Flow cytometric analysis of oral neutrophils in mouse and human: identification of unique phenotypes associated with health and inflammation. **N. Fine**. Univ. of Toronto.

2:00 Antibiotic-mediated antiviral immunity. **S. Gopinath.** Stanford Univ.

102. IMMUNITY OF ASTHMA

Block Symposium

SAT. 12:30 PM—ROOM 32AB

CHAIRS: *A. SPERLING, N. HELLER*

12:30 IRF4 expression by lung dendritic cells drives a Th2 program throughout the effector and memory allergic responses. **D.F. Camacho, E. Wang, C.L. Howard, D.C. Decker, K.M. Blaine, E.P. Darnell, P.A. Krishack, C.L. Hrusch, J.J. Moon and A.I. Sperling**. Univ. of Chicago and Harvard Med. Sch. **(119.25)**

12:45 Impaired tumor-necrosis-factor-α-driven dendritic cell activation limits lipopolysaccharide-induced protection from allergic inflammation in infants. **K. Kaur, H. Bachus, A.M. Papillion, T.T. Marquez-Lago, Z. Yu, A. Ballesteros-Tato, S. Matalon and B. Leon-Ruiz**. Univ. of Alabama, Birmingham. **(119.26)**

1:00 Induced hyperglycemia promotes sensitization and exacerbates allergic inflammation in a mouse model of asthma. **A. Queener, B.M. Jeong, T.C. Doan, S.E. Chiarella, M.T. Walker, M.E. Coden, R. Nagasaka and S. Berdnikovs**. Northwestern Univ. **(119.3)**

1:15 The transcriptional repressor Blimp-1 promotes Th2 development and lung inflammatory disease in a house dust mite-induced model of allergic asthma. **A.C. Poholek, A. Hettinga, K. He, S. Kale, E. Schmitz, S. Pandya, M.M. Xie, A. Dent, T.B. Oriss and A. Ray**. Univ. of Pittsburgh Sch. of Med. and Indiana Univ., Purdue Univ. Indianapolis. **(119.15)**

1:30 IL-9-secreting tissue-resident memory CD4+ T cells contribute to allergic airway recall responses. **B.J. Ulrich, Y. Fu, B. Koh, R. Kharwadkar and M.H. Kaplan**. Indiana Univ. Sch. of Med. **(119.13)**

1:45 Glucocorticoids control allergic inflammation via Foxp3^{+} regulatory T cells. **Q.T. Nguyen and B. Min**. Cleveland Clin. Fndn. **(119.12)**

2:00 IL-9^{high} GATA3^{low} ILC2s are potent inducers of allergic airway inflammation. **P. Schmitt, A. Duval, S. Roga, M. Camus, O. Burlet-Schiltz, A. Gonzalez-de-Peredo, C. Cayrol and J-P. Girard**. Institut de Pharmacologie et de Biologie Structurale, France. **(119.29)**

2:15 Combined immune and airway epithelial cell profiles define asthma severity phenotypes. **T.B. Oriss, X. Zhou, M. Camiolo, K.L. Scholl, M. Gorry, M. Gauthier, P. Ray, S.E. Wenzel, K.C. Nadeau and A. Ray**. Univ. of Pittsburgh Sch. of Med. and Stanford Univ. **(119.1)**

103. INNATE IMMUNITY AND INFECTIOUS DISEASE

Block Symposium

SAT. 12:30 PM—ROOM 30CDE

CHAIRS: *A. DI NARDO, S. WAGGONER*

12:30 The lysophosphatidylcholine transporter, MFSD2A, is essential for $CD8^+$ memory T cell maintenance and secondary response to infection. **L.M. D'Cruz, A. Piccirillo, E. Hyzny, A. Menk, C. Wallace, W.F. Hawse, H.M. Buechel, B. Wong, J.C. Foo, A. Cazenave-Gassiot, M. Wenk, G.M. Delgoffe, S. Watkins and D. Silver**. Univ. of Pittsburgh, Univ. of Pittsburgh Cancer Inst., National Univ. of Singapore, Singapore and Univ. of Pittsburgh Cancer Instit. **(122.3)**

12:45 PGAM1 hypomethylation drives aerobic glycolysis in CD4 T cells to facilitate the host defense against tuberculosis. **X. Chen, J. Zhu, C. Zhu, F. Gao and Y. Cai**. Shenzhen Univ. Sch. of Med., China, Beijing Chest Hosp., Capital Med. Univ., China and Chinese Acad. of Agr. Sci., China. **(122.6)**

1:00 Infant T cells exhibit increased TCR signaling and proliferation to respiratory infection. **P. Thapa, R.S. Guyer and D.L. Farber**. Columbia Univ. Med. Ctr. **(122.13)**

1:15 Costimulation of type-2 innate lymphoid cells by GITR promotes effector function and ameliorates type 2 diabetes. **L. Galle, I. Sankaranarayanan, B.P. Hurrell, E. Howard, R. Lo, H. Maazi, G. Lewis, H. Banie, A.L. Epstein, P. Hu, V.K. Rehan, F.D. Gilliland, H. Allayee, P. Soroosh, A.H. Sharpe and O. Akbari**. Univ. of Southern California, Janssen Pharmaceutical Co. of Johnson & Johnson, Harbor-UCLA and Harvard Med. Sch. **(122.10)**

1:30 The role of innate immune cells in contact hypersensitivity. **K. On, S. Tikoo, R. Jain and W. Weninger**. Centenary Inst. of Cancer Med. and Cell Biol., Australia. **(122.11)**

1:45 Dermal fibroblasts control mast cell reactivity to commensal bacteria. **Y-L. Chang, K. Sriram, Z. Wang, S. Igawa, C-C. Wu, P. Insel and A. Di Nardo**. Sch. of Med., Univ. of California, San Diego. **(122.15)**

2:00 Natural killer cell inhibition of HIV vaccine responses. **I.E. Gyurova, J.P. McNally, C.E. Rydyznski and S.N. Waggoner**. Cincinnati Children's Hosp. Med. Ctr. **(122.16)**

104. PATHOGEN CONTROL AND EVASION

Block Symposium

SAT. 12:30 PM—ROOM 31ABC

CHAIRS: *M. DAUGHERTY, R. RAJSBAUM*

12:30 *Leishmania major* degrades CXCL1 to subvert host immune responses. **P. Gurung, M. Yorek, B. Poudel and L. Mazgaeen**. Univ. of Iowa. **(127.3)**

12:45 Neutrophil maturation and their response to infectious pathogens are regulated by microbiota. **M. Gadjeva, A. Kugadas, A. Petenkova, J. Geddes-McAlister, M.K. Mansour and D. Sykes**. Brigham and Women's Hosp., Harvard Med. Sch., Max Planck Inst. of Biochemistry, Germany and Massachusetts Gen. Hosp. **(127.22)**

1:00 The host E3-ubiquitin ligase TRIM6 plays an important role in balancing protective innate antiviral immunity and damaging inflammation. **R. Rajsbaum, L. Aguilera-Aguirre and A. Hage**. Univ. of Texas Med. Br. **(127.13)**

1:15 Rapidly evolving PARP proteins act as both positive and negative regulators of the antiviral response. **A. Ryan, J. Schwerk, F. Soveg, R. Savan and M. Daugherty**. Univ. of California, San Diego and Univ. of Washington. **(127.15)**

1:30 Innate immune role for the macrophage galactose lectin pathway in pulmonary tuberculosis. **K.F. Naqvi, T.B. Saito, M.B. Huante, B.B. Gelman and J.J. Endsley**. Univ. of Texas Med. Br. **(127.17)**

1:45 STAT2 is a determinant of yellow fever virus host tropism. **J. Morrison, L. Miorin, M. Laurent-Rolle, G. Pisanelli, P. Co, R. Albrecht and A. García-Sastre**. Univ. of California, Riverside, Icahn Sch. of Med. at Mount Sinai, Yale Univ. Sch. of Med. and Queens Col., City Univ. of New York. **(127.18)**

2:00 Activation of AMPK restricts Zika virus replication in endothelial cells by potentiating antiviral response and inhibiting viral-induced glycolysis. **A. Kumar, S. Singh, P. Singh and S. Giri**. Wayne State Univ. Sch. of Med. and Henry Ford Hlth. Sys. **(127.19)**

2:15 Dual oxidase1 ameliorates survival, viral clearance, and pulmonary pathology during influenza infection. **D. Sarr, A. Gingerich, M. Colon, T. Nagy, R.A. Tripp and B. Rada**. Univ. of Georgia. **(127.21)**

105. IMMUNOMETABOLISM IN TUMOR IMMUNITY AND IMMUNOTHERAPY

Block Symposium

SAT. 12:30 PM—ROOM 29ABCD

CHAIRS: *E. DAVILA, M. GUBBELS BUPP*

12:30 Fatty acid depletion is a reversible cause of kynurenine induced T cell apoptosis. **U.H. Beier, M.D. Cully, P.J. Siska, K. Singer, J. Jiao, T. TeSlaa, W.J. Quinn, W.W. Hancock, J.A. Baur, J.D. Rabinowitz and M. Kreutz**. Univ. of Pennsylvania, Univ. Hosp. Regensburg, Germany, Children's Hosp. of Philadelphia and Princeton Univ. **(137.1)**

12:45 Tumor cell IDO1 increases intratumoral immunosuppressive Tregs independent of enzyme activity. **L. Zhai, A. Bell, J. Qian, E. Ladomersky, K.L. Lauing and D.A. Wainwright**. Feinberg Sch. of Med., Northwestern Univ. **(137.2)**

1:00 Blockade of IDO/TDO downstream effectors restricts cancer immune suppression. **L.F. Campesato, S. Budhu, J. Tchaicha, A. Jaiswal, M. Gigoux, S. Pourpe, C. Liu, D. Zamarin, M.G. Manfredi, K. McGovern, J.D. Wolchok and T. Merghoub**. Mem. Sloan Kettering Cancer Ctr. and Kyn Therapeutics. **(137.3)**

1:15 Dynamics of migration patterns of polymorphonuclear myeloid-derived suppressor cells during tumor progression. **S. Fu, S. Patel, J. Mastio, G.A. Dominguez, K.A. Torres, Y. Nefedova, J. Zhou and D.I. Gabrilovich**. Wistar Inst. and Sun Yat-sen Univ., China. **(137.4)**

1:30 Suboptimal ER stress-induced autophagy potentiates anti-tumor T cell response. **P. Chakraborty, S. Chatterjee, D. Tran, S. Nadig, C. Atkinson and S. Mehrotra**. Med. Univ. of South Carolina. **(137.5)**

1:45 Metabolic reprogramming of arginine in tumor stem cells facilitates immune escape. **K-H. Chen and A. Walker**. Univ. of California, Riverside. **(137.6)**

2:00 Pharmacologic inhibition of liver X receptors enhances T cell anti-tumor function in triple negative breast cancer. **K.J. Carpenter, S. Abuirqeba, S. Majidi, M. Sengupta, A.C. Valfort, A. Chatterjee, R.J. DiPaolo and C.A. Flaveny**. Saint Louis Univ. **(137.7)**

106. CHINESE SOCIETY FOR IMMUNOLOGY (CSI) SYMPOSIUM: INNATE IMMUNITY AND TUMOR IMMUNOLOGY

Guest Society Symposium

SAT. 3:45 PM—ROOM 26AB

CHAIRS: *B. SUN, R. CASPI*

3:45 ICAM-1 controls development and function of ILC2. **J. Zhou.** Tianjin Med. Univ., China.

4:15 Regulatory innate lymphoid cells control innate intestinal inflammation. **Z. Fan.** Chinese Acad. of Sci., China.

4:45 Global characterization of T cells in non-small-cell lung cancer by single-cell sequencing. **Z. Zhang.** Peking Univ., China.

5:15 Tumor-derived exosomes antagonize innate antiviral immunity. **L. Zhang.** Zhejiang Univ., China.

107. SOCIETY FOR IMMUNOTHERAPY OF CANCER (SITC) SYMPOSIUM: RESISTING FAILURE: DISSECTING MECHANISMS OF ACQUIRED RESISTANCE TO CANCER IMMUNOTHERAPY

Guest Society Symposium

SAT. 3:45 PM—ROOM 29ABCD

CHAIRS: *D. VIGNALI, S. MAUDE*

3:45 Resistance mechanisms that limit the efficacy of cancer immunotherapy. **D. Vignali.** Univ. of Pittsburgh.

4:15 Combination immunotherapy to overcome resistance to CAR T cell therapy. **S. Maude**. Children's Hosp. of Philadelphia.

4:45 Understanding the $CD8^+$ TILs response to checkpoint blockade immunotherapy. **A. Anderson**. Brigham and Women's Hosp.

5:15 CAR T cells for cancer – merging synthetic biology and immunology. **S. Riddell**. Fred Hutchinson Cancer Res. Ctr.

108. IMMUNE MECHANISMS OF HUMAN DISEASE

Block Symposium

SAT. 3:45 PM—ROOM 30AB

CHAIRS: *N. VAN OERS, K. HASKINS*

3:45 Endogenous antisense RNA and dysregulation of CD39 expression in inflammatory bowel disease. **M.S. Longhi, R. Harshe, A. Xie, H. Zhang, R.J. Robles, S. Mukherjee, M. Vuerich, A.C. Moss and S.C. Robson**. Beth Israel Deaconess Med. Ctr. **(182.10)**

4:00 22q11.2 Deletion syndrome (DiGeorge) and mutations in *Forkhead Box N1* (*FOXN1*) cause a thymic hypoplasia through distinct developmental processes. **N.S. van Oers, Q. Du, L. Huynh, F. Coskun, I. Dozmorov, P. Raj, S. Khan, C. Wysocki, M.L. Markert and M.T. de la Morena**. Univ. of Texas Southwestern Med. Ctr., UT Southwestern Med. Ctr., Duke Univ. Med. Ctr. and Univ. of Washington. **(182.32)**

4:15 Age associated insulin resistance is controlled by microbiota through a monocyte-B1a cell pathway. **M. Bodogai, J. O'Connell, Y. Kim, J. Egan and A. Biragyn**. NIA, NIH. **(182.35)**

4:30 The impact of IL-27 on human T cells is altered in multiple sclerosis patients. **M-L. Clénet, C. Laurent, O. Devergne, P. Duquette, A. Prat, C. Larochelle and N. Arbour**. Centre de recherche du CHUM, Canada and INSERM U1151, France. **(182.38)**

4:45 $IL\text{-}35^+$ regulatory immune cells in diabetic nephropathy. **K. Singh, Z. Luo, P-O. Carlsson, P. Hansell and S. Sandler**. Uppsala Univ. and Uppsala Univ., Sweden. **(182.47)**

5:00 CD4+ T cell antigen discovery in sarcoidosis. **S.A. Greaves, A. Mitchell, M. Falta, R. Santos, C.A. Pinilla and A.P. Fontenot**. Univ. of Colorado Anschutz Med. Campus and Torrey Pines Inst. for Molec. Studies. **(182.57)**

5:15 Long-range cis-regulatory architecture of the human *IL2* gene. **P.K. Sharma, R.M. Thomas, M. Johnson and A. Wells**. The Children's Hosp. of Philadelphia. **(182.65)**

5:30 Detection and characterization of T cells reactive to hybrid insulin peptides in patients with type 1 diabetes. **R.L. Baker, P.A. Gottlieb, T. Delong and K. Haskins**. Univ. of Colorado Sch. of Med. and Univ. of Colorado, Skaggs Sch. of Pharmacy and Pharmaceutical Sci. **(182.72)**

109. B CELLS AND THE CELLS THAT HELP

Block Symposium

SAT. 3:45 PM—ROOM 33ABC

CHAIRS: *D. ALLMAN, N. BAUMGARTH*

3:45 Protein kinase CK2 drives plasma cell differentiation. **H. Wei, W. Yang, Z. Yan, H. Qin and E. Benveniste**. Univ. of Alabama at Birmingham. **(188.1)**

4:00 IRF4 regulates the proliferative response during B cell differentiation in vivo. **D. Patterson, C. Scharer, T. Mi, S.L. Hicks, Q. Zhang and J.M. Boss**. Emory Univ. Sch. of Med. and Emory Univ. Sch. of Publ. Hlth. **(188.2)**

4:15 B cell activation and differentiation employ mTORC1 rather than Xbp1 to initiate distinct segments of the unfolded protein response prior to antibody secretion. **B.M. Gaudette, D.D. Jones, J.R. Wilmore and D. Allman**. Perelman Sch. of Med., Univ. of Pennsylvania. **(188.3)**

4:30 E3 ubiquitin ligase Fbw7 regulates B cell survival and T cell-independent responses. **P. Ramezani-Rad, C.R. Leung, J.R. Apgar and R.C. Rickert**. Sanford Burnham Prebys Med. Discovery Inst. **(188.4)**

4:45 IL-21-dependent Tbet+ B cells require Bcl6 and receive delayed help from non-Tfh T cells. **R.C. Levack, M. Popescu and G. Winslow**. Upstate Med. Univ. **(188.5)**

5:00 Extracellular ST6Gal-1 calibrates B cell IgG production by cell non-autonomous extrinsic sialylation. **E.E. Irons, P.R. Punch and J.T.Y. Lau**. Roswell Park Cancer Inst. **(188.6)**

5:15 IL-12 signaling drives the differentiation and function of a T_H1-derived T_{FH1}-like cell population. **M.D. Powell, K. Read, B. Sreekumar and K.J. Oestreich**. Virginia Polytechnic Inst. and State Univ. and Biomed. and Vet. Sci. Grad. Program, Virginia-Maryland Col. of Vet. Med. **(188.7)**

5:30 LSD1 epigenetically represses NF-κB target genes to regulate marginal zone B cell development. **R.R. Haines, C.D. Scharer and J. Boss**. Emory Univ. **(188.9)**

110. MICROBIAL, PARASITIC, AND FUNGAL IMMUNOLOGY

Block Symposium

SAT. 3:45 PM—ROOM 31ABC

CHAIRS: *M.G. JUARRERO, D.R. HERBERT*

3:45 β-glucan priming enhances neutrophil Fcγ receptor-mediated antifungal activity during oral mucosal infection. **M. Swidergall, N.V. Solis, Z. Wang, Q.T. Phan, M.E. Marshall, M.S. Lionakis, E. Pearlman and S.G. Filler**. Univ. of California, Los Angeles, Univ. of California, Irvine and NIAID, NIH. **(190.4)**

4:00 Understanding mechanisms of disease tolerance during intestinal helminth infection. **M. Gentile, Y. Li, A. Robertson, G. Fontes, E. Kaufmann, N. Khan, H.M. Munter, M. Divangahi and I.L. King**. McGill Univ., Canada. **(190.27)**

4:15 Dynamics of antigen re-exposure to $CD8^+$ T cells during *Toxoplasma gondii* infection. **L. Shallberg, A.T. Phan, D.A. Christian and C.A. Hunter**. Univ. of Pennsylvania. **(190.11)**

4:30 Long pentraxin 3 regulates IL-17A mediated immunity to primary and secondary *Leishmania major* infection. **G. Gupta, P. Jia, R. Sharma, R. Zayats, L. Shan, Z. Mou, T. Murooka, A. Soussi-Gounni, C.I. de Oliveira and J.E. Uzonna**. Univ. of Manitoba, Canada and Oswaldo Cruz Fndn., Brazil. **(190.21)**

4:45 Ephrin B receptor tyrosine kinase ligands modulate the germinal center reaction and control humoral immune responses to malaria. **A.C. Olatunde, P.N. Mimche, S.O. Seely, T.P. Stewart and T.J. Lamb**. Univ. of Utah Sch. of Med. **(190.29)**

5:00 Pathogen evasion of intracellular complement in macrophages enables systemic colonization and bacteremia. **M. Valeri, L.A. Knodler, J. Behnsen, P. Sharma, L. Chung, J. Cundiff, E. Sanchez-Lopez, W. Pandori, M. Lodoen, P. Martin, R. Edwards, M. Karin, J. Celli, K. Cadwell, S-P. Nuccio and M. Raffatellu**. University of California, San Diego, Washington State Univ., University of California, Irvine, New York Univ. Sch. of Med. and Univ. of California, San Diego. **(190.6)**

5:15 Neutrophils transiently harbor *Mycobacterium tuberculosis* and represent a metabolically permissive niche for bacterial growth. **L. Huang and D. Russell**. Cornell Univ. **(190.23)**

5:30 Drug treatment of tuberculosis diminishes but does not abolish the protection against secondary *M. tuberculosis* challenge. **S.K.C. Ganchua, A.M. Cadena, F.F. Hopkins, S. Fortune and J.L. Flynn**. Univ. of Pittsburgh Sch. of Med. and Harvard Sch. of Publ. Hlth. **(190.33)**

111. GUT MICROBIOTA AFFECT ON HOST IMMUNITY

Block Symposium

SAT. 3:45 PM—ROOM 30CDE

CHAIRS: *E. KOLTSOVA, G. CHEN*

3:45 The gut microbiome can contribute to colon tumor susceptibility via an effect on $CD8^+$ T cell responses. **A.I-W. Yu, S. Ho, J. Chen, C. Koumpouras, L. Zhao, P.D. Schloss, K.A. Eaton and G.Y. Chen**. Univ. of Michigan and Univ. of Michigan Med. Sch. **(191.1)**

4:00 Intestinal IL-17R signaling controls liver inflammation by constraining microbiome-induced TLR9 signaling and IL-18 production. **P. Castillo, P. Kumar, T.W. Hand and J.K. Kolls**. Univ. of Pittsburgh Sch. of Med. and Stony Brook Univ. **(191.16)**

4:15 Sensing fungal dysbiosis by gut-resident $CX3CR1^+$ mononuclear phagocytes aggravates allergic airway disease. **X. Li, I. Leonardi, A. Semon, I. Doron, I.H. Gao, G.G. Putzel, Y. Kim, H. Kabata, D. Artis, W.D. Fiers, A.E. Ramer-Tait and I. Iliev**. Weill Cornell Med. Col. and Univ. of Nebraska, Lincoln. **(191.3)**

4:30 Cytokine mediated control of microbiota and inflammation in atherosclerosis. **E. Koltsova, I. Peshkova, A. Dzutsev, T. Aghayaev, S. Hazen, G. Trinchieri and A. Fatkhullina**. Fox Chase Cancer Ctr., NCI, NIH and Cleveland Clin. **(191.12)**

4:45 Microbiota-derived butyrate limits the autoimmune response by promoting follicular regulatory T cells. **D. Takahashi, N. Hoshina, J.M. Clarke and K. Hase**. Keio Univ. Fac. of Pharmacy, Japan and CSIRO Food and Nutritional Sci., Australia. **(191.4)**

5:00 Metabolic targeting of microbiota-reactive CD4 T memory cells as an immunotherapy for inflammatory bowel disease. **Q. Zhao, L.W. Duck and C.O. Elson**. Univ. of Alabama, Birmingham, Sch. of Med. **(191.7)**

5:15 Zinc supplementation modulates T helper 17 cells via the gut microbiome. **S.R. Gordon and S. Vaishnava**. Brown Univ. **(191.13)**

5:30 Functional characterization of the enteric animal virome. **S. Dallari, T. Heaney, A. Rosas and K. Cadwell**. New York Univ. Sch. of Med. **(191.9)**

112. IMMUNE RESPONSE TO RESPIRATORY VIRUSES

Block Symposium

SAT. 3:45 PM—ROOM 25ABC

CHAIRS: *S.M. VARGA, J. WILLIAMS*

3:45 A potently neutralizing site III-specific human antibody prevents human metapneumovirus replication in vivo. **J. Mousa, D. Diaz, J. Crabtree, A. Pena-Briseno, Y. Bar-Peled and R.A. Tripp**. Univ. of Georgia. **(198.1)**

4:00 Uncharted territory: the $CD4^+$ T cell response to human metapneumovirus. **K.D. Lamens, M.C. Rogers, J.T. Tometich, T.W. Hand and J.V. Williams**. Univ. of Pittsburgh Sch. of Med. and Vanderbilt Univ. Sch. of Med. **(198.2)**

4:15 Respiratory syncytial virus strains differentially activate the inflammasome eliciting a pathogenic Th17 response. **K. Waldstein, K.A. Weiss, S. Hartwig, H. Quick, B. Poudel, P. Gurung and S.M. Varga**. Univ. of Iowa. **(198.3)**

4:30 Relative timing of type I interferon response and virus replication determines disease outcome during respiratory virus infection. **R. Channappanavar, A. Fehr, J. Zheng, J. Abrahante, M. Mack, D. Meyerholz and S. Perlman**. The Univ. of Tennessee Hlth. Sci. Ctr., Univ. of Kansas, Carver Col. of Med. Univ. of Iowa, Univ. of Minnesota, Univ. of Regensburg, Bavaria and Univ. of Iowa. **(198.4)**

4:45 Can age-associated B cells contribute to anti-viral immunity? **O.A. Kugler-Umana, Y. Kuang, W. Zhang, P. Devarajan, J. Xia and S.L. Swain**. Univ. of Massachusetts Med. Sch. **(198.5)**

5:00 Eosinophils undergo temporally regulated phenotypic and physiologic changes during influenza A virus infection. **A. Samarasinghe, M. Tiwary and K. LeMessurier**. Univ. of Tennessee Hlth. Sci. Ctr. **(198.6)**

5:15 Lung-draining lymph-node-resident memory CD8 T cells mediate local protective immunity. **S.M. Anthony, N. Van Braeckel-Budimir, S. Moioffer, S.M. Hartwig, S.M. Varga, V.P. Badovinac and J.T. Harty**. Carver Col. of Med., Univ. of Iowa. **(198.7)**

5:30 Improved level and longevity of protective immune responses in measles virus with efficient replication in blood and lymphoid tissue. **W-H.W. Lin, R.J. Adams and D.E. Griffin**. Johns Hopkins Univ. Bloomberg Sch. of Publ. Hlth. and Johns Hopkins Univ. Sch. of Med. **(198.8)**

113. AAI-THERMO FISHER MERITORIOUS CAREER AWARD PRESENTATION AND LECTURE

The AAI-Thermo Fisher Meritorious Career Award recognizes a mid-career scientist for outstanding research contributions to the field of immunology.

Awards Lecture

Generously supported by Thermo Fisher Scientific

SAT. 4:30 PM—BALLROOM 20BCD

CHAIR: *J.L. FLYNN*

Recipient: **K.A. Hogquist.** Univ. of Minnesota Ctr. for Immunology

4:30 Introduction and Award Presentation. **J.L. Flynn**. Univ. of Pittsburgh Sch. of Med., AAI President; and **C. Hergersberg.** Thermo Fisher Scientific.

4:35 Thymic selection of soldiers and peacekeepers. **K.A. Hogquist.** Univ. of Minnesota Ctr. for Immunology.

114. DISTINGUISHED LECTURE BRUCE R. BLAZAR

Distinguished Lecture

SAT. 6:00 PM—BALLROOM 20BCD

CHAIR: *D. MASOPUST*

6:00 Stem cell transplantation: restoring immune balance. **B.R. Blazar**. Univ. of Minnesota.

REMINDER

SATURDAY POSTER SESSIONS

Posters on Display: 9:30 am – 4:30 pm
Author Presentation Time: 2:30 pm – 3:45 pm

115. BASIC AUTOIMMUNITY: T CELLS

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P300 **115.1** IL-23 is essential for the switching between Tfh-IFN-γ and Tfh-IL-17 in lupus. **H. Hong, Q. Wu, P. Yang, B. Luo, J. Li, H. Li, D.J. Cua, H-C. Hsu and J.D. Mountz**. Univ. of Alabama, Birmingham, St. John's Episcopal Hosp., Harvard Med. Sch. and Merck Res. Lab.

P301 **115.2** The pathogenic role of stem cell-like memory T cells in rheumatoid arthritis. **Y-J. Lee, M. Kim and E.B. Lee**. Seoul Natl. Univ. Col. of Med., South Korea.

P302 **115.3** Antigen-presenting cells from naive mice constitutively present the T cell epitope of SERCA2a and induce inflammatory cytokine production in antigen-specific T cells. **R. Arumugam, B. Yalaka, C. Massilamany, S. Ali, J-J. Riethoven, X. Sun and J. Reddy**. Univ. of Nebraska, Lincoln.

P303 **115.4** Biomarker discovery in pre-type 1 diabetes; Th40 cells as a predictive risk factor. **G. Vaitaitis, D. Waid and D.H. Wagner**. Univ. of Colorado Anschutz Med. Campus.

P304 **115.5** Novel H2-K and H2-D knockout NOD mice to dissect independent contributions of common MHC I molecules to type 1 diabetes development. **J.J. Racine, I. Stewart and D.V. Serreze**. Jackson Lab.

P305 **115.6** Rab4A inactivation in T cells blocks mTOR activation, pro-inflammatory lineage development, and disease pathogenesis in lupus-prone mice. **N. Huang, B. Wyman, E. Cravo, T. Winans, G. Choudhary, Z. Oaks, M. Duarte, J. Lewis, Z-W. Lai, K. Banki and A. Perl**. State Univ. of New York Upstate Med. Univ.

P306 **115.7** Lymphocytes populations in murine models of systemic lupus erythematosus exhibit different responses to treatment with metabolic modulators. **C. Cornaby, L. Zeumer-Spataro, S-C. Choi, W. Li and L. Morel**. Univ. of Florida.

P307 **115.8** *Nfkbid* overexpression in NOD mice elicits complete type 1 diabetes resistance. **J.R. Dwyer, J.J. Racine, A. Quinlan, M. Presa, H.D. Chapman and D.V. Serreze**. Jackson Lab.

P308 **115.9** CNS-specific autoregulatory CD8 T cells rely on IFNγ signaling for optimal suppression of pathogenic CD4 T cell responses during inhibition of demyelinating disease. **A. Boyden, A.A. Brate, L.G. Laageide and N.J. Karandikar**. Univ. of Iowa Hlth. Care.

P309 **115.10** Oct1 and OCA-B in T cells are potent therapeutic targets for autoimmune diseases. **H. Kim, A. Shakya, L. Dickey, C. Stone, T. Lane, M.A. Williams and D.R. Tantin**. Huntsman Cancer Inst., Univ. of Utah and Univ. of Utah Sch. of Med.

P310 **115.11** Comprehending the phenotypic and functional diversity of γδ T cell subtypes in autoimmune skin disease pemphigus vulgaris. **D. Das, S. KV, A. Sharma and S. Arava**. All India Inst. of Med. Sci., New Delhi, India.

P311 **115.12** Critical role of STAT5 tetramerization in the pathogenesis of experimental autoimmune encephalomyelitis: a murine model of multiple sclerosis. **K.L. Monaghan, B.Y. Farris, C.D. Amend, J. Lin, W.J. Leonard and E.C.K. Wan**. West Virginia Univ. and NHLBI, NIH.

P312 **115.13** Regulation of T follicular cell development by E3 ubiquitin ligase CBL-B in systemic lupus erythematosus. **S. Tu, R. Tang, H. Guo, Q.J. Liu and J. Zhang**. Carver Col. of Med., Univ. of Iowa and Ohio State Univ.

P313 **115.14** One size does not fit all: SLAM-associated protein is dispensable for type 1 diabetes but required for autoantibody-mediated arthritis. **R. Bonami, L. Nyhoff, C. Hulbert, J. Felton, P.L. Kendall and J.W. Thomas**. Vanderbilt Univ. Med. Ctr.

P314 **115.15** T cells from NOD-*Perlg* mice transfer neuritis to NOD-*scid* mice. **J.J. Racine, H.D. Chapman, R. Doty and D.V. Serreze**. Jackson Lab.

P315 **115.16** NKG2D signaling within the pancreas decreases NOD diabetes by enhancing CD8+ central memory T cell formation. **M.A. Markiewicz, A.P. Trembath, N. Sharma and C.E. Mathews**. Univ. of Kansas Med. Ctr. and Univ. of Florida.

P316 **115.17** WITHDRAWN

P317 **115.18** Distinct waves of CD8 T cell affinity during demyelinating disease progression. **J.R. Jacobs, L. Blanchfield, B. Liu and B.D. Evavold**. Univ. of Utah Sch. of Med. and Benaroya Res. Inst.

P318 **115.19** Thpok suppresses pathogenic cytokine production by Th17 cells in autoimmune disease. **K.E. Marks, S. Flaherty and J.M. Reynolds**. Chicago Med. Sch., Rosalind Franklin Univ. of Med. and Sci.

P320 **115.20** Single-cell transcriptome analysis reveals diverse islet-infiltrating T cell subsets and a role for BATF in promoting the diabetogenic activity of CD8 T cells. **A.E. Ciecko, D.M. Schauder, B.M. Foda, C-W. Lin, W. Cui and Y-G. Chen**. Med. Col. of Wisconsin and Blood Res. Inst.

P321 **115.21** Understanding how AKT phosphorylation of hnRNPA1 modulates T cell fate and function. **T.L. White, M. Gable, Y. Jin and P. Morel**. Univ. of Pittsburgh.

P322 **115.22** Pathogenic follicular CD8 T cells acquire diverse function during autoimmune disease. **K.M. Valentine, G.N. Mullins, T.J. Lawrence and K.K. Hoyer**. Univ. of California, Merced and Oak Ridge Natl. Lab.

P323 **115.23** Micromanaging lupus nephritis: miR-17 modulates T_{FH}development and regulatory T cell activity. **H-Y. Yang, D. Pardoll and C-Y. Wu**. Chang Gung Mem. Hosp. and Johns Hopkins Univ. Sch. of Med.

P319 **115.24** Tryptamine treatment results in the amelioration of EAE by inducing an anti-inflammatory shift in the Th17/Treg balance mediated by regulation of miRNA expression profile. **N. Dopkins, P. Nagarkatti and M. Nagarkatti**. Univ. of South Carolina Sch. of Med.

P324 **115.25** Age-associated changes in central T cell tolerance induction. **S. Cepeda, A.K. Hester, X. Yangming, E.B. Kraig and A.V. Griffith**. Univ. of Texas Hlth. at San Antonio.

116. BASIC AUTOIMMUNITY: IMMUNOREGULATION

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P325 **116.1** Resistant effect of sodium chloride on the development and function of TGF-β-induced $CD4^+$ $Foxp3^+$ regulatory T cells. **S.G. Zheng, Y. Luo and J. Wang**. Pennsylvania State Univ. Col. of Med.

P326 **116.2** sCD83 alleviates experimental autoimmune uveitis through disrupting the regulation of Rab1a/LRRK2 on F-actin rearrangements. **W. Lin**. Shandong Acad. of Med. Sci., China.

P327 **116.3** CD300c is a negative regulator of T cell immunity. **L. Lai, C. Cui, M. Su and Y. Lin**. Univ. of Connecticut.

P328 **116.4** Overexpression of *Pbx1-d*, a novel splice isoform of *Pbx1* associated with lupus susceptibility, regulates regulatory T cell plasticity. **S-C. Choi, C. Cornaby and L. Morel**. Univ. of Florida.

P329 **116.5** The cellular basis of the PD-1/PD-L1 regulatory pathway in diabetic autoimmunity in the NOD mouse. **H. Hu, X. Wan, P. Zakharov and E.R. Unanue**. Washington Univ. Sch. of Med.

P330 **116.6** Essential role of IL-17A in Tregs induction in autoimmune uveitis. **W.P. Chong, Y. Zhong, M. Mattapallil, J. Chen and R.R. Caspi**. Sun Yat-sen Univ., China and NEI, NIH.

P331 **116.7** Role of Jmjd6 in Aire expression and self-tolerance induction in the thymus. **K. Matsubara and Y. Fukui**. Med. Institute of Bioregulation, Kyushu Univ., Japan.

P332 **116.8** Type-1 interferons inhibition of interleukin-10 signaling in T cells in type 1 diabetes development. **M. Iglesias Lozano, M. Chicco, D. Bibicheff, G. Brandacher and G. Raimondi**. Johns Hopkins Univ. Sch. of Med.

P332 **116.9** The absence of CD137 ligand upregulates the expression of the immunosuppressive molecule soluble CD137. **B.M. Foda, M.H. Forsberg, A.E. Ciecko, K.W. Mueller, A. Geurts and Y-G. Chen**. Med. Col. of Wisconsin.

P334 **116.10** Keratinocyte-derived TGF-β is dispensable in skin autoimmunity in mice. **Y. Yang, Y. Zenke, T. Hirai and D.H. Kaplan**. Univ. of Pittsburgh.

P335 **116.11** Adenosine: adenosine receptor axis in blood brain barrier permeability regulation. **M.S. Bynoe**. Cornell Univ. Vet. Med. Col.

P336 **116.12** AID deficiency greatly improves survival and diminishes renal pathology in the BXSB mouse model of SLE. **C.M. Leeth, J. Zhu, A. Potter, M. Hasham, M. Richwine and D.C. Roopenian**. Virginia Polytechnic Inst. and State Univ. and Jackson Lab.

P337 **116.13** A Treg-specific deletion of Helios causes autoimmune lipodystrophy and metabolic syndrome. **A.M. Thornton, O.F. Gavrilova, V.R. Penna, P.E. Korty and E.M. Shevach**. NIAD, NIH and NIDDK, NIH.

P339 **116.14** The role of microRNA-22 in the dysregulation of lupus T_{regs} and the pathogenesis of systemic lupus erythematosus. **B. Appleton, A.W. Faust, D.L. Michell, M.J. Ormseth, K.C. Vickers and A.S. Major**. Vanderbilt Univ. and Vanderbilt Univ. Med. Ctr.

P340 **116.15** Regulation of FOXP3 expression by c-Rel O-GlcNAcylation. **T.J. de Jesus, J. Tomalka, S. Shukla, F. Staback, R. Agarwal, J. Centore and P. Ramakrishnan**. Case Western Reserve Univ.

P341 **116.16** Activation of naive $CD4^+CD25^+FOXP3^+$Treg by specific autoantigen and Th2 cytokines IL-4 and IL-5 induces autoantigen specific Treg that inhibit EAE. **B.M. Hall, G. Tran, N.D. Verma, C.M. Robinson, P. Wilcox and S.J. Hodgkinson**. Univ. of New South Wales, Australia and Sydney Univ., Australia.

P338 **116.17** Agonist-induced 4-1BB activation ameliorates the pathogenesis of Sjögren's syndrome-like sialadenitis in non-obese diabetic mice. **J. Zhou, B. Yoo and Q. Yu**. Forsyth Inst.

117. I'M ON FIRE: LOCAL CONTROL OF TISSUE INFLAMMATION

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P342 **117.1** Type 1 alveolar epithelial cell-derived chemokine CCL19 promotes airway inflammation. **H. Nakano, M. Lyons-Cohen, K. Nakano, T. Karcz, S.Y. Thomas, G. Whitehead and D.N. Cook**. NIEHS, NIH.

P343 **117.2** In vivo imaging of caspase-1 activation enables efficient and rapid detection of various inflammatory disorders. **J. Lee, Y. Ko, E. Yang, N. Jang, H.S. Kim, I.C. Kwon and N-H. Cho**. Seoul Natl. Univ. Col. of Med., South Korea and Korea Inst. of Sci. and Technol., South Korea.

P344 **117.3** Loss of local innervation induces lymph node expansion. **C-S. Chen, L. Ince, A. de Juan and C. Scheiermann**. Ludwig-Maximilians-Universität München, Germany, Univ. of Geneva Med. Sch., Switzerland and Curie Inst., France.

P345 **117.4** Peripherally induced tissue resident memory CD8 T cells in the brain mediate protection against CNS infections. **S.L. Urban, I.J. Jensen, L.L. Pewe, V.P. Badovinac and J.T. Harty**. Univ. of Iowa Carver Col. of Med.

P346 **117.5** The anti-inflammatory effects of the Chromogranin A hormone cleavage product catestatin on human monocytes and macrophages. **E.M. Muntjewerff, G. Christoffersson, M.J.T. Nicolasen, S.K. Mahata and G. van den Bogaart**. Radboud Inst. for Molec. Life Sci., The Netherlands, Uppsala Univ., Sweden, VA San Diego Healthcare Syst. and Univ. of Groningen, The Netherlands.

P347 **117.6** Comparing docosahexaenoic acid as a prophylactic treatment for acute and chronic particle-exposed Balb/c mice. **P. Fletcher, R.F. Hamilton, M. Buford, B. Postma, J.J. Pestka and A. Holian**. Univ. of Montana and Michigan State Univ.

P348 **117.7** Sex-differences in the response to inhaled nanoparticles. **J. Ray and A. Holian**. Univ. of Montana.

P349 **117.8** BAFF and VCAM-1 cooperate on the interaction between B lymphocytes and fibroblast-like synoviocytes. **E.Y. Moon and S.S. Yoon**. Sejong Univ., South Korea.

P350 **117.9** EGF-like repeats and discoidin I-like domain 3 deficiency improves post-myocardial infarction healing via neutrophil extracellular traps mediated pro-inflammatory macrophage polarization. **X. Wei, C. Zhang, Z. Xie, X. Teng, Z. Wang, H. Zheng, S. Zou, N. Huang, K. Cui and J. Li**. West China Hosp., Sichuan Univ., China and Univ. of Michigan, Ann Arbor.

P351 **117.10** β-Catenin negatively regulates IL-6 and IL-8 expression at transcriptional level and induces reactivity in human astrocytes. **K. Robinson, S. Narasipura and L. Al-Harthi**. Rush Univ. Med. Ctr.

P352 **117.11** Evaluating cooperative roles for STAT3 and Aiolos in lymphocyte mimicry associated with metastatic disease. **S. Sandhu, K. Read, D. Jones, S. Dickerson and K.J. Oestreich**. Virginia Tech Carilion Sch. of Med. and Virginia-Maryland Col. of Vet. Med.

P353 **117.12** Phosphorylation of CBP by IKKα links intestinal homeostasis. **S-C. Miaw, Y-T. Lin, Y-H. Hsu, C. Liu, C-C. Chen, C-T. Shun, C-H. Tu, J-S. Yu, M-S. Wu and C-C. Chen**. Natl. Taiwan Univ. Col. of Med., Taiwan and Natl. Taiwan Univ. Hosp., Taiwan.

P354 **117.13** Neuroinflammation functionally regulates CNS lymphatic vasculature and drainage. **M. Hsu, A. Rayasam, J.A. Kijak, Y.H. Choi, J.S. Harding, S.A. Marcus, W.J. Karpus, M. Sandor and Z. Fabry**. Univ. of Wisconsin, Madison, Univ. of California, San Francisco and Mount Sinai Hosp., Toronto, Canada.

P355 **117.14** Inflammasome activation in macrophages is regulated by actin-bundling protein L-plastin. **H. Joshi, B.E. Todd, T. Szasz, E. Anaya and S.C. Morley**. Washington Univ. Sch. of Med.

P356 **117.15** Analysis of leukocyte populations and nerves in developing murine corneas. **A. Abou-Slaybi, A. Jamali, D.L. Harris, Y. Seyed-Razavi and P. Hamrah**. Sackler Sch. of Grad. Biomed. Sci., Tufts Univ. and Tufts Med. Ctr.

P357 **117.16** Targeted expansion of tissue-resident $CD8^+$ T cells to boost cellular immunity in the skin. **S.J. Hobbs and J.C. Nolz**. Oregon Hlth. and Sci. Univ.

P358 **117.17** Choline acetyltransferase-expressing T cells are required to control chronic viral infection. **M.A. Cox and T. Mak**. Princess Margaret Cancer Ctr.

P359 **117.18** Modulation of liver protein sialylation drives spontaneous generation of fatty liver and modulates multiple inflammatory models. **D.M. Oswald, M.B. Jones and B.A. Cobb**. Case Western Reserve Univ. Sch. of Med.

P360 **117.19** Systemic lupus erythematosus patients' peripheral blood mononuclear cells display an altered transcript isoform repertoire. **P. Singh, D. Troggian Veiga, R. Rossi, R. Marches, D. Nehar-Belaid, V. Pascual and J. Banchereau**. Jackson Lab. for Genomic Med. and Gale and Ira Drukier Inst. for Children's Hlth.

P361 **117.20** The impact of the TRPM2 ion channel on inflammation and macrophage metabolism in gastrointestinal models. **H.M.S. Algood, B.R.E.A. Dixon, D. Olivares-Villagomez, C.H. Serezani, M.K. Washington, J.C. Rathmell and L.A. Coburn**. Vanderbilt Univ. Med. Ctr.

P362 **117.21** *Mycobacterium avium* subspecies *paratuberculosis* (MAP) drives an innate Th17-like T cell response and upregulation of inhibitory signals. **J.L. DeKuiper and P.M. Coussens**. Michigan State Univ.

P363 **117.22** *Sargassum horneri* mitigates particulate matter induced inflammatory response in MLE-12 cells via MAPK pathways. **S.P. Mihindukulasooriya, K.H.I.N.M. Herath, A. Kim, H.J. Kim, M-O. Ko, Y-J. Jeon and J. Youngheun**. Jeju Natl. Univ.

P364 **117.23** CCR2 mediates transendothelial migration of human pathogenic Th17 cells. **F. Parween, N. Kathuria, H. Zhang and J.M. Farber**. NIAID, NIH.

P365 **117.24** The function of CD83 in HSV-induced Behcet's disease mouse model. **S. Sohn, S.M.S. Islam and H-O. Byun**. Ajou Univ., South Korea.

P366 **117.25** Intrinsic alteration of differentiation and glycolysis in T lymphocytes immediately after TCR activation through PSGL-1 signaling. **J.L. Hope, D. Otero, P. de Jong, J. Ma, M. Henriquez, G. Powis and L. Bradley**. Sanford Burnham Prebys Med. Discovery Inst.

118. HEMATOPOIESIS AND MYELOID DEVELOPMENT

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P400 **118.1** Characterizing a "critical window" of immune development: how perturbation of developmental hematopoiesis shapes immune function and susceptibility to disease in offspring. **A.E. Beaudin, D.A. Lopez, A. Apostol, G.E. Hernandez and C. Forsberg**. Univ. of California, Merced, Univ. of California, Los Angeles and Univ. of California, Santa Cruz.

P371 **118.2** IL-27 receptor signaling potentiates angiotensin II induced myelopoiesis and promotes abdominal aortic aneurysm. **T. Aghayev, I. Peshkova, A. Fatkhullina, P. Makhov, S. Eguchi, Y.F. Tan, A. Kossenkov, S. Sykes and E. Koltsova**. Fox Chase Cancer Ctr., Lewis Katz Sch. of Med., Temple Univ. and The Wistar Inst.

P376 **118.3** Trauma induces emergency hematopoiesis through IL-1/MyD88-dependent production of G-CSF. **A.G. Fuchs, D. Monlish, S. Ghosh, S-W. Chang, G.V. Bochicchio, L.G. Schuettpelz and I.R. Turnbull**. Washington Univ. Sch. of Med.

P377 **118.4** Identification of splenic progenitors for CD11b high myeloid cells in the long-term culture with GM-CSF. **S.H. Ryu, H.Y. Na, M. Sohn, W. Choi, H. In, H.S. Shin, J.S. Park and C.G. Park**. Yonsei Univ. Col. of Med., South Korea.

P378 **118.5** CCCTC-binding factor regulates the development and function of dendritic cells. **B. Yang, T-G. Kim, S. Kim and H-P. Kim**. Yonsei Univ. Col. of Med., South Korea.

P379 **118.6** Acute and chronic waves of myeloid cell maturation and myelopoiesis with high fat diet. **E. Bowers, S. Abrishami and D. Singer**. Univ. of Michigan.

P374 **118.7** Reduced expression of the DNA-binding protein ARID3a, a mediator of human hematopoiesis, in hematopoietic progenitors contributes to age-related transcriptional changes. **M. Ratliff, J.W. Garton, J.A. James and C. Webb**. Univ. of Oklahoma Hlth. Sci. Ctr. and Oklahoma Med. Res. Fndn.

P372 **118.8** The DNA-binding protein ARID3a is required for human erythrocyte lineage differentiation using the K562 model cell line. **J.W. Garton, B. Chapman, M. Shankar, K. Rose and C. Webb**. Univ. of Oklahoma Hlth. Sci. Ctr. and Univ. of Central Oklahoma.

P367 **118.9** An *Nfil3-Zeb2-Id2* pathway imposes *Irf8* enhancer switching during cDC1 development. **P. Bagadia**. Washington Univ. Sch. of Med. in St. Louis.

P368 **118.10** Plasma cells are obligate enhancers of age-associated myeloid skewing. **P. Pioli, D. Casero, E. Montecino-Rodriguez, S.L. Morrison and K.A. Dorshkind**. Univ. of California, Los Angeles.

P369 **118.11** Merocytic dendritic cell: a new subset of conventional dendritic cells. **C. Audiger and S. Lesage**. Univ. of Montreal, Canada.

P370 **118.12** Histone Deacetylase 3 regulates the ontogeny and maintenance of tissue-resident macrophages. **Y. Yao, Q. Liu, F. Geissmann, L. Zhou and Q-S. Mi**. Henry Ford Hlth. Sys. and Mem. Sloan Kettering Cancer Ctr.

P373 **118.13** IL7R regulates fetal tissue resident macrophage development. **G. Leung, T. McCann, C.H. Valencia, A. Worthington, C. Forsberg and A.E. Beaudin**. Univ. of California, Merced and Univ. of California, Santa Cruz.

P375 **118.14** Bone marrow resident Tregs maintain stromal cell function via IL-10. **V. Camacho, S. Patel, V. Matkins, H.R. Turnquist and R.S. Welner**. Univ. of Alabama, Birmingham and Univ. of Pittsburgh Sch. of Med.

P401 **118.15** Protein kinase C activates multiple pathways to induce dendritic cell differentiation. **C.A. Chavel and K.P. Lee**. Roswell Park Cancer Inst.

P403 **118.16** Sclerostin depletion may induce inflammation in the bone marrow. **C. Donham, G. Loots and J. Manilay**. Univ. of California, Merced.

P402 **118.17** Metabolic pathways that mediate expansion and homeostasis of hematopoietic lineages. **H.A. Pizzato, W.Y. Lam, B.N. Finck, M.J. Wolfgang and D. Bhattacharya**. Washington Univ., St. Louis and Johns Hopkins Univ.

P404 **118.18** Isthmin 1 identifies a subset of lung hematopoietic stem cells and it is associated with systemic inflammation. **G. Rivera-Torruco, C.A. Mendiola, T. Angeles Floriano, R. Franco, I. Parra-Ortega, A. Vilchis, J. Maravillas-Montero, R. García-Contreras, O. Medina Contreras, P. Nava, V. Ortiz-Navarrete, P. Licona-Limon and R. Valle-Rios**. CINVESTAV-IPN, Mexico, Hosp. Infantil de México Federico Gómez, Mexico, Instituto Nacional de Rehabilitación Luis Guillermo Ibarra, Mexico, UNAM, Mexico, Facultad de Medicina, UNAM, Mexico and Instituto de Fisiología Celular, UNAM, Mexico.

119. IMMUNITY OF ASTHMA

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P413 **119.1** Combined immune and airway epithelial cell profiles define asthma severity phenotypes. **T.B. Oriss, X. Zhou, M. Camiolo, K.L. Scholl, M. Gorry, M. Gauthier, P. Ray, S.E. Wenzel, K.C. Nadeau and A. Ray**. Univ. of Pittsburgh Sch. of Med. and Stanford Univ.

P410 **119.2** Is absence of acute inflammatory diseases a hallmark of chronic conditions? A clinical investigation into asthma patients' case histories. **S. Mahesh, M. Mallappa, D. Tsintzas and G. Vithoulkas**. International Acad. of Classical Homeopathy, Greece.

P428 **119.3** Induced hyperglycemia promotes sensitization and exacerbates allergic inflammation in a mouse model of asthma. **A. Queener, B.M. Jeong, T.C. Doan, S.E. Chiarella, M.T. Walker, M.E. Coden, R. Nagasaka and S. Berdnikovs**. Northwestern Univ.

P427 **119.4** Sox9 deletion in the intestinal epithelium increases house dust mite induced allergic asthma symptoms in mice. **M.R. Joldrichsen, E. Kim, Z. Attia, I.C. Davis, E. Comet-Boyaka and P.N. Boyaka**. The Ohio State Univ.

P405 **119.5** FLX193: a potent, selective CCR4 antagonist for allergic disorders. **A. Jorapur, L. Marshall, D. Bradford, M. Brovarney, D. Chian, A. Wadsworth, J. Sanchez, S. Jacobson, E. Karbarz, O. Robles, A. Younai, J. Ketcham, A. Ng, P. Tivitmahaisoon, D. Pookot, S. Marubayashi, N. Kozon, C. Colas, A. Okal, G. Cutler, D. Wustrow, J. Schwarz, O. Talay, D. Brockstedt and B. Wong**. Flxbio, Inc.

P422 **119.6** Contribution of protein arginine methyltransferase (PRMT)5 to house dust mite asthma. **M. Guerau-De-Arellano, S. Sengupta, S. Amici, L. Webb, K. Weiss and K. Asosingh**. Col. of Med., Ohio State Univ., Ohio State Univ. and Cleveland Clin.

P430 **119.7** Treatment with benign IgE reduces asthma symptomology in a mast cell dependent manner. **R. Martin, M.P. Zellner, J.C. Lownik and A.J. Luker**. Virginia Commonwealth Univ.

P431 **119.8** Rifampicin ameliorates inflammatory responses in asthma experimental animal model. **T.J. Kang, J.W. Park, A.V. Prakash, K-J. Boo, Y.R. Kim and J-w. Seong**. Institue of Chronic Dis., Col. of Pharmacy, Sahmyook Univ.

P434 **119.9** Poly(ADP)ribose polymerase inhibition by gene knockout or pharmacologically by olaparib restores steroid sensitivity in murine model of steroid-resistant asthma. **M.A. Ghonim, J. Wang, S.V. Ibba, H. Luu and H. Boulares**. Louisiana State Univ. Hlth. Sci. Ctr.

P432 **119.10** *Sargassum horneri* ethanol extract down-regulates the Th2 polarization via STAT5 in ovalbumin sensitized murine splenocytes. **S.P. Mihindukulasooriya, K.H.I.N.M. Herath, A. Kim, H.J. Kim, M-O. Ko, Y-J. Jeon and J. Youngheun**. Jeju Natl. Univ.

P425 **119.11** *Bacillus subtilis*-mediated suppression of house dust mite allergic airway inflammation. **J.A. Swartzendruber, O. Negris, R. Incrocci and K.L. Knight**. Midwestern Univ. and Loyola Univ. Med. Ctr.

P424 **119.12** Glucocorticoids control allergic inflammation via Foxp3$^+$regulatory T cells. **Q.T. Nguyen and B. Min**. Cleveland Clin. Fndn.

P411 **119.13** IL-9-secreting tissue-resident memory CD4+ T cells contribute to allergic airway recall responses. **B.J. Ulrich, Y. Fu, B. Koh, R. Kharwadkar and M.H. Kaplan**. Indiana Univ. Sch. of Med.

P418 **119.14** WITHDRAWN

P420 **119.15** The transcriptional repressor Blimp-1 promotes Th2 development and lung inflammatory disease in a house dust mite-induced model of allergic asthma. **A.C. Poholek, A. Hettinga, K. He, S. Kale, E. Schmitz, S. Pandya, M.M. Xie, A. Dent, T.B. Oriss and A. Ray**. Univ. of Pittsburgh Sch. of Med. and Indiana Univ., Purdue Univ. Indianapolis.

P429 **119.16** Metabolic differences between Th2 and Th17 cells in airway inflammation. **D.C. Contreras, J. Cephus, D. Newcomb and J.C. Rathmell**. Vanderbilt Univ. Med. Ctr.

P433 **119.17** Inhibition of allergen-specific tissue resident memory Th2 cells through blockade of CD3-mediated signaling ameliorates allergic lung inflammation. **D.T. Gracias, R.K. Gupta and M. Croft**. La Jolla Inst. for Immunology.

P421 **119.18** Endogenous UDP-Glc acts through the purinergic receptor $P2RY_{14}$ to exacerbate eosinophilia and airway hyperresponsiveness in a protease model of allergic asthma. **T. Karcz, G. Whitehead, H. Nakano, K.A. Jacobson and D.N. Cook**. NIEHS, NIH and NIDDK, NIH.

P426 **119.19** Inhibiting host DNA release prevents mixed neutrophilic/eosinophilic airway inflammation in severe asthma phenotype. **S. Chung, M. Karpurapu and J.W. Christman**. The Ohio State Univ.

P406 **119.20** Clearance of apoptotic cells by lung macrophages prevents development of house dust mite-induced asthmatic lung inflammation. **H. Miki, D.T. Gracias and M. Croft**. La Jolla Inst. for Allergy and Immunology.

P415 **119.21** The complex allergen house dust mite acts directly on macrophages to stimulate noncanonical autophagy. **H. Gao, X. Qi, W. Jackson and A. Keegan**. Univ. of Maryland Sch. of Med.

P409 **119.22** OPN receptor expression on immune effector cells in RSV infection is regulated by NKT cells. **M.H. Qureshi, O. Qureshi and K. Durre**. California Hlth. Sci. Univ. Col. of Osteo. Med., Yale Col. and Touro Univ. of Nevada Col. of Osteo. Med.

P407 **119.23** Ly-$6C^{+}CD11b^{+}$ conventional dendritic cells accumulate in inflamed lung and differentiate into type 2 dendritic cells. **G. Izumi, K. Nakano, S.Y. Thomas, G. Whitehead, S.A. Grimm, H. Nakano and D.N. Cook**. NIEHS, NIH.

P412 **119.24** Effect of different adjuvants on various immune cells and cytokines in allergic asthma mouse model. **H.S. Shin, H.R. Chun, HY. Na, M. Sohn, S.H. Ryu, W. Choi, H. In, J.S. Park and C.G. Park**. BK21 PLUS Project for Med. Sci., Yonsei Univ. Col. of Med., South Korea and Yonsei Univ., South Korea.

P417 **119.25** IRF4 expression by lung dendritic cells drives a Th2 program throughout the effector and memory allergic responses. **D.F. Camacho, E. Wang, C.L. Howard, D.C. Decker, K.M. Blaine, E.P. Darnell, P.A. Krishack, C.L. Hrusch, J.J. Moon and A.I. Sperling**. Univ. of Chicago and Harvard Med. Sch.

P423 **119.26** Impaired tumor-necrosis-factor-α-driven dendritic cell activation limits lipopolysaccharide-induced protection from allergic inflammation in infants. **K. Kaur, H. Bachus, A.M. Papillion, T.T. Marquez-Lago, Z. Yu, A. Ballesteros-Tato, S. Matalon and B. Leon-Ruiz**. Univ. of Alabama, Birmingham.

P408 **119.27** The function of the circulating innate lymphoid cells is dysregulated in patients with mild asthma. **L.Y. Drake, K. Bachman and H. Kita**. Mayo Clin.

P414 **119.28** Critical role for IL-33 in orchestrating group 2 innate lymphoid cell and natural killer cell function in the lungs. **M.M. Ferrini, Z. Jaffar and K. Roberts**. Univ. of Montana.

P419 **119.29** IL-9^{high} $GATA3^{low}$ ILC2s are potent inducers of allergic airway inflammation. **P. Schmitt, A. Duval, S. Roga, M. Camus, O. Burlet-Schiltz, A. Gonzalez-de-Peredo, C. Cayrol and J-P. Girard**. Institut de Pharmacologie et de Biologie Structurale, France.

P416 **119.30** Allergic lung inflammation in offspring of pregnant mice exposed to organic dust. **A.A.N. Nascimento, D. Schneberger, S. Kirychuk, U. Pandher, B. Thompson and B. Singh**. Univ. of Saskatchewan, Canada and Univ. of Calgary, Canada.

P435 **119.31** APD588, a novel, selective S1P receptor modulator, inhibits inflammation and airway hyperresponsiveness in the ovalbumin-induced model of allergic asthma. **C.M. Crosby, H.K. Komori, R. Christopher and J.W. Adams**. Arena Pharmaceuticals and Parallel 33 Consulting.

120. HUMAN HOST DEFENSE

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P436 **120.1** Anti-CD4 autoantibody-mediated failure of CD4+ T cell reconstitution in HIV-infected patients under viral-suppressive ART. **W. Jiang and Z. Luo**. Med. Univ. of South Carolina.

P437 **120.2** Neutrophils contribute to T cell activation via reactive oxygen species production in HIV infection. **G.J. Dunsmore, S. Shahbaz, S. Houston and S. Elahi**. Univ. of Alberta, Canada.

P438 **120.3** Functional impact of a cellular long non-coding RNA on CCR5 expression and HIV infection. **S. Kulkarni, A. Lied, V. Kulkarni, S. singh, M. Rucevic, M.P. Martin, F. Chawdhury, S. Le Gall, X. Yu and M. Carrington**. Texas Biomed. Res. Inst., Ragon Inst. of MGH, MIT and Harvard and NCI, NIH.

P439 **120.4** Loss of testosterone impairs anti-tumor neutrophil function. **J. Markman, D. Wakita, R.A. Porritt, E. Posadas, T.R. Crother and M. Arditi**. Cedars-Sinai Med. Ctr.

P440 **120.5** Role of natural killer cell activity in HIV infections, aging, and breast cancer survival. **R.M. Williams, J. Zuniga, J. Granados and E.J. Yunis**. Northern California Cancer Ctr. and Res. Institute, Institute of Respiratory Dis., Mexico, Inst. of Nutrition, Mexico and Dana Farber Cancer Institute, Harvard Med. Sch.

P441 **120.6** Vδ1+ and Vδ2+ gamma delta T cells express different marker signatures and are distinctly linked to plasma markers of inflammation with ART-suppressed HIV infection and normal aging. **J.E. Snyder-Cappione, R.M. Pihl, A.J. Olson, N. Lin and A.C. Belkina**. Boston Univ. Sch. of Med. and Boston Med. Ctr.

P442 **120.7** Role of *Mycobacterium tuberculosis* expressing unique protein Rv000B in immune modulation of host cell machinery. **S.K. Arora, A. Alam, J. Ahmad, S. Suhasini, N. Naqvi, S.E. Hasnain and N.Z. Ehtesham**. JH Inst. of Molecular Med., India and Natl. Inst. of Pathology, India.

P443 **120.8** IL-15 activates liver sinusoidal mucosal-associated invariant T cells to exert TCR/MR1-independent innate-like cytotoxicity. **M-S. Rha, J.W. Han, JH. Kim, J-Y. Koh, H.J. Park, S.I. Kim, M.S. Kim, J.G. Lee, J.Y. Park, S-H. Park, D.J. Joo and E-C. Shin**. Grad. Sch. of Med. Sci. and Engin., Korea Advanced Inst. of Sci. and Technol., South Korea and Yonsei Univ. Col. of Med., South Korea.

P444 **120.9** Serum antibody profiling healthy toddlers reveals low, intermediate and high response cohorts. **N.S. van Oers, P. Pichilingue-Reto, P. Raj, I. Dozmorov, Q-Z. Li, E.K. Wakeland, N. Kelly and M.T. de la Morena**. Univ. of Texas Southwestern Med. Ctr. and Univ. of Washington.

P445 **120.10** Macrophage heterogeneity correlates with autophagy-dependent anti-mycobacterial activity and ability to present antigen in human macrophages. **V.K. Singh, A. Khan, R. Papanna, L. Mann, J.H. Wan, D. Canaday, S.A. David and C. Jagannath**. Houston Methodist Res. Inst., Univ. of Texas, Houston, Univ. of Texas Hlth. Sci. Ctr., Houston and Univ. of Minnesota.

P446 **120.11** PET imaging of TSPO in a rat model of sepsis induced by peritoneal polymicrobial infection. **T. Barichello, V.V. Giridharan, F. Petronilho, J.S. Generoso, D. Dominguini and F. Dal-Pizzol**. UTHealth, UNISUL, Brazil and UNESC, Brazil.

P447 **120.12** High T cell percentage predicts improved overall survival in de novo acute myeloid leukemia. **J.N. Saultz, W. Wang, E.F. Lind, A. Kaempf, G. Fan, T. Mori and B. Park**. Oregon Hlth. and Sci. Univ.

P448 **120.13** Identification of autophagy markers in clinical cases of sepsis. **C. Madiraju, C.S. Mallarpu, S. Prasad, M. Singarapu, H. Brar, N. Bratic, N. Hariripparsa, J.H. Kim, M. Ponnana and L.K. Chelluri**. Marshall B. Ketchum Univ. and Gleneagles Global Hosp., India.

P449 **120.14** Suppressive role on bacterial resistance of $CD10^{+}Pax5^{+}$cells in alcohol use disorder patients. **Y. Tsuchimoto, A. Asai, H. Ohama, S. Fukunishi and K. Higuchi**. Osaka Med. Col., Japan.

P450 **120.15** Evaluation of T regulatory cells responses in acute and chronic phases of Chikungunya patients. **B.M. Gois, I.C. Guerra-Gomes, R.F. Peixoto, C.S.N. Dias, P.H.S. Palmeira, J.M.G. Araújo and T. Keesen**. Federal Univ. of Paraiba, Brazil, Univ. of São Paulo, Brazil and Federal Univ. of Rio Grande do Norte, Brazil.

P451 **120.16** Clonal expansion within circulating plasmablast populations lends support for an infectious disease etiology of Kawasaki disease. **M. Hicar, J. Hoffman, H. Sojar and S. Baron**. State Univ. of New York, Buffalo.

P452 **120.17** URT bacterial microbiota interacted with H1N1 infection by IL-1 pathway in C57BL/6. **H. li, Q. Wu, L. Guo, N. Li, H. Zheng, H. Li, Z. Yang, X. Huang, J. Yang, M. Chu and L. Liu**. Chinese Acad. of Med. Sci. and Peking Union Med. Col., China.

P453 **120.18** Antigen-induced production of nine cytokines reflects pulmonary tuberculosis severity and predicts patients' responsiveness to treatment. **I.Y. Nikitina, T.A. Nenasheva, Y.H.V. Serdyuk, T.R. Bagdasaryan, V.A. Shorokhova and I.V. Lyadova**. Central Tuberculosis Res. Inst., Russia.

P454 **120.19** Interleukin-27 enhances the function of regulatory T cells to prevent Graft-versus-host diseases. **T.H.N. Le, B.K. Hamilton and B. Min**. Cleveland Clin. Fndn.

P455 **120.20** CD4 T cell transcriptomics reveal novel diagnostic and mechanistic immune signatures of tuberculosis. **J.G. Burel, C.S. Lindestam Arlehamn, M. Pomaznoy, G. Seumois, J.A. Greenbaum, D. Vidanagama, B. Gunasena, R. Tippalagama, A.D. de Silva, R. Taplitz, P. Vijayanand, A. Sette and B. Peters**. La Jolla Inst. for Immunology, Natl. Tuberculosis Reference Lab., Sri Lanka, Natl. Hosp. for Resp. Dis., Sri Lanka, Genetech Res. Inst., Sri Lanka and Univ. of California, San Diego.

P456 **120.21** PPARγ deficiency promotes an adaptive T lymphocyte response to mycobacterial antigen ESAT-6 in a murine model of chronic pulmonary sarcoidosis. **V.L. Sanderford, N. Leffler, A. Malur, A. Mohan, R.A. Barrington, B.P. Barna and M.J. Thomassen**. East Carolina Univ. and Univ. of South Alabama.

P457 **120.22** Resistin immunomodulation in healthy and septic patients. **J. Li, J. Bonenfant, L. Nasouf, J. Miller, A. Mittal, W. Klein and M.G. Nair**. Univ. of California, Riverside and Riverside Univ. Hlth. Syst.

P458 **120.23** Identification of new T cell epitopes in the mold aeroallergen *Aspergillus fumigatus*. **L. Sternberg, G. Seumois, S. Paul, J. Sidney, V.M.J. Schulten, A. Sette, P. Vijayanand and B. Peters**. La Jolla Inst. for Immunology.

P459 **120.24** HIV infection drives immune activation of angiogenic T cells. **L. Tong, M. Schmidt, Z. Zhu, J. Chen, A. Wellstein, J. Kumar, P. Kumar and M. Catalfamo**. Georgetown Univ. Sch. of Med. and Lombardi Comprehensive Cancer.

P460 **120.25** Endoplasmic reticulum stress regulates immunosuppressive function of myeloid derived suppressor cells in leprosy. **K. Kelly-Scumpia, R. Shirazi and R. Modlin**. Univ. of California, Los Angeles.

P461 **120.26** Commensal microbiota as possible pathobiont in autoinflammatory disease. **J. Siak, A. St. Leger, K. Raychaudhuri, M. Mattapallil, I.J. Fuss, R. Goldbach-Mansky, W. Strober and R.R. Caspi**. NEI, NIH, Univ. of Pittsburgh Sch. of Med., NIH and NIAID, NIH.

P462 **120.27** Release of transglutaminase 2 from respiratory syncytial virus-infected airway epithelial cells and its role in disease pathogenesis. **Y.M. Hosakote, K. Rayavara and A. Kurosky**. The Univ. of Texas Med. Br.

P463 **120.28** Modulation of respiratory syncytial virus-induced epithelial proinflammatory mediator HMGB1 via activation of histone deacetylase. **K. Rayavara Kempaiah, A. Kurosky and Y.M. Hosakote**. Univ. of Texas Med. Br.

P464 **120.29** DNA gene expression to study the immunologic mechanisms for long-term immunity against malaria in babies and children in South-Western Nigeria. **J.T. Thornthwaite, O.E. Akanni, A.A. Ademola and A.A. O.A.T**. Cancer Res. Inst. of West Tennessee and Ladoke Akintola Univ. of Technol.

P465 **120.30** Skin transcriptomics reveals novel insights into pathophysiological mechanisms in humanized mice models of group A streptococcal necrotizing soft tissue infections. **S. Nookala, S. Mukundan, A. Scheidegger, G. Ambigapathy, C. Combs and M. Kotb**. Univ. of North Dakota.

P466 **120.31** Eosinophilic esophagitis has a sub-epithelial regulatory adaptive immune response. **E. Lin, A. Lucendo, H. Appelman, D. Delker, M. Hazel, M. Wechsler, M. Yandell and F. Clayton**. Univ. of Utah, Servicio de Salud de Castilla-La Mancha, Spain, Univ. of Michigan Med. Sch. and Natl. Jewish Hlth.

P467 **120.32** Chronic HCV infection, HCV/HIV coinfection and older age are independently associated with naïve CD4+CD31+ lymphopenia. **A. Auma, C. Kowal, E. Zebrowski, S. Damjanovska, C. Shive, M. Osborne, R. Kalayjian and D.D. Anthony**. Case Western Reserve Univ. Sch. of Med., Louis Stokes VHA Med. Ctr. and MetroHlth. Med. Ctr.

P468 **120.33** Harnessing single cell analysis to characterize the role of MAIT cells in ulcerative colitis. **S.M. Sharma, L. Gioia, B. Abe, M. Holt, A. Costanzo, L. Kain, A. Su and L. Teyton**. Scripps Res. Inst.

P469 **120.34** Alterations of specific lymphocytic subsets with ageing and with aged-related metabolic and cardiovascular diseases. **C.L. Liu, V.T.N. Tram, C.H. Lin, K.C. Liao and Y.J. Chen**. Sch. of Med. Lab. Sci. and Biotechnology, Taipei Med. Univ., Taiwan and Chang Gung Mem. Hosp., Taiwan.

P470 **120.35** Macrophage-associated lipin-1 enzymatic activity promotes inflammation in vitro and in vivo. **A.E. Vozenilek and M.D. Woolard**. Louisiana State Univ. Hlth. Sci. Ctr. Shreveport.

121. B CELLS AND TfH CELLS

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P471 **121.1** Production of peanut-specific IgE in a food allergy model is promoted by T follicular regulatory cells via an IL-10-dependent pathway. **M.M. Xie, H. Liu, K. Yang and A. Dent**. Indiana Univ. Sch. of Med.

P472 **121.2** How TLR9 signaling shapes the survival, differentiation and the metabolism of B cells. **M. Akkaya, B. Akkaya, B. Theall, J. Traba, M. Pena and S.K. Pierce**. NIAID, NIH and NHLBI, NIH.

P473 **121.3** Regulation of B-cell-mediated immune responses by a PX domain-containing protein. **D-J. Jung, G. You, A. Park and Y-M. Kim**. Korea Advanced Inst. of Sci. and Technol., South Korea and Pohang Univ. of Sci. and Technol., South Korea.

P474 **121.4** Interleukin-27-producing B cells are critical regulators of immunity during persistent viral infection. **I. Pratumchai, Z. Huang, J. Zak and J.R. Teijaro**. Scripps Res. Inst.

P475 **121.5** Modulation of B cell metabolic activation and cellular function by toll-like receptors. **B.P. Theall, T. Henke, B. Akkaya, A. Roesler, J. Traba, A. Sharma, S.K. Pierce and M. Akkaya**. NIAID, NIH and NHLBI, NIH.

P476 **121.6** Distinct antibody repertoire of cerebral spinal fluid B cells from healthy controls. **S. Husain-Krautter, D. Vos, J.A. Gallego, A.K. Malhotra and T.L. Rothstein**. Delaware Psychiatric Ctr., Western Michigan Univ. Homer Stryker MD Sch. of Med., Weill Cornell Med. Col. and Zucker Hillside Hosp.

P477 **121.7** The surprising role of indoleamine 2,3-dioxygenase in supporting the survival of bone marrow-resident long-lived plasma cells. **S.M. Lightman, L.M. Carlson and K.P. Lee**. Roswell Park Cancer Inst.

P478 **121.8** Metabolic reprogramming of human pro-inflammatory B cells in aging and obesity. **B. Blomberg, A. Diaz, M. Romero and D. Frasca**. Univ. Miami Miller Sch. of Med.

P479 **121.9** Cell-specific inhibition of SMAD2/3 restores lymph node cellularity and germinal center function in aged mice responding to acute chikungunya virus infection. **J. Uhrlaub, Y-S.S. Yang, M.B. Melo, D.J. Irvine and J. Nikolich-Zugich**. Univ. of Arizona and Massachusetts Inst. of Technol.

P700 **121.10** T follicular helper cell recruitment to the ischemic brain. **L.T. Kissel, A. Rayasam, J. Kijak, Y.H. Choi, M. Hsu, K. Kovacs, M. Sandor and Z. Fabry**. Univ. of Wisconsin, Madison, Univ. of California, San Francisco, Med. Col. of Wisconsin and Univ. of Wisconsin Sch. of Med. and Publ. Hlth.

P701 **121.11** Induction of T cell-independent hypermutated and protective IgG and IgA antibody responses by TLR4-BCR or TLR5-BCR co-engagement. **C.E. Rivera, D. Chupp, H. Yan, J. IM, J. Wang, H.N. Sanchez, S. Wu, J. Taylor, H. Zan, Z. Xu and P. Casali**. Univ. of Texas Hlth. Sci. Ctr. San Antonio.

P702 **121.12** B cell-intrinsic and lymphocyte extrinsic miR-21 drive optimal germinal center and antibody responses. **S.L. Schell, N. Choi and Z.S.M. Rahman**. Pennsylvania State Univ. Col. of Med.

P703 **121.13** Clonal selection of cross-reactive memory B cells dominates recall responses against heterologous flaviviruses without a requirement for secondary affinity maturation. **R. Wong, J. Richner, H. Zhao, M.J. Shlomchik, M.S. Diamond and D. Bhattacharya**. Washington Univ., St. Louis and Univ. of Pittsburgh.

P704 **121.14** B cell anergy: Atheroprotective, yet vulnerable to atherosclerotic conditions. **T. Waseem, W.C. Keeter, A. Moriarty, S. Edemobi, M. Pham, A. Getahun, J.C. Cambier and E. Galkina**. Eastern Virginia Med. Sch. and Univ. of Colorado Anschutz Med. Campus.

P705 **121.15** Dissecting the role of proinflammatory chemokine CCL3 in the selection of germinal center B cells and in secondary antibody responses. **I. Grigorova, Z. Benet and F. Ke**. Univ. of Michigan.

P706 **121.16** T follicular regulatory cells reduce proliferation and downregulate induction of costimulatory molecules on human Tfh and B cells. **I. Sayin, C. Smith, M. Buggert, M.R. Betts and D.H. Canaday**. Case Western Reserve Univ., Karolinska Inst., Sweden and Perelman Sch. of Med., Univ. of Pennsylvania.

P707 **121.17** Discovery of perforin-expressing killer B cells in vertebrates. **J.O. Sunyer, Y. Shibasaki, F. Takizawa, M. Gonzalez and P. Boudinot**. Univ. of Pennsylvania, Fukui Prefectural Univ., Japan and INRA, Université Paris-Saclay, France.

122. INNATE IMMUNITY AND INFECTIOUS DISEASE

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P708 **122.1** Activated plasmodium-specific CD8 T cells find liver stages mostly randomly. **V.S. Zenkov**. Univ. of Tennessee.

P709 **122.2** Upregulation of intestinal tumor growth factor-β1 is associated with increased intestinal epithelial cell apoptosis in pathogenic simian immunodeficiency virus infection. **B. Pahar, D. Pan, S. Srivastav and A. Das**. Tulane Natl. Primate Res. Ctr. and Tulane Univ.

P710 **122.3** The lysophosphatidylcholine transporter, MFSD2A, is essential for $CD8^+$ memory T cell maintenance and secondary response to infection. **L.M. D'Cruz, A. Piccirillo, E. Hyzny, A. Menk, C. Wallace, W.F. Hawse, H.M. Buechel, B. Wong, J.C. Foo, A. Cazenave-Gassiot, M. Wenk, G.M. Delgoffe, S. Watkins and D. Silver**. Univ. of Pittsburgh, Univ. of Pittsburgh Cancer Inst., National Univ. of Singapore, Singapore and Univ. of Pittsburgh Cancer Instit.

P711 **122.4** GRK2 regulated CXCR4 expression mediates bone marrow ILC2 mobilization in sepsis. **. Shu, D. Lai, W. Chen, Q. Chen, X. Fang and J. Fan**. Zhejiang Univ. Sch. of Med., China. and Univ. of Pittsburgh Sch. of Med.

P712 **122.5** PD-1 signaling impacts T cell function during the early phase of infection with *Toxoplasma gondii*. **J.A. Perry, J. Delong, J. Clark, J. Park, J. Gullicksrud, L. Shallberg, C. Konradt, D. Christian and C. Hunter**. Univ. of Pennsylvania.

P713 **122.6** PGAM1 hypomethylation drives aerobic glycolysis in CD4 T cells to facilitate the host defense against tuberculosis. **X. Chen, J. Zhu, C. Zhu, F. Gao and Y. Cai**. Shenzhen Univ. Sch. of Med., China, Beijing Chest Hosp., Capital Med. Univ., China and Chinese Acad. of Agr. Sci., China.

P714 **122.7** Invariant NKT cells functionally link microbiota-induced butyrate production and joint inflammation. **S. Lee, H.Y. Kim and D. Chung**. Seoul Natl. Univ. Col. of Med., South Korea.

P715 **122.8** T-bet deficiency impairs CD4 T cell effector trafficking to influenza A virus infected lungs but not their anti-viral functions. **K. Dhume, C. Finn and K.Kai McKinstry**. Univ. of Central Florida Col. of Med.

P716 **122.9** Effect of malaria pathology on CD4 and immune cells. **E.C. Amadi, E. Eze and V. Chigor**. Enugu State Univ. of Science and Technol., Nigeria and Univ. of Nigeria Nsukka, Nigeria.

P717 **122.10** Costimulation of type-2 innate lymphoid cells by GITR promotes effector function and ameliorates type 2 diabetes. **L. Galle, I. Sankaranarayanan, B.P. Hurrell, E. Howard, R. Lo, H. Maazi, G. Lewis, H. Banie, A.L. Epstein, P. Hu, V.K. Rehan, F.D. Gilliland, H. Allayee, P. Soroosh, A.H. Sharpe and O. Akbari**. Univ. of Southern California, Janssen Pharmaceutical Co. of Johnson & Johnson, Harbor-UCLA and Harvard Med. Sch.

P718 **122.11** The role of innate immune cells in contact hypersensitivity. **K. On, S. Tikoo, R. Jain and W. Weninger**. Centenary Inst. of Cancer Med. and Cell Biol., Australia.

P719 **122.12** The IL-12/STAT4 pathway associates with critical functions in neutrophils. **W.C. Keeter, A. Moriarty, K. Ma, L. Glenn, T. Waseem, F. Lattanzio, S. Edemobi, J. Nadler, M.H. Kaplan and E. Galkina**. Eastern Virginia Med. Sch., Easter Virginia Med. Sch. and Indiana Univ. Sch. of Med.

P720 **122.13** Infant T cells exhibit increased TCR signaling and proliferation to respiratory infection. **P. Thapa, R.S. Guyer and D.L. Farber**. Columbia Univ. Med. Ctr.

P721 **122.14** Characterizing the movement strategy of CD8+ T cells in finding malaria parasites in the liver. **V.V. Ganusov, H. Rajakaruna, J. O'Connor, V.S. Zenkov and I.A. Cockburn**. Univ. of Tennessee and Australian Natl. Univ., Australia.

P722 **122.15** Dermal fibroblasts control mast cell reactivity to commensal bacteria. **Y-L. Chang, K. Sriram, Z. Wang, S. Igawa, C-C. Wu, P. Insel and A. Di Nardo**. Sch. of Med., Univ. of California, San Diego.

P723 **122.16** Natural killer cell inhibition of HIV vaccine responses. **I.E. Gyurova, J.P. McNally, C.E. Rydyznski and S.N. Waggoner**. Cincinnati Children's Hosp. Med. Ctr.

P724 **122.17** Allo-specific NK cells differentially regulate T cell allo-immunity depending on prenatal education. **H.K. Kang, L. Turner, C. Redden and A.F. Shaaban**. Lurie Children's Hosp., Northwestern Univ.

123. B CELL IMMUNITY

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P725 **123.1** PU.1 and IRF8 regulate the transcriptional landscapes differently in naïve and activated B cells. **H. Wang, P. Li, J. Lin, J. Oh, S. Bolland, W.J. Leonard and H.C. Morse**. NIAID, NIH and NHLBI, NIH.

P726 **123.2** Tumor necrosis factor receptor associated factor 3 regulates B cell antigen receptor signaling. **A.L. Whillock and G.A. Bishop**. Univ. of Iowa Carver Col. of Med.

P727 **123.3** The *bona fide* structure of IgM pentamer and its binding mode with AIM/CD5L molecule. **T. Miyazaki, E. Hiramoto and S. Arai**. Univ. of Tokyo, Japan.

P728 **123.4** The role of ERK2 in germinal center B cell selection. **A.J. Negron, S. Jeffreys, R. Perez, N. Abdul-Baki and T. Forsthuber**. Univ. of Texas, San Antonio.

P729 **123.5** CD209 activation promotes survival of lymphoblastic human B cells. **A.J. Valentin and G.Y. Díaz**. Universidad Central del Caribe.

P730 **123.6** Effects of antiorthostatic suspension, tetanus toxoid, and CpG on the bone marrow antibody repertoire in C57BL/6 mice. **T.A. Rettig, N.C. Nishiyama, M.J. Pecaut and S.K. Chapes**. Loma Linda Univ. and Kansas State Univ.

P731 **123.7** APRIL signaling in human antibody secreting cells promotes cellular response via p38 and differential immediate early gene regulation. **S.J. Stephenson, M.A. Care, G.M. Doody and R.M. Tooze**. Univ. of Leeds, United Kingdom.

P732 **123.8** Epigenetic priming underpins enhanced memory B cell differentiation. **M.J. Price, C.D. Scharer, A.K. Kania, T. Mi, S.L. Hicks, T.D. Randall and J. Boss**. Emory Univ. and Univ. of Alabama, Birmingham.

P733 **123.9** Linking endoplasmic reticular Stress, ELL2, and alternative splicing. **C. Milcarek**. Univ. of Pittsburgh Sch. of Med.

P734 **123.10** Intrinsic function of STAT3 in B cells is to promote B cell proliferation and maturation. **F. Oladipupo, C.E. Egwuagu, C-R. Yu and J.K. Choi**. NEI, NIH.

P735 **123.11** CD28 regulates autophagy to enhance plasma cells survival. **P. Peng, C. Chavel, A. Utley, L. Carlson and K.P. Lee**. Roswell Park Cancer Inst.

P736 **123.12** Inositol polyphosphates promote T cell-independent humoral immunity via the regulation of Bruton's tyrosine kinase. **R.H. Seong, W. Kim and H. Min**. Sch. of Biological Sci., Seoul Natl. Univ., South Korea.

P737 **123.13** O-GlcNAcylation of c-Myc dynamically regulates pre-B cell proliferation. **S-K. Park**. Korea Res. Inst. of Bioscience and Biotechnology, South Korea.

P739 **123.14** Integrative analysis of human memory B cell coding and non-coding transcriptomes. **J.B. Moroney, A. Vasudev, J.R. Taylor, H. Zan, A. Pertsemlidis and P. Casali**. Univ. of Texas Long Sch. of Med., UTHealth, San Antonio.

P740 **123.15** TET enzymes augment AID expression via 5hmC modifications at the *Aicda* superenhancer. **C-W.J. Lio, V. Shukla, D. Samaniego-Castruita, E. Gonzalez Avalos, A. Chakraborty, X. Yue, D.G. Schatz and A. Rao**. La Jolla Inst. for Immunology and Yale Univ. Sch. of Med.

P741 **123.16** Temporal dynamics of the serological compartment of rabbit antibody repertoires. **A. Patel, S.R. Bonissone and N. Castellana**. Digital Proteomics.

P742 **123.17** Direct activation of Toll-like receptors induce differential B cell responses. **A.J. Nelson and Y.L. Wu**. Loyola Univ. Chicago.

P743 **123.18** Physiological V(D)J recombination is mediated by RAG scanning of loop-extruded chromatin. **Y. Zhang, X. Zhang, Z. Liang, Z. Ba, E. Dring, J. Zurita, A.P. Aiden, E.L. Aiden and F.W. Alt**. Western Michigan Univ. Homer Skryker Sch. of Med., Boston Children's Hosp. and Baylor Col. of Med.

P738 **123.19** Differential gene expression of the B cell receptor signaling pathway during pregnancy in mice. **N.J. Valeff, D. Muzzio, M. Abba, M. Zygmunt and F. Jensen**. CEFYBO-CONICET, Argentina, Med. Fac., Greifswald Univ., Greifswald, Germany and CINIBA-UNLP, Argentina.

P744 **123.20** Human plasma cells switch on and turn off antibody secretion. **D.C. Nguyen, C. Saney, A. Ley, I. Sanz and F.E-H. Lee**. Emory Univ.

P745 **123.21** Innate signaling pathways contribute towards formation of the extra-follicular B cell response. **J. Lam and N. Baumgarth**. Univ. of California, Davis.

P746 **123.22** IL-21 is a major suppressor of IgE production in mice and humans. **C.D.C. Allen, Z. Yang, C-A.M. Wu and S. Targ**. Univ. of California, San Francisco.

P747 **123.23** A screening platform for human plasma cells reveals a selective response to SYK inhibition. **M. Campbell, S.J. Stephenson, K. Whale, S. Rapecki, H. Finney, G.M. Doody and R.M. Tooze**. Univ. of Leeds, United Kingdom and UCB, United Kingdom.

124. MOLECULAR MECHANISMS OF HELPER T CELL DIFFERENTIATION

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P748 **124.1** Sumoylation of RORgt regulates T_H17 differentiation and thymocyte development. **Z. Sun, Z. He, J. Zhang, Z. Huang, Q. Du, N. Li, Q. Zhang and Y. Chen**. Beckman Res. Inst., City of Hope, Sun Yat-sen Univ., China, Fudan Univ., China and Tianjin Med. Univ., China.

P749 **124.2** Reciprocal regulation of Th2 and Th17 cells by PAD2-mediated citrullination. **B. Sun, H-H. Chang, A. Salinger, B. Tomita, M. Bawadekar, M.A. Shelef, E. Weerapana, P.T. Thompson and I-C. Ho**. Brigham and Women's Hosp., Univ. of Massachusetts Med. Sch., Univ. of Wisconsin, Madison and Boston Col.

P752 **124.3** Cellular retinoic acid binding protein 2 serves as a critical regulator in immune regulation and inflammation. **I. Takazawa, A. Larange and H. Cheroutre**. La Jolla Inst. for Immunology.

P751 **124.4** VSTM4 is a novel negative regulator of T cell activation. **J. Wang, B. Manick, M. Renelt, J. Suin, L. Hansen, A. Person, V. Kalabokis and G. Wu**. R&D Systems, Bio-techne.

P753 **124.5** IL-1β regulates IL-33-mediated T helper 2-biased immunopathophysiology following respiratory syncytial virus infection in an age-dependent and caspase-1 independent manner. **L.D. Vu, D.T. Siefker, D. You, J.P. DeVincenzo, A.T.Q. Phan and S.A. Cormier**. Louisiana State Univ. and Louisiana State Univ. Sch. of Vet. Med., Univ. of Tennessee Hlth. Sci. Ctr. and Children's Fndn. Res. Inst., Le Bonheur Children's Hosp.

P754 **124.6** Novel roles for the Ikaros zinc finger transcription factor Eos in regulating T_H2 differentiation. **M.N. Rasheed, B. Sreekumar, S.C. Moon, M.D. Powell, K. Read and K.J. Oestreich**. Virginia Tech Carilion Sch. of Med. and Biomed. and Vet. Sci. Grad. Program, Virginia-Maryland Col. of Vet. Med.

P756 **124.7** T-cell signaling in Th17-mediated inflammation. **T-H. Tan and H-C. Chuang**. Natl. Hlth. Res. Inst., Taiwan.

P757 **124.8** Tbet provides survival advantage to Tregs during type 1 inflammation. **B. Akkaya, M. Akkaya, J.A. Al Souz, A.H. Holstein, M. Maz, J. Kabat, O. Kamenyeva and E.M. Shevach**. NIAID, NIH, LIG, NIAID, NIH, LISB, NIAID, NIH and RTB, NIAID, NIH.

P758 **124.9** Helios predisposes human fetal $CD4^+$ naive T cells toward regulatory T cell differentiation. **M. Ng, T. Roth, V. Mendoza, A. Marson and T. Burt**. Univ. of California, San Francisco.

P759 **124.10** Batf promotes and stabilizes Th17 cell development by antagonizing the actions of STAT5. **D. Pham, D.J. Silberger, R.D. Hatton and C.T. Weaver**. Univ. of Alabama at Birmingham.

P760 **124.11** Cooperative roles for Aiolos and STAT3 in T_H17 differentiation. **S.C. Moon, B. Sreekumar, M.N. Rasheed, K. Read, M.D. Powell and K.J. Oestreich**. Carilion Sch. of Med., Virginia Polytechnic Inst. and State Univ., Virginia Polytechnic Inst. and State Univ. and Virginia-Maryland Col. of Vet. Med.

P761 **124.12** Regulation of Tfh cell development through STAT1 signaling. **L. Qin, A. Sahoo, Y. Zhao, A. Alekseev and R.I. Nurieva**. Univ. of Texas MD Anderson Cancer Ctr.

P750 **124.13** T-bet expression is fine-tuned for balancing IFN-γ-producing Th1 and Tfh cell differentiation and IgG2a(c) production. **D. Fang, M. Zheng, K. Mao, S.L. Reiner, A. Sher and J. Zhu**. NIAID, NIH and Columbia Univ. Med. Ctr.

P755 **124.14** Transcriptional regulation of IL-10 in T helper cells. **H. Zhang, A. Madi, N. Yosef, N. Chihara, A. Awasthi, C. Pot, L. Apetoh, A. Srivastava, C. Wang, A. Regev and V. Kuchroo**. Brigham and Women's Hosp., Harvard Med. Sch. and MIT and Harvard.

P762 **124.15** Lymph node-fibroblastic reticular cells regulate differentiation of CD4+ T cells through CD25. **T.W. Kim and D-E. Kim**. Grad. Sch. of Med. Sci. and Engin., KAIST, South Korea and Korea Inst. of Oriental Med., South Korea.

125. EPIGENETIC AND METABOLIC REGULATION OF IMMUNITY

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P763 **125.1** Choline uptake and metabolism modulate macrophage immunity. **E. Sanchez-Lopez, Z. Zhong, A. Stubelius, S.R. Sweeney, L. Booshehri, L. Antonucci, R. Liu-Bryan, A. Lodi, R. Terkeltaub, J.C. Lacal, A.N. Murphy, H.M. Hoffman, S. Tiziani, M. Guma and M. Karin**. Univ. of California, San Diego Sch. of Med., Univ. of Texas Southwestern Med. Ctr., Univ. of Texas, Austin and Hosp. Univ. Fuenlabrada, Spain.

P764 **125.2** Regulation of IL-10-producing T cells by polyunsaturated fatty acids. **J. Hernandez Escalante, A. Jones, V. Volfson Sedletsky and H. Dooms**. Boston Univ. Sch. of Med.

P765 **125.3** Electrophilic nitro-fatty acids suppress psoriasiform dermatitis through the inhibition of STAT3 and NF-κB. **P. Wang, M. Killeen and A.R. Mathers**. Univ. of Pittsburgh Sch. of Med.

P766 **125.4** Chromatin interaction maps of active cis-regulatory elements in primary human immune cells reveal extensive overlap with disease-associated genetic variants. **V. Chandra, S. Bhattacharyya, B.J. Schmiedel, A. Madrigal, F. Ay and P. Vijayanand**. La Jolla Inst. for Immunology.

P767 **125.5** A new crucial role for complement receptor CD46 in chromatin packaging and direct gene regulation. **P. Singh, N. Kunz, G. Le Friec, M. Kazemian, B. Afzali, P. Lavender and C. Kemper**. Lab. of Molec. Immunology and Immunology Ctr., NHLBI, NIH, Sch. of Immunology and Microbial Sci., King's College London, United Kingdom, Immunoregulation Section, Kidney Dis. Branch, NIDDK, NIH and School of Immunology and Microbial Sci., King's College London, United Kingdom.

P768 **125.6** CTCF is necessary for $CD8^+$ effector T cell differentiation. **S.J. Quon, B. Yu, Z. He, B. Russ, S.J. Turner, C. Murre and A.W. Goldrath**. Univ. of California, San Diego and Univ. of Melbourne, Australia.

P769 **125.7** Investigating the role of plasma membrane order and disorder in antigen-specific responses by $CD4^+$ T lymphocytes. **A.K. Bamezai, R. Karsalia and S. Sengupta**. Villanova Univ.

P770 **125.8** Lipid droplets in mouse thymus express immune molecules and inhibit antigen-specific $CD4^+$ T cell responses. **A.K. Bamezai, S. Robinson and S. Humrich**. Villanova Univ.

P771 **125.9** 15(S)-HETE plays a regulatory role in the immune inflammatory responses. **J. Choe and B. Kwon**. Kangwon Natl. Univ. Col. of Med. and Kangwon Natl. Univ., Med. and Bio-Materials Res. Ctr., South Korea.

P772 **125.10** DNA methylation impairs monocyte function in tuberculosis leading to disease progression. **F.G. Frantz, R.C. Castro, C. Fontanari, V.R. Bollela and F.A. Zambuzi**. Univ. of Sao Paulo, Pharmacy Sch. of Ribeirao Preto, Brazil and Univ. of Sao Paulo, Brazil.

P773 **125.11** Regulation of T cell activation and pathogenicity by dimeric pyruvate kinase M2. **S. Angiari, C. Sutton, M.C. Runtsch, E.M. Palsson-McDermott, K.H.G. Mills and L.A.J. O'Neill**. Trinity Col. Dublin, Ireland.

P774 **125.12** IL-33 induces a metabolic programming supporting dendritic cells tolerogenicity. **M. Velayutham, A.S. Roessing, S. Shiva and H.R. Turnquist**. Univ. of Pittsburgh Sch. of Med.

P775 **125.13** Co-stimulation–induced AP-1 activity is required for chromatin opening during T cell activation. **A. Barski, M. Yukawa, S. Jagannathan, A.V. Kartashov, X. Chen and M.T. Weirauch**. Cincinnati Children's Hosp. Med. Ctr.

P776 **125.14** Macropinocytosis of amino acids regulates T cell growth by promoting the sustained activation of mTORC1. **J. Charpentier, P.E. Lapinski, J. Turner, I. Grigorova, J.A. Swanson and P.D. King**. Univ. of Michigan Med. Sch.

P778 **125.15** A "sweet spot" for complement receptor CD46 activity via direct regulation of glycolytic vs. moonlighting functions of GAPDH. **N. Kunz, G. Le Friec, P. Singh, P. Lavender, M. Kazemian, C. Hess and C. Kemper**. NHLBI, NIH, Sch. of Immunology and Microbial Sci., King's Col. London, United Kingdom, Purdue Univ. and Univ. of Basel, Switzerland.

P779 **125.16** Reduced glycolytic metabolism in dmLT adjuvant-stimulated human antigen presenting cells concurrent with pro-inflammatory phenotype. **A.J. Harriett, E. Valli, K. Zwezdaryk, S. Agrawal, A. Agrawal and E.B. Norton**. Tulane Univ. Sch. of Med. and Univ. of California-Irvine.

P777 **125.17** XL-DNase-seq: improved footprinting of dynamic transcription factors. **K.S. Oh, J. Ha, S. Baek and M-H. Sung**. NIA, NIH and NCI, NIH.

P801 **125.18** Bach2 attenuates T cell receptor-dependent transcription to fine-tune regulatory T cell differentiation. **T. Sidwell, Y. Liao, A. Vasanthakumar, W. Shi and A. Kallies**. Univ. Melbourne, Australia and The Walter and Eliza Hall Inst. of Med. Res., Australia.

P802 **125.19** Inhibition of cholesterol by simvastatin induces autophagy against *M. tuberculosis* via the mTOR-TFEB axis. **N. Bruiners, N. Dutta, P. Karakousis and M.I. Gennaro**. Rutgers Univ. and Johns Hopkins Univ.

P800 **125.20** DDX5 regulates chromatin lncRNAs to direct T cell programs. **S. Ma, B. Zhou, N. Abbasi, C. Luo, G.W. Yeo, X. Fu and W.J.M. Huang**. Sch. of Med., Univ. of California, San Diego and Chinese Acad. of Sci., China.

126. CELLULAR MECHANISMS OF INNATE IMMUNITY II

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P810 **126.1** Epithelial versus myeloid-derived IL-33 controls different aspects of pathogen-specific immunity. **D.R. Herbert, K. Herbine, L-Y. Hung, C. Pastore, B. Singh, Y. Tanaka, P.J. Bryce and T. Kambayashi**. Univ. of Pennsylvania, Univ. of Pennsylvania Sch. of Vet. Med. and Feinberg Sch. of Med., Northwestern Univ.

P803 **126.2** Basophil-derived tumor necrosis factor can enhance immune responses in a sepsis model in mice. **A.M. Piliponsky, N.J. Shubin, A. Lahiri, P. Truong, M. Clauson, K. Niino, A. Tsuha, S.A. Nedospasov, H. Karasuyama, L. Reber, M.M. Tsai, K. Mukai and S.J. Galli**. Seattle Children's Res. Inst., Russian Acad. of Sci., Russia, Tokyo Med. and Dent. Univ., Japan and Stanford Univ. Sch. of Med.

P808 **126.3** Maternal EGF limits bacterial translocation in the offspring: a model of enterally acquired late onset sepsis. **K.A. Knoop, P. Coughlin, A. Floyd, C. Hall-Moore, M. Ndao, B. Warner, P. Tarr and R. Newberry**. Washington Univ. Sch. of Med.

P824 **126.4** Unique innate functions of fetal macrophage populations. **L.S. Prince, O. Lakhdari and K. Anderson**. Univ. of California, San Diego, and Rady Children's Hosp., San Diego.

P826 **126.5** Microglial antigen presentation is required for antigen-specific CD8 T cell infiltration to the brain parenchyma following CNS viral challenge. **E. Goddery, C. Malo, F. Jin, M. Hansen, J. Fryer, K. Pavelko and A. Johnson**. Mayo Clin. Grad. Sch. of Biomed. Sci., NIAID, NIH and Mayo Clin.

P806 **126.6** Analysis of mGBPs in host defense against the obligate parasite *Toxoplasma gondii*. **N. Steffens, L. Legewie, C. Beuter-Gunia, P. Hanisch, S. Weidtkamp-Peters, S. Hänsch, D. Degrandi and K. Pfeffer**. Heinrich-Heine University, Duesseldorf, Germany.

P832 **126.7** Repeated malaria exposures associate with skewing of monocytes/macrophages toward a regulatory phenotype. **R. Guha, G. Arora, S. Li, D. Doumtabe, O.K. Doumbo, S. Doumbo, K. Kayentao, A. Ongoiba, B. Traore and P.D. Crompton**. NIAID, NIH, Univ. of Sci., Techniques and Technologies of Bamako, Mali and Mali International Ctr. of Excellence in Res., Univ. of Sci., Techniques and Technologies of Bamako, Bamako.

P833 **126.8** Differential effects of glycerophospholipids versus glycosphingolipids on dendritic cell subsets. **R.R. Singh and R. Halder**. David Geffen Sch. of Med., Univ. of California, Los Angeles.

P804 **126.9** CD40 signalling regulates mouse hepatitis virus induced activation of microglia. **F. Saadi, D. Chakravarty and J. Das Sarma**. Indian Inst. of Sci. Educ. and Res., Kolkata, India.

P805 **126.10** Investigation on the role of temperature in macrophage responses. **I.A. Hassan, J.M. Durdik, R. Satyajit, Z. Renfro and H. Blake**. Univ. of Arkansas and Indian Inst. of Sci. Educ. and Res., India.

P807 **126.11** Serum amyloid P component bound to fungal functional amyloid Is anti-phagocytic and anti-inflammatory. **N.E. Bradley, P.N. Lipke, D. Pilling, R.H. Gomer and S.A. Klotz**. Univ. of Arizona, Brooklyn Col. and Texas A&M Univ.

P809 **126.12** Complement C3 increases cardiomyocyte resistance to apoptosis in response to hypoxia. **Z. Fang**. State Univ. of New York Downstate Med. Ctr.

P811 **126.13** The severities of *Pseudomonas aeruginosa* infection are enhanced by group 2 innate lymphoid cells in severely burned mice. **I. Ito, C.C. Finnerty, D.N. Herndon, M. Kobayashi and F. Suzuki**. Univ. of Texas Med. Br.

P812 **126.14** The functional role of CD169+ macrophages in septic shock. **S.T. Yeung and K.M. Khanna**. New York Univ. Sch. of Med.

P813 **126.15** Dual function of galectin-1 in microglial activation of the brain. **S. Jeon, H.J. Yoon and E.J. Park**. Natl. Cancer Ctr., South Korea.

P814 **126.16** Activation of cannabinoid receptor type-1 and type-2 inhibits the release of vascular endothelial growth factor from human neutrophils. **M. Braile, S. Scala, L. Modestino, L. Cristinziano, S. Marcella, A.L. Ferraro, M.R. Galdiero and S. Loffredo**. Univ. of Naples Federico II, Italy.

P815 **126.17** Functional significance of CD40 in the progression of neurotropic virus infection in the central nervous system. **D. Chakravarty, F. Saadi, S. Kundu, A. Bose, R. Khan, K. Dine, L.C. Kenyon, K.S. Shindler and J. Das Sarma**. Indian Inst. of Sci. Educ. and Res., India, Univ. of Pennsylvania and Thomas Jefferson Univ.

P816 **126.18** Characterization of the function of murine guanylate-binding protein 9 in the context of bacterial and parasitic infections. **J. Lichte, D. Degrandi, V. Lindenberg, K. Mölleken, J. Hegemann and K. Pfeffer**. Heinrich-Heine Univ. Duesseldorf, Germany.

P817 **126.19** Neutrophils are more effective than monocytes at containment and killing of *Listeria monocytogenes*. **B. Okunnu and R.E. Berg**. Univ. of North Texas Hlth. Sci. Ctr.

P818 **126.20** Macrophage subsets determine sex differences between male and female immune responses to *Francisella tularensis*. **M.A. Sanchez, D. Martinez and C. Spencer**. Univ. of Texas, El Paso.

P819 **126.21** Female mice express increased complement regulators and decreased intestinal ischemia-reperfusion injury. **S.D. Fleming, J. Ferm and J. Amrein**. Kansas State Univ.

P820 **126.22** P2X5 is required in host immunity to Listeria infection. **Y. Jeong, M.C. Walsh, J. Yu, E.J. Wherry, J. Kim and Y. Choi**. Perelman Sch. of Med., Univ. of Pennsylvania and Univ. of Pennsylvania.

P821 **126.23** Dysregulation of G-CSF and neutrophil production is associated with chronic inflammation in elderly rhesus macaques. **Z. He, N. Takahashi, M. Fahlberg, N. Slisarenko, E. Didier and M. Kuroda**. Univ. of California, Davis and Tulane Natl. Primate Res. Ctr.

P822 **126.24** NLRC4 deficiency enhances macrophage and T cell responses in polymicrobial sepsis. **S. Paudel, L. Ghimire, L. Jin and S. Jeyaseelan**. Louisiana State Univ.

P823 **126.25** Anaphylatoxin receptor C3aR on platelets participates in platelet function and links innate immunity with thrombosis. **R.J. Sauter, M. Sauter, E.S. Reis, F. Emschermann, H. Nording, P. Kraft, M. Mauler, P. Muenzer, J. Rheinlaender, F. Edlich, T.E. Schäffer, S.G. Meuth, D. Duerschmied, O. Borst, C. Kleinschnitz, J.D. Lambris and H. Langer**. Univ. of Luebeck, Germany, Univ. of Tuebingen, Germany, Univ. of Pennsylvania, Univ. of Wuerzburg, Germany, Univ. of Freiburg, Germany, Univ. of Muenster, Germany and Univ. of Essen, Germany.

P825 **126.26** Monocytes subsets and cytokine levels in chronic Chagas disease. **J.M. González, S. Gómez-Olarte, N. Bolaños, M. Echeverry, A. Rodríguez, A. Cuellar, C.J. Puerta and A. Mariño**. Univ. of los Andes, Columbia, Colombian Red Cross, Columbia, Javeriana Pontifical Univ., Columbia and Hosp. Universitario San Ignacio, Columbia.

P827 **126.27** PD-1 is not expressed on highly activated natural killer cells in human and murine models. **S.J. Judge, C. Dunai, I. Sturgill, K. Stoffel, M. Darrow, R. Canter and W.J. Murphy**. Univ. of California, Davis Med. Ctr.

P828 **126.28** Baby's first macrophage: how do placental macrophages (Hofbauer cells) contribute to immune tolerance and infection response during pregnancy? **D. Swieboda, E. Johnson, I. Skountzou and R. Chakraborty**. Emory Univ., Emory Univ. Sch. of Med. and Mayo Clin., Rochester.

P829 **126.29** Distribution and phenotypes of SLAMF9+ myeloid cells in mouse tissues. **J.A. Mikulin and T.J. Wilson**. Miami Univ.

P830 **126.30** Sphingosine 1-phosphate is a harbinger of *S. aureus* invasion and activates host defense in epithelial barriers. **S. Igawa, J.E. Choi, Z. Wang, Y-L. Chang, C-C. Wu, T. Werbel, A. Ishida-Yamamoto and A. Di Nardo**. Univ. of California, San Diego and Dept. of Dermatology, Asahikawa Med. Univ.

P831 **126.31** Perforin-2 dependent intracellular bacterial killing by skin γδ T cells. **K.E. O'Neill, L. Romero, E. Fisher, D. Garcia, T. Wikramanayake, I. Pastar, M. Tomic-Canic and N. Strbo**. Univ. of Miami Miller Sch. of Med.

P834 **126.32** Immunomodulatory capability of VCG in *Chlamydia* immunity. **F. Eko, R. Pais, S. Richardson, Y.O. Omosun, C.M. Black and I. Joseph**. Morehouse Sch. of Med. and CDC.

P835 **126.33** Essential roles of CCL2-CCR2 and C5a-C5aR1 pathways in irritant contact dermatitis. **R. Shibuya, A. Kitoh and K. Kabashima**. Kyoto Univ., Japan.

P836 **126.34** Vitamin D promotes anti-microbial activity of macrophages via complement receptor immunoglobulin. **A. Small, S. Harvey, J. Kaur, T. Putty, A. Quach, U. Munawara, C. Hii and A. Ferrante**. Sch. of Biological Sci., Univ. of Adelaide, Australia and SA Pathology, Australia.

P837 **126.35** Irgm1-deficiency leads to myeloid dysfunction in colon lamina propria and susceptibility to the intestinal pathogen *Citrobacter rodentium*. **G. Hammer, H-I. Huang and G. Taylor**. Duke Univ. Sch. of Med.

P838 **126.36** Noncanonical inflammasome-induced release of alarmins during sepsis. **A.J. Russo, A. Menoret, S. Duduskar, G. Rabinovich, S.D. Deshmukh, A.T. Vella and V. Rathinam**. UConn Hlth., Jena Univ. Hosp. and CEFYBO-CONICET, Argentina.

P839 **126.37** Development of a humanized mouse model for functional testing of biomaterial fibrosis. **D.L. Greiner, J.C. Doloff, A. Sadraei, S. Farah, M.A. Brehm, L.D. Shultz, R. Langer and D.G. Anderson**. Univ. of Massachusetts Med. Sch., Harvard-MIT Div. of Hlth. Sci. and Technol. and The Jackson Lab.

P840 **126.38** Characterization of mouse peritoneal macrophages using novel flow cytometry antibodies. **D. Stepniak, S. Zahner, R. Gerhart, R. Navert and N. Schrantz**. Thermo Fisher Scientific.

P841 **126.39** Mitochondrial alterations in NK lymphocytes from ME/CFS patients. **I.B. Silvestre, R.Y. Dagda, R.K. Dagda and V. Darley-Usmar**. Sch. of Med., Univ. of Nevada and The Univ. of Alabama at Birmingham.

P842 **126.40** TLR5 and TLR7 amplify different stage of myeloid cells. **M. Jung and E.Y. Choi**. Seoul Natl. Univ. Col. of Med., South Korea.

***The JI* Editor-in-Chief Eugene Oltz will be at Booth 1101 today, Saturday, May 11, from 2:30 PM – 3:45 PM.**

127. PATHOGEN CONTROL AND EVASION

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P843 **127.1** A novel quorum-sensing controlled type I effector of *Pseudomonas aeruginosa*, TesG, suppresses host immune response during chronic infection. **X. Zhou, K. Zhao, J. Li and X. Zhang**. Sichuan Univ., China.

P844 **127.2** Egr-1 deficiency protects host against *Pseudomonas aeruginosa* lung infection. **Z. Pang, R. Raudonis and Z. Cheng**. Dalhousie Univ.

P845 **127.3** *Leishmania major* degrades CXCL1 to subvert host immune responses. **P. Gurung, M. Yorek, B. Poudel and L. Mazgaeen**. Univ. of Iowa.

P846 **127.4** Dysregulation of innate interferon signaling by Epstein-Barr virus tegument protein BGLF2. **S. ., K-S. Yuen, V. Chaudhary, M.G. Botelho and D-Y. Jin**. The Univ. of Hong Kong, China.

P847 **127.5** Functional elucidation of miR-494 in modulation of HCV infection. **T-M. Lin and H-L. Eng**. I-Shou Univ., Taiwan and Kaohsiung Chang Gung Mem. Hosp., Taiwan.

P848 **127.6** Suppression of cGAS-STING- and RIG-I-MAVS-mediated innate immune responses by Epstein-Barr virus-encoded tegument protein BPLF1 through de-ubiquitination. **W.Y. Lui, K-S. Yuen and D-Y. Jin**. Univ. of Hong Kong.

P849 **127.7** Transient receptor potential vanilloid 4 regulates the host defense response to bacterial pneumonia through a MAPK molecular switch. **R.G. Scheraga, S. Abraham, L. Grove, B.D. Southern, J. Crish, T.A. Hamilton, C. McD and M. Olman**. Cleveland Clin.

P851 **127.8** mGBP7 interacting proteins in *Toxoplasma gondii* infection and biochemical characteristics of mGBP7. **L. Legewie, J. Loschwitz, S. Smits, M. Prescher, X. Wang, N. Steffens, D. Degrandi, B. Strodel, L. Schmitt and K. Pfeffer**. Heinrich-Heine Univ. Duesseldorf, Germany.

P852 **127.9** E3 ubiquitin ligase NKLAM/RNF19b regulates inflammatory cytokine production in a Sendai virus pneumonia model. **D.W. Lawrence, L. Shornick and J. Kornbluth**. Saint Louis Univ.

P853 **127.10** Investigations of Salmonella motility by the defensin HD6. **D.T. Akahoshi, D. Natwick, S. Collins and C.L. Bevins**. Univ. of California, Davis.

P854 **127.11** PTP1B negatively regulates *Pseudomonas aeruginosa* killing by neutrophil through TLR4-STAT1-iNOS signaling. **L. Yue, M. Yan, H. Li, T. Yang, T-J. Lin and Z. Xie**. Peking Union Med. Col., China, Kunming Med. Univ., China and Dalhousie Univ., Canada.

P855 **127.12** Expression of human TLR4/MD-2 directs an early innate immune response associated with modest increase in bacterial burden during *Coxiella burnetii* infection. **J.F. Hedges, A. Robison, D.T. Snyder, A.M. Hajjar and M.A. Jutila**. Montana State Univ. and Univ. of Washington.

P856 **127.13** The host E3-ubiquitin ligase TRIM6 plays an important role in balancing protective innate antiviral immunity and damaging inflammation. **R. Rajsbaum, L. Aguilera-Aguirre and A. Hage**. Univ. of Texas Med. Br.

P857 **127.14** To understand the role of SteA in the pathogenesis of *Salmonella typhimurium*. **A. Gulati, R. Shukla and A. Mukhopadhaya**. Indian Inst. of Sci. Educ. and Res., Mohali, India.

P860 **127.15** Rapidly evolving PARP proteins act as both positive and negative regulators of the antiviral response. **A. Ryan, J. Schwerk, F. Soveg, R. Savan and M. Daugherty**. Univ. of California, San Diego and Univ. of Washington.

P861 **127.16** Early host responses to cattle gastro-intestinal parasite *Ostertagia ostertagi*. **M. Bakshi, W. Tuo and D. Zarlenga**. USDA-ARS Animal Parasitic Dis. Lab.

P862 **127.17** Innate immune role for the macrophage galactose lectin pathway in pulmonary tuberculosis. **K.F. Naqvi, T.B. Saito, M.B. Huante, B.B. Gelman and J.J. Endsley**. Univ. of Texas Med. Br.

P863 **127.18** STAT2 is a determinant of yellow fever virus host tropism. **J. Morrison, L. Miorin, M. Laurent-Rolle, G. Pisanelli, P. Co, R. Albrecht and A. García-Sastre**. Univ. of California, Riverside, Icahn Sch. of Med. at Mount Sinai, Yale Univ. Sch. of Med. and Queens Col., City Univ. of New York.

P864 **127.19** Activation of AMPK restricts Zika virus replication in endothelial cells by potentiating antiviral response and inhibiting viral-induced glycolysis. **A. Kumar, S. Singh, P. Singh and S. Giri**. Wayne State Univ. Sch. of Med. and Henry Ford Hlth. Sys.

P865 **127.20** Suppression of human STAT2 by ZIKV NS5. **R. Hai, B. Wang, S. Thurmond and J. Song**. Univ. of California, Riverside.

P858 **127.21** Dual oxidase1 ameliorates survival, viral clearance, and pulmonary pathology during influenza infection. **D. Sarr, A. Gingerich, M. Colon, T. Nagy, R.A. Tripp and B. Rada**. Univ. of Georgia.

P859 **127.22** Neutrophil maturation and their response to infectious pathogens are regulated by microbiota. **M. Gadjeva, A. Kugadas, A. Petenkova, J. Geddes-McAlister, M.K. Mansour and D. Sykes**. Brigham and Women's Hosp., Harvard Med. Sch., Max Planck Inst. of Biochemistry, Germany and Massachusetts Gen. Hosp.

P850 **127.23** Listeria hijacks host cell mitophagy to evade killing through a novel mitophagy receptor. **Y. Qian**. Shanghai Institutes for Biol. Sci., China.

P866 **127.24** Inhibitory effect of short-chain fatty acids on the induction of nitric oxide by *Staphylococcus aureus* lipoproteins in macrophages. **S.H. Han, J.W. Park, H.Y. Kim, M.G. Kim, S. Jeong and C-H. Yun**. Seoul Natl. Univ., South Korea.

128. CD4$^+$ T CELL DIFFERENTIATION AND FUNCTION

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P868 **128.1** Novel Foxp3 regulators discovered by a genome-wide CRISPR screen. **C.S. Loo and Y. Zheng**. Salk Inst. for Biological Studies.

P869 **128.2** CIS inhibits Treg-intrinsic TH2 program and suppresses allergic airway inflammation. **X.O. Yang, H. Zheng, X. Wu, R-L. Jiang, E. Castillo, C. Chock, Q. Zhou, M. Liu and C. Dong**. Univ. of New Mexico Sch. of Med. and Tsinghua Univ., China.

P871 **128.3** Id2 is necessary for differentiation and survival of adipose-resident Tregs. **A.B. Frias, E.J. Hyzny, L.Y. Beppu, H.M. Buechel and L.M. D'Cruz**. Univ. of Pittsburgh Sch. of Med.

P875 **128.4** ICOS signaling in visceral adipose tissue regulatory T cell homeostasis and function. **K.L. Mittelsteadt and D.J. Campbell**. Univ. of Washington and Benaroya Res. Inst.

P877 **128.5** Role of Ets transcription factors in the development of T_H9 cells. **R.P. Kharwadkar, B.J. Ulrich, Y. Fu and M.H. Kaplan**. Indiana Univ. Sch. of Med.

P876 **128.6** Prolonged activation in CD4+ T cells results in extensive mitochondrial remodeling despite the metabolic dominance of aerobic glycolysis. **B. Akkaya, A. Roesler, B.P. Theall, J.A. Al Souz, P. Miozzo, J. Traba, M. Smelkinson, J. Kabat, D. Dorward, S.K. Pierce and M. Akkaya**. NIAID, NIH and NHLBI, NIH.

P879 **128.7** Egr2 deficiency significantly impairs the development of pathogenic T_H17 cells. **Y. Gao, Y. Wang, Y. Guan, N.J. Bouladoux, T. Break, M.S. Lionakis, Y. Belkaid and V. Lazarevic**. NCI, NIH and NIAID, NIH.

P1200 **128.8** The Ikaros zinc finger transcription factor Eos regulates CD4$^+$ T_H1 and CD8$^+$ T_C1 differentiation programs. **B.K.N. Sreekumar, M.D. Powell, K. Read, J. Zafar, D. Jones, C. Baker, I.C. Allen and K.J. Oestreich**. Carilion Sch. of Med., Virginia Polytechnic Inst. and State Univ. and Virginia-Maryland Col. of Vet. Med.

P874 **128.9** Discovery and functional analysis of novel regulatory T cell marker, TregS. **J. Yoon, D.D-H. Lee and S-W. Lee**. Yonsei Univ., South Korea, Univ. of California, Los Angeles and Yonsei Univ. Col. of Med., South Korea.

P878 **128.10** TCF1 and LEF1 control Treg competitive survival to maintain immune tolerance. **W. Fu and B-H. Yang**. Univ. of California, San Diego.

P872 **128.11** The role of Blimp-1 in adipose Treg differentiation and effector function. **L. Beppu, A. Frias, E. Hyzny, A. Poholek and L. D'Cruz**. Univ. of Pittsburgh Sch. of Med.

P870 **128.12** Gata3 plays a supportive role for the development of Tbet-expressing Th17 cells in EAE. **M.J. Butcher, R.K.H. Gurram and J. Zhu**. NIAID, NIH.

P867 **128.13** RAS P21 protein activator 3 specifically promotes pathogenic T helper 17 cell generation by repressing T helper 2-biased programs. **B. Wu**. Univ. of North Carolina, Chapel Hill.

P873 **128.14** BATF-interacting proteins dictate specificity in Th subset activity. **Y. Fu, B. Koh, B.J. Ulrich, R. Kharwadkar and M.H. Kaplan**. Indiana Univ. Sch. of Med.

P1201 **128.15** Placenta-specific 8 negatively regulates IFNγ production by Th1 cells. **C.D. Slade, K.L. Reagin, K.D. Klonowski and W.T. Watford**. Univ. of Georgia.

P1202 **128.16** Akt phosphorylation of hnRNP A1 controls CD4+ T cell fate decisions. **Y. Jin, T.L. White, M. Gable and P. Morel**. Univ. of Pittsburgh.

P1203 **128.17** 2A-DUB/Mysm1 in lymphoid development and Treg function. **M.V. Gatzka, I. Krikki and H.V. Hainzl**. Uni Ulm, Germany.

P1204 **128.18** Substrate rigidity affects human regulatory T cell induction in vitro. **L. Shi, J.H. Lee and L. Kam**. Columbia Univ.

P1205 **128.19** Profile of double positive T cells (CD45$^+$CD3$^+$ CD4$^+$CD8$^+$) in HIV-infected population in Santos City, Brazil. **S.A.d. Silva, C.R.d. Almeida and C.R.d.S. Barros**. Catholic Univ. of Santos, Brazil.

P1206 **128.20** In vivo induction of T regulatory cells with recombinant mouse IL-2_anti-mouse IL-2 antibody complex. **H. Soto, J. Moyron-Quiroz, Z.R. Moya, M. Tam, J.M. Love, X. Yang, D. Nguyen and J. Zhou**. BioLegend and BioLegend, Inc.

129. IMMUNE DEVELOPMENT AT MUCOSAL SITES

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1207 **129.1** Adventitial stromal cells define group 2 innate lymphoid cell tissue niches. **A.B. Molofsky, M.W. Dahlgren, S.W. Jones, A. Dubinin, S. Farhat, J.F. Ortiz-Carpena, K.S. Yu, K. Lee, C. Wang, A.V.R. Molofsky, A.D. Tward, M.F. Krummel and T. Peng**. Univ. of California, San Francisco.

P1208 **129.2** Persistent antigen can maintain lung resident memory CD8 T cells long-term. **I.E.M. Uddback, E. Cartwright, A. Skak Schøller, S.L. Hayward, J. Lobby, S. Takamura, A.R. Thomsen, J.E. Kohlmeier and J.P. Christsensen**. Univ. of Copenhagen, Denmark, Emory Univ. Sch. of Med. and Kindai Univ., Japan.

P1209 **129.3** Aire deficiency during early pregnancy leads to maternal T cell imbalance and embryo loss. **E.M. Gillis-Buck, J.M. Gardner, J.L. Bautista, M.S. Anderson, A. Erlebacher and T.C. MacKenzie**. Univ. of California, San Francisco.

P1210 **129.4** Dissecting the tissue-specific mechanisms that support the maintenance of intestinal regulatory T cells. **E. Cruz Morales, A.P. Hart and T.M. Laufer**. Univ. of Pennsylvania.

P1211 **129.5** The skin: a site of extralymphoid IgM production. **S.E. McGettigan, R.P. Wilson, V.D. Dang, A. Kumar, N. Nikbakht, W. Stohl and G.F. Debes**. Thomas Jefferson Univ., Univ. of Pennsylvania and Univ. of Southern California.

P1213 **129.6** Absence of conventional dendritic cells type 1 impairs intestinal homeostasis and permeability and leads to the development of obesity. **H. Hamade, J.T. Stamps, L.S. Thomas, D. Stamps, Y. Shimodaira and K.S. Michelsen**. Cedars-Sinai Med. Ctr., Los Angeles.

P1214 **129.7** Small intestinal cytotoxic CD4 T cells: novel mechanisms of development and unique protective capability. **A. Chen, H. Iwaya, N. Thiault and H. Cheroutre**. La Jolla Inst. for Allergy and Immunology.

P1215 **129.8** Tissue driven influences on human NK cell development, function and residence. **P. Dogra, C. Rancan, W. Ma, M. Toth, T. Senda, D.J. Carpenter, P. Thapa, P.A. Szabo, Y. Shen, L. Fong, L.L. Lanier and D.L. Farber**. Columbia Univ. Med. Ctr., Univ. of California, San Francisco and Univ. of Debrecen, Hungary.

P1216 **129.9** Indiscriminate nature of lung resident $CD8^+$ T_{RM} cells reactivation and their varied reactivation profiles. **J.S. Low, C. Amezcua, E. Sefik, C.C.D. Harman, R. Jackson, X. Jiang, J.B. Kelly, L.S. Cauley, R.A. Flavell and S. Kaech**. Yale Univ. Sch. of Med., Stony Brook Univ., Univ. of Connecticut and The Salk Inst.

P1218 **129.10** Development of conventional, but not tissue-resident, NK cells requires pH-controlling vacuolar a2v-ATPase. **K.D. Beaman, S. Schnederman, G. Katara and S. Dambaeva**. Chicago Med. Sch., Rosalind Franklin Univ. of Med. and Sci.

P1219 **129.11** Noncanonical NF-κB controls stem cell signatures in the colonic mucosa and affects susceptibility to inflammation-induced carcinogenesis. **I.C. Allen, K. Eden, H. Morrison, D. Rothschild, S. Brown and E. Holl**. Virginia Tech, Virginia Polytechnic Inst. and State Univ., Edward Via Col. of Osteo. Med. and Duke Univ. Sch. of Med.

P1220 **129.12** Intrinsic factor recognition promotes Th17/Th1 autoimmune gastric inflammation in patients with pernicious anemia. **A. Troilo, A. Grassi and M.M. D'Elios**. Univ. Med. Ctr. Freiburg, Germany and Univ. of Florence, Italy.

P1221 **129.13** A cognate interaction between T cell-expressed BTLA and B cell-expressed HVEM regulates mucosal immunity in the gut. **C. Stienne, A. Moshayedi, E. Chappell, C.F. Ware and J.R. Sedy**. Sanford Burnham Prebys Med. Discovery Inst.

P1222 **129.14** Differentiation and dynamics of circulating and tissue-resident memory CD8 T cells in the lung. **S.M. Anthony and J.T. Harty**. Carver Col. of Med., Univ. of Iowa.

P1223 **129.15** D-amino acid oxidase contributes IgA nephropathy through regulation of IgA production in intestinal mucosa. **M. Suzuki, T. Sujino, M. Goto, R. Takahashi, M. Ito, J. Sasabe and M. Yasui**. Keio Univ. Sch. of Med. and Central Inst. for Exptl. Animals.

P1212 **129.16** Memory B cell recruitment to the vaginal mucosa is required for luminal antibody secretion. **J.E. Oh, N. Iijima and A. Iwasaki**. Yale Univ. Sch. of Med.

P1217 **129.17** Intestinal goblet cells and goblet cell-associated antigen passages regulate the balance between Tregs and Th17. **D.H. Kulkarni, J. Gustafsson, J. Davis, K. McDonald, C. Hsieh and R.D. Newberry**. Washington Univ., St. Louis.

P1224 **129.18** Single-cell RNA-seq of young and aged alveolar macrophages. **Y. Wu, B. Zhu, N.G. Goplen, R. Zhang, Y. Li, A.N. Cardani, T.J. Braciale and J. Sun**. Mayo Clin. Col. of Med. and Sci. and Carter Immunology Ctr., Univ. of Virginia.

130. TECHNOLOGICAL INNOVATIONS I

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1233 **130.1** Pressure enabled drug delivery of anti-CEA CAR-T cells increases intra-hepatic CAR-T tumor penetration and therapeutic index in a murine model of liver metastasis. **J.C. Hardaway, L.F. Chai, M. Lopes, B. Rabinowitz, P. Guha, D. Jaroch, B. Cox, R. Knight, J. Zeldis, N.J. Espat and S.C. Katz**. Roger Williams Med. Ctr., TriSalus Life Sci., Inc. and Sorrento Therapeutics, Inc.

P1238 **130.2** Use of modified peptides for live tracking of peptide-MHCII complexes during antigen-specific T cell-dendritic cell interactions. **J.A. Al Souz, M. Akkaya, R. Kamdar, O. Kamenyeva, J. Kabat, E.M. Shevach and B. Akkaya**. LISB, NIAID, NIH, LIG, NIAID, NIH, Univ. of Maryland, Baltimore County and RTB, NIAID, NIH.

P1242 **130.3** Comprehensive benchmarking of T-cell epitope prediction tools. **S. Paul and B. Peters**. La Jolla Inst. for Allergy and Immunology.

P1247 **130.4** High throughput pMHC-I multimer library production using chaperone-mediated peptide exchange. **S. Overall, J.S. Toor, M. Yarmarkovich, S. Hao, S. Nguyen, A. Sada-Japp, M.R. Betts, J.M. Maris, P. Smibert and N.G. Sgourakis**. Univ. of California, Santa Cruz, Children's Hosp. of Philadelphia, New York Genome Ctr. and Inst. for Immunology, Perelman Sch. of Med., Univ. of Pennsylvania.

P1254 **130.5** Development of sialoglycan recognizing probes with defined specificities: towards exploring the dynamic mammalian sialoglycome. **S. Srivastava, A. Verhagen, B. Wasik, H. Yu, A. Sasmal, B. Bensing, N. Khan, Z. Khedri, S. Diaz, P. Sullam, N. Varki, X. Chen, C. Parrish and A. Varki**. Sch. of Med., Univ. of California, San Diego, Col. of Vet. Med., Cornell Univ., Univ. of California, Davis and Sch. of Med., Univ. of California, San Francisco.

P1255 **130.6** Genome-wide CRISPR wcreens in primary human T cells reveal key regulators of immune function. **E. Shifrut, J. Carnevale, A. Ashworth and A. Marson**. Univ. of California, San Francisco.

P1250 **130.7** Imaging cancer immunology: tracking immune cells in vivo with magnetic particle imaging. **J. Gaudet, J. Mansfield and P. Goodwill**. Magnetic Insight.

P1225 **130.8** Novel plate-based detection method for T cell activation/proliferation, migration, and cytotoxicity assay using image cytometry. **L. Chan**. Nexcelom Biosci.

P1226 **130.9** WITHDRAWN

P1227 **130.10** Mouse models for iImmunology research available from The Jackson Laboratory Repository. **A. Valenzuela, K. Fancher, S. Rockwood and C. Lutz**. Jackson Lab.

P1228 **130.11** Novel therapeutic strategies to mitigate erectile dysfunction in a rat pelvic trauma model. **A.M. Hertz, E. George, J. Hibbert, A. Reed-Maldonado, T. Brand and S. Salgar**. Madigan Army Med. Ctr.

P1229 **130.12** Generation of a novel GATA3 reporter and inducible deletion system to study GATA3^{hi} Th2 and ILC2 cells in vivo. **R.K. Gurram, C. Liu and J. Zhu**. NIAID, NIH and NHLBI, NIH.

P1230 **130.13** DNA origami probes for single-cell paired BCR heavy and light chain immune repertoire analysis. **N. Chaudhary, L. Schoettle, C. Dubois, K. Jones, P.R. Ulrich, H. Yan and J.N. Blattman**. The Biodesign Inst. and Sch. of Life Sci., Arizona State Univ.

P1231 **130.14** A fast and robust protocol for immunomagnetic isolation of human CD45+ leukocytes from samples with variable start frequencies. **V. Posarac, C.L. Ewen, V.K. Jovanovic, E. Hayer, A.I. Kokaji, S.M. Woodside, A.C. Eaves and T.E. Thomas**. STEMCELL Technol., Canada.

P1232 **130.15** Using immune cell type-specific gene backgrounds for refined GO enrichment analysis: an example from CD4 T cell transcriptomics of TB-infected individuals. **M. Pomaznoy, B. Ha and B. Peters**. La Jolla Inst. for Immunology.

P1234 **130.16** Multiparametric analysis of cell health status using flow cytometry. **Q. Low, V. Calderon, L. Montoya and M. O'Grady**. Thermo Fisher Scientific.

P1235 **130.17** Detection of small particles by flow cytometry: analysis of small particle beads and extracellular vesicles. **L.A. Jachimowicz, P. Ye, Y. Lu, G. Guenther and N. Li**. ACEA BioSci.

P1236 **130.18** Isolation of mouse CD45 positive leukocytes from tissues. **F. Antignano, G. Poon, V. Facca, L. Separovic, Y. Valdez, A.I. Kokaji, S.M. Woodside, A.C. Eaves and T.E. Thomas**. STEMCELL Technol.

P1237 **130.19** Use of recombinant influenza vaccines expressing exogenous miRNAs for increased vaccine production. **J. Stambas, S. Ye, A. Bakre, S. Edwards, D. Dlugolenski and R.A. Tripp**. Deakin Univ. and Univ. of Georgia.

P1239 **130.20** Identifying antibodies and T-cell receptors with known specificity in repertoire sequencing data. **S. Mahajan, R. Vita, Z. Yan, M. Nielsen, A. Sette and B. Peters**. La Jolla Inst. for Allergy and Immunology and Tech. Univ. of Denmark, Kgs. Lyngby, Denmark.

P1240 **130.21** MHC clustering regulates selectivity and effectiveness of T-cell responses. **N. Anikeeva, N.O. Fischer, C.D. Blanchette and Y. Sykulev**. Thomas Jefferson Univ. and Lawrence Livermore Natl. Lab.

P1241 **130.22** Combining TruCulture and OptiMAP to profile human immune immunity. **S-A. Hwang, D. Eisinger and S. LaBrie**. Myriad RBM.

P1243 **130.23** Highly multiplexed single-cell spatial analysis of tissue specimens using CODEX. **S. Mistry, G. Dakshinamoorthy, J. Singh, N. Nikulina, J. Kim, R. Bashier, M.E. Gallina and J. Kennedy-Darling**. Akoya Biosciences Inc.

P1244 **130.24** Quantifying immune effector molecules from mouse leukocytes with flow-based multiplex assay panels. **B. Sun, P. Rughwani, K. Chow, A. Zhao, J. Lehmann, W. Jiang and S. Ji**. BioLegend, Inc.

P1245 **130.25** Novel flow-based multiplex assay panel for quantifying human neuroinflammation biomarkers. **B. Sun, K. Chow, A. Zhao, J. Lehmann, W. Jiang and S. Ji**. BioLegend, Inc.

P1246 **130.26** Formal representation of immunology related data with ontologies. **R.J. Vita, J.A. Overton, K-H. Cheung, P. Dunn, J. Burel, S.A. Chan, A.D. Diehl, S.H. Kleinstein, A. Sette and B. Peters**. La Jolla Inst. for Allergy and Immunology, Knocean, Inc., Canada, Yale Univ. Sch. of Med., NG Health Solutions and Univ. at Buffalo, State Univ. of New York.

P1248 **130.27** REAlease® technology: controlled release of antibody-fluorochrome conjugates for maximal flexibility in flow sorting applications. **C. Evaristo, J. Pankratz, S. Schmachtenberg, N. Jansen, S. Krauthäuser, A. Kinkhabwala, K. Schlegel, C. Siewert, A. Bartholomäus, S. Meiler, D.A. Yushchenko and C. Dose**. Miltenyi Biotec, Germany.

P1249 **130.28** A robust and scalable method to crosslink antibodies and proteins. **Q. Zhao, D. Patel, H. Wu, J. Liao and Z. Diwu**. AAT Bioquest Inc.

P1251 **130.29** 20,000 layers under the model: Bayesian neural networks improve the robustness of human PBMC classifications using immunologist-encoded bias. **M.A. Velazquez-palafox, I.J. Taylor, J. Spidlen, J. Lai, R. Halpert and M. Stadnisky**. Flowjo and BD Biosciences.

P1252 **130.30** Real-time visualization and quantification of neutrophil activation and function using live-cell analysis. **N. Bevan, G. Lovell, B. O'Clair, L. Kelsey, C. Szybut, H. Campwala, T. Jackson, N. Holtz, E. Endsley, T. Dale and D. Trezise**. Essen Bioscience, United Kingdom.

P1253 **130.31** New generation CD90.1 and CD90.2 MicroBeads: fast isolation of total of adoptively transferred T cells from mouse spleen. **C. Evaristo, C. Pitzka, N. Pietz, A. Foerster-Marniok, C. Dose and A. Richter**. Miltenyi Biotec, Germany.

P1256 **130.32** Rapid modification of specificity and affinity of anti-influenza VHH antibody using two in vitro evolution methods. **H. Kishimoto, M. Yoshida, N. Tsukahara, T. Matsubara, H. Nakayama and A. Murakami**. Univ. of the Ryukyus, Japan, RePHARGEN and Panasonic Co. Ltd.

P1257 **130.33** Development of PureQuant real-time PCR-based assay for assessment of immune cell identity and purity in CAR-T workflows. **S. pradhan, J. Guzman, M. Landon, C. Dargitz and U. Lakshmipathy**. Thermo Fisher Scientific.

P1260 **130.34** The utility of benzathine penicillin G for rheumatic fever prevention in the Solomon Islands. **D. Sika-Paotonu and U. Liligeto**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand and Victoria Univ. of Wellington, New Zealand.

P1261 **130.35** Identifying predictive cytokine biomarkers in asthma and chronic obstructive pulmonary disease using the Invitrogen ProQuantum high-sensitivity immunoassay platform. **D.M. Bourdon, H. Ekoff, A. Sjölander, T. Fujisawa, M. Nagao and M. Molin**. Thermo Fisher Scientific and Mie Natl. Hosp., Japan.

P1262 **130.36** Development and application of an in vitro dendritic cell internalization assay to assess immunogenicity risk. **M. Halimani, K. Atkuri, P. Goiberg, Z. You, G. Steeno, S. Tourdot, L. Xue, C. Lepsy, T. Hickling and L. King**. Pfizer, Inc.

P1263 **130.37** Early cancer detection in the Pacific. **D. Sika-Paotonu, U. Liligeto and P. Guilford**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand, Victoria Univ. of Wellington, New Zealand and Univ. of Otago, New Zealand.

P1264 **130.38** Cancer in Pacific Populations in New Zealand and ctDNA technology for early cancer detection. **D. Sika-Paotonu and P. Guilford**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand and Univ. of Otago, New Zealand.

P1258 **130.39** Zika virus detection using a flow cytometry platform. **S.C. Wood**. Ctr. for Devices and Radiological Hlth., FDA.

P1259 **130.40** Generation of a B-1 lymphocyte-specific conditional knockout mouse model *Bhlhe41*$^{\text{tdTomato-Cre}}$. **H. Wang, L. Hong, Y. Tang, M. Xu, S. Pan, Q. Wang and C. He**. Xuzhou Med. Univ., China.

131. TECHNOLOGICAL INNOVATIONS II

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1265 **131.1** Buoyant microbubbles as alternatives or adjuncts to magnetic bead methods for high-purity cell isolation. **J.G. Younger, J. Roussey, J. Bao, N. Petlakh Co, T. Jones and L. Ostruszka**. Akadeum Life Sci.

P1266 **131.2** A robust human immunophenotyping workflow using CyTOF technology coupled with Maxpar Pathsetter, an automated data analysis software. **S.K.H. Li, D. Majonis, C.B. Bagwell, B.C. Hunsberger, V. Baranov and O. Ornatsky**. Fluidigm, Canada and Verity Software House.

P1267 **131.3** Integration of multi-omics data from re-wilded laboratory mice to identify key parameters that determine immune heterogeneity and activation. **J-D. Lin, F. Yeung, C. Devlin, Y-H. Chen, C. Mccauley, A. Cronkite, J.M. Leung, A.L. Graham, K.H. Cadwell and P. Loke**. NYU Med. Ctr., Univ. of Central Florida Col. of Med. and Princeton Univ.

P1268 **131.4** Scalable and comprehensive characterization of antigen-specific CD8 T cells using multi-omics single cell analysis. **S.C. Boutet, D. Walter, M.J.T. Stubbington, K.A. Pfeiffer, J.Y. Lee, S.E.B. Taylor, L. Montesclaros, J.K. Lau, D.P. Riordan, A.M. Barrio, L. Brix, K. Jacobsen, B. Yeung, X. Zhao and T.S. Mikkelsen**. 10x Genomics, Immudex, Denmark and BioLegend, Inc.

P1269 **131.5** Immunophenotyping extracellular vesicles using the CellStream flow cytometer. **H.R. Pugsley, B.R. Davidson and P. Morrissey**. Luminex Corp.

P1305 **131.6** A novel method for high throughput TCR single cell VDJ-pairing with phenotypic analysis. **M. Byrne-Steele, W. Pan, B.E. Brown, X. Hou, M. Depinet, M. Eisenhower, D. Weber and J. Han**. iRepertoire.

P1314 **131.7** Developing a novel multiplexed high throughput flow cytometry based immune assay to screen kinase modulators of primary T cell activation. **J. O`Rourke, A. Gomez-Donart, C. Weldon and Z. Liu**. Essen Biosciences.

P1310 **131.8** Development of high-throughput methods used to identify and characterize novel interactions within the human secretome with focus on the Ig and TNF receptor superfamilies. **S.C. Garrett-Thomson and S. Almo**. Albert Einstein Col. of Med.

P1270 **131.9** Immunomagnetic cell separation is a suitable method for T cell electrophysiology and ion channel pharmacology. **G. Tajti, T.G. Szanto, G. Racz, A. Csoti, P. Hajdu and G. Panyi**. Fac. of Med., Univ. of Debrecen, Hungary.

P1271 **131.10** The “crisis of reproducibility” of animal studies: causes and solutions. **L.M. Shollenberger, H. Hentze and E. Ibsen**. Old Dominion Univ., Vivology Consulting, Singapore and Studylog Sys., Inc.

P1272 **131.11** A universal planar assay format for high sensitivity cytokine quantification in human serum and plasma. **J. Lambert, M. Mendes, Y-X. Yan and A. Ball**. Quanterix.

P1273 **131.12** Adarza’s Ziva technology platform enables highly multiplexed label-free detection of serum analytes. **J.J. Schmuke, E. Mueller, A. Darby, T. Wente-Roth, N. Vohra, J. Haley, T. Hodge and M. Pillers**. Adarza.

P1274 **131.13** An advancement in single-cell genomics allows for T cell population analysis at high resolution. **D.J. Sukovich, S.E.B. Taylor, K.A. Pfeiffer, M.J.T. Stubbington, J.Y. Lee, J. Sapida, D.P. Roidan, A.M. Barrio, D. Walter, L. Brix, K. Jacobsen, B. Yeung, X. Zhao and T.S. Mikkelsen**. 10x Genomics, Immudex and BioLegend, Inc.

P1275 **131.14** Controlled temp for cell plating eliminates room temp cell settling in 96-well plates, reducing edge effect and improving cell conditions. **A.D. Henn, S. Darou, S.P.D. Henn, A.M. Frank, K. Alm and R. Yerden**. BioSpherix and Phase Holographic Imaging, Sweden.

P1276 **131.15** Optimum processing conditions for single-cell RNA sequencing on frozen human PBMCs. **R. Hanamsagar, R. Marcus, M. Chamberlain, E. de Rinaldis and V. Savova**. Sanofi.

P1277 **131.16** WITHDRAWN

P1278 **131.17** The contribution of tumor type, stage, and antigen in the antibody-antigen kinetics by ELISA in adult and pediatric cancer patients. **J.P. Marquez-Manriquez, J.A. Matute-Briseno, A. Camacho-Hernandez, S. Icedo-Zamora and P.A. Lucero-Diaz**. CICS USA.

P1279 **131.18** Database of immune cell EQTLs, expression, epigenomics. **B. Ha, J.A. Greenbaum, B.J. Shmiedel, D. Singh, A. Madrigal, A.G. Valdovino-Gonzalez, B.M. White, J. Zapardiel-Gonzalo, G. Altay, G. McVicker, G. Seumois, A. Rao, M. Kronenberg, P. Vijayanand and B. Peters**. La Jolla Inst. for Immunology and Salk Inst. for Biological Studies.

P1300 **131.19** Optimizing the pharmacokinetic properties of polymeric IgA in mice. **S. Rajan, N.T. Lombaba, D. Mandikian, A. Boswell, V. Yip, D. Bravo-Perez, E. Chen, J. Wang, W. Phung, S. Lee, F. Farahi, A. Estevez, A. Gill, W. Sandoval, S. Viajar, C. Ciferri, M. Matsumoto and C. Spiess**. Genentech, Inc.

P1301 **131.20** The immune epitope database enables and accelerates research. **N. Salimi, R. Vita, S. Mahajan, J.A. Overton, S.K. Dhanda, S. Martini, J.R. Cantrell, D.K. Wheeler, A. Sette and B. Peters**. La Jolla Inst. for Allergy and Immunology, Knocean, Inc. and Leidos Hlth, LLC.

P1302 **131.21** Intracellular pairing of multiple mRNA species at the single-cell level using DNA origami. **P.R. Ulrich, L. Schoettle, C. Dubois, K. Jones, N. Chaudhary, K.S. Anderson and J. Blattman**. Arizona State Univ. and The Biodesign Inst.

P1303 **131.22** Evidence of improved transduction and preservation of relevant T cell subpopulations using different media conditions: towards a novel CAR-T media formulation. **F.J. Martinez Becerra, R. O'Connor, S. Ghassemi, D. Heo and A. Master**. Nucleus Biologics and Perelman Sch. of Med., Univ. of Pennsylvania.

P1304 **131.23** Gene conversion identification and analysis in immunoglobulins. **S.R. Bonissone**. Digital Proteomics.

P1306 **131.24** T cell receptor repertoire detection from dry blood spots. **S. Li, W. Pan, S-G. Wu, H. Liu, M. Byrne-Steele, B.E. Brown, M. Depinet, X. Hou and J. Han**. iRepertoire, Natl. Taiwan Univ. Hosp., Taiwan and iCubate.

P1307 **131.25** Physical cognate pairing of mouseTCR alpha-beta VDJ-rearrangements with phenotype directly from FACS sorted cells. **B.E. Brown, M. Byrne-Steele, W. Pan, X. Hou, M. Depinet, M. Eisenhower and J. Han**. iRepertoire.

P1308 **131.26** Investigating the human immune response with Myriad RBM's TruCulture system and the NanoString nCounter Autoimmune Profiling Panel. **N.A. Elliott, S-A. Hwang, M. Bailey, C. Bailey, S. LaBrie and S. Warren**. NanoString Technologies and Myriad RBM.

P1309 **131.27** Improving expression estimates of HLA alleles in NGS data using personalized genomic sequences and its effect on eQTL mapping. **A. Crinklaw, S. Mahajan, M. Pomaznoy, A. Sette, P. Vijayanand and B. Peters**. La Jolla Inst. for Immunology.

P1311 **131.28** Complete all-in-one immune repertoire profiling of newborn babies via novel dimer-avoided multiplex PCR (dam-PCR). **X. Hou, W. Pan, M. Depinet, B.E. Brown, M. Eisenhower, M. Byrne-Steele, M. Weber, M. Dworsky, S. Callison and J. Han**. iRepertoire, Tennessee Valley Neonatalogy and Tennessee Valley OB GYN.

P1312 **131.29** Microchip platform for imaging-based efficacy testing of cells and reagents for immunotherapy. **B. Onfelt, K. Guldevall, L. Brandt, K. Olofsson, V. Carannante, N. Sandström and M. Wiklund**. KTH-Royal Inst. of Technol., Sweden and Karolinska Inst., Sweden.

P1313 **131.30** Transcriptomic analysis of paired nasal and bronchial brushes in cystic fibrosis patients. **C.J. Erb and K. Chen**. Univ. of Pittsburgh.

P1315 **131.31** Human G-CSF knockin NOG mice support the differentiation of human neutrophils and recapitulate an emergency granulopoiesis after bacterial infection. **R. Ito, I. Katano, T. Takahashi, M. Goto, R. Takahashi and M. Ito**. Central Inst. for Exptl. Animals.

P1316 **131.32** A pathogen-free flow cytometry based opsonophagocytosis assay protocol to quantify antibody-mediated phagocytosis. **A.J. Badten, J. Felgner, E.J. Pone, T.J. Albin, C. Fellon, K. Kang, P.L. Felgner and A.M. Burkhardt**. Univ. of California, Irvine.

P1317 **131.33** MagDye for flow cytometry. **A.Y. Wang, X. Ji, Y. Zhang and W. Smith**. Ocean NanoTech LLC and Thermo Fisher Scientific.

P1318 **131.34** *Cis*-proteomics reveals novel transcriptional regulators of Treg development and function. **Y. Feng and X. Zong**. St. Jude Children's Res. Hosp.

P1319 **131.35** Single cell whole transcriptome analysis of disease cells to generate a targeted RNA-sequencing gene panel for the simultaneous analysis of targeted mRNA and protein. **N. Bansal, H-W. Song, S. Sa, W.E. Lomas, G.V. Baracho, I. Taylor, S. Widmann and S. Mortimer**. BD Biosciences and FlowJo, LLC.

P1320 **131.36** Antibody epitope mapping at single residue resolution for unpurified antigens. **J. Pan and S. Zhang**. NovoAb Bioanalytics Inc.

P1321 **131.37** Mapping leucocyte populations in mouse lymphoid tissues and blood using a 28-color panel on the BD FACSymphony™ system. **G. Baracho, S. Widmann, C. Sisouvanthong, A. Tyznik and S. Saksena**. BD Biosciences.

P1322 **131.38** Comparative analysis of immunoglobulin IGHD genes in vertebrates. **V. Bhardwaj, Y. Safonova, M. Franceschetti, R. Rao and P. Pevzner**. Univ. of California, San Diego.

P1323 **131.39** Lipid composition impacts the assembly of MHC class II molecules in nanodiscs. **T.A. Becker, J. Osan, K. Rivera, J. Polanco, A. Ferrante and T. Kuhn**. Univ. of Alaska, Fairbanks.

P1324 **131.40** Simultaneous mRNA, protein, and immune-repertoire profiling of thousands of single cells. **C. Chang, M. Nakamoto, J. Lai, I. Siddique and S. Mortimer**. BD Biosciences.

P1325 **131.41** Evaluation of cytometer sensitivity and stability using automated analysis. **J.A. Bradford, J. Meskas and P. Sardina**. Thermo Fisher Scientific and Cytapex Bioinformatics, Inc., Canada.

REMINDER

132. TREATMENT STRATEGIES IN LUPUS

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1327 **132.1** Innovative drug discovery for autoimmune diseases aiming at BAFF signaling pathway. **K. Yoshimoto, K. Suzuki, N. Seki, K. Sugahara, K. Chiba and T. Takeuchi**. Keio Univ. Sch. of Med., Japan and Mitsubishi Tanabe Pharma Corp.

P1328 **132.2** MAP4K3/GLK-induced AhR-RORγt complex is a novel therapeutic target for $GLK^{high}IL\text{-}17A^{high}$ subpopulation of SLE patients. **H-C. Chuang and T-H. Tan**. Natl. Hlth. Res. Inst.

P1329 **132.3** Response Gene to Complement -32 exerts proinflammatory and profibrotic effects in immune complex mediated glomerulonephritis. **V. Rus, A. Tatomir, V. Nguyen, A. Talpos-Caia, J. Papadimitriou, S. Atamas, I. Luzina, S-S.J. Sung, T. Badea and H. Rus**. Univ. of Maryland Sch. of Med., Univ. of Virginia Sch. of Med. and NEI, NIH.

P1330 **132.4** A rationally engineered DNase1-Fc fusion protein ameliorates autoimmune glomerulonephritis. **M. Mouchess, E. Suto, S. Chan, B. Dai, C. Tam, Y. Cao, M. Darwish, D. He, S. Haller, J. Eastham-Anderson, Y. Franke, C. Blanchette, W. Lee, C. Austin, R. Lazarus and T. Yi**. Genentech, Inc.

P1335 **132.5** Type II NKT cells directed immune regulatory mechanism(s) control spontaneous lupus nephritis in mice. **I. Maricic, R. Halder, I. Marrero, D.H. Kono and V. Kumar**. Univ. of California, San Diego and Scripps Res. Inst.

P1340 **132.6** Targeting T cell activation and lupus autoimmune phenotypes with a novel glucose transporter inhibitor. **W. Li, G. Qu, S-C. Choi, C. Cornaby, A. Titov, X. Teng, H. Wang and L. Morel**. Univ. of Florida and RenJi Hosp., Sch. of Med., Shanghai Jiaotong Univ., China.

P1341 **132.7** Validation of Ianthionine synthetase C-like 2 (LANCL2) as a therapeutic target for systemic lupus erythematosus. **A. Leber, R. Hontecillas, V. Zoccoli-Rodriguez and J. Bassaganya-Riera**. Landos Biopharma.

P1342 **132.8** A nanoparticle-based approach targeting ion channels for the treatment of Lupus nephritis. **A.A. Chimote, M. Khodoun, H.J. Duncan, S.K. Kant and L. Conforti**. Univ. of Cincinnati and Cincinnati Children's Hosp. Med. Ctr.

P1331 **132.9** Angiotensin-converting enzyme inhibitor suppresses type I interferon responses, decreases neuroinflammation and improves depression-like behavior in MRL/lpr lupus-prone mice. **U. Sriram, C. Nocito, M. Hand, C. Lubinsky, A. Seliga, V. Zuluaga-Ramirez, M. Winfield and Y. Persidsky**. Lewis Katz Sch. of Med., Temple Univ.

P1332 **132.10** Expression of interferon genes is influenced by sex hormones in SLE. **R.P. Singh and B.H. Hahn**. VA Greater Los Angeles Hlth. Care Syst. and David Geffen Sch. of Med., Univ. of California, Los Angeles.

P1333 **132.11** Lupus mice treated with Lupresan decreased autoantibody titers and improve facial lesions. **C. Wong Baeza, A. Reséndiz Mora, M. Figueroa Pensado, S. Vela Patiño, G. Nava Estrada, C. Wong Ramírez and I. Baeza Ramírez**. Instituto Politecnico Nacional, Mexico.

P1334 **132.12** Alpha-1-antitrypsin ameliorates diffuse alveolar hemorrhage in the pristane induced lupus model. **A.S. Elshikha, G. Abboud, A. Danos, M. Chen, Y. Yuan, L. Zeumer, L. Morel and S. Song**. Col. of Pharmacy, Univ. of Florida and Col. of Med., Univ. of Florida.

P1336 **132.13** Sinomenine attenuates Ang II induced autophagy via inhibition of P47-phox translocation in podocytes, and also attenuates Ang II by podocytes induced under NETs. **W. Wang and J. Zhang**. Army Medical Univ., Xinqiao Hosp., China.

P1338 **132.14** Characterization and optimization of SLE mouse models for the evaluation of immunomodulation therapeutics. **L. Case, H. Knowlton, G. Christianson, L. Vann and C. Lutz**. Jackson Lab.

P1339 **132.15** Improved antimalarial delivery to inflammatory cells driving lupus pathogenesis using shape-based targeting nanoparticles. **M. Allen, N. Karabin, A. Golding, E. Scott and G. Szeto**. Univ. of Maryland, Baltimore County, Northwestern Univ. and Univ. of Maryland Sch. of Med.

P1326 **132.16** De novo fatty acid synthesis induced Sjögren's syndrome by promoting Th17 differentiation. **J. Luo and Z. Yin**. Jinan Univ., China.

P1337 **132.17** Single-target pan-liver autoimmune disease-suppressing nanomedicines. **C. Sokke Umeshappa, S. Singha, J. Blanco, K. Shao, R. Hebbandi Nanjundappa, J. Yamanouchi, A. Pares, P. Serra, Y. Yang and P. Santamaria**. Univ. of Calgary, Canada, Institut D'Investigacions Biomèdiques August Pi i Sunyer, Spain and Univ. of Barcelona, Spain.

133. TREATMENT STRATEGIES IN AUTOIMMUNE ARTHRITIS AND RELATED INFLAMMATORY DISORDERS

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1343 **133.1** Human gingival tissue-derived MSC suppress osteoclastogenesis and bone erosion via CD39-adnosine signal pathway in autoimmune arthritis. **S.G. Zheng, Y. Luo and J. Wang**. Penn State Col. of Med.

P1351 **133.2** Development of citrullinated-vimentin-specific CAR for targeting Tregs to treat autoimmune rheumatoid arthritis. **C. Raffin, Y. Muller, J. Barragan, Y. Zhou, L. Piccoli, A. Lanzavecchia, S.U. Tareen, J.D. Fontenot and J.A. Bluestone**. Univ. of California, San Francisco, IRB Barcelona, Spain, Inst. for Res. in Biomed., Switzerland and Juno Therapeutics.

P1359 **133.3** Identification of potent RORc inhibitors for the treatment of IL-17-mediated inflammatory diseases: is it worth the risk? **C. Everett, J. Zbieg, O. Rene, S. Rutz, W. Lee, S. Laing, J. Zhang, A. Johnson, N. Ghilardi, J. Crawford and C. Eidenschenk**. Genentech, Inc. and Novartis Institutes of Biomed. Res.

P1345 **133.4** Therapeutic vaccination by two DerG LEAPS conjugates incorporating different PG (aggrecan) epitopes protect by different immune mechanisms in the PG G1 domain induced mouse model of rheumatoid arthritis. **D.H. Zimmerman, K. Mikecz, K.S. Rosenthal, A. Markovics, R. Carambula, J. Ciemielewski and T. Glant**. CEL-SCI Corporation, Rush Univ. Med. Ctr. and Roseman Univ. of Hlth. Sci.

P1350 **133.5** Interleukin-17 drives interstitial entrapment of tissue lipoproteins in experimental psoriasis. **P. Huang, B. Zinselmeyer, B.T. Saunders, M.A. Swartz, B.S. Kim and G.J. Randolph**. Washington Univ. Sch. of Med. and Univ. of Chicago.

P1353 **133.6** Restraining neuroinflammation during antigen delivery as an immunosuppressive approach to prevent and treat contact dermatitis. **M. Bandyopadhyay, A.E. Morelli, G. Erdos, T.L. Sumpter, O.A. Tkacheva, W.J. Shufesky, L.D. Falo and A.T. Larregina**. Univ. of Pittsburgh Sch. of Med. and Univ. of Pittsburgh Med. Ctr.

P1344 **133.7** Targeting chemokine receptors CCR6 and CXCR2 in a murine model of IL-36a-induced pustular psoriasis. **J.J. Campbell, K. Ebsworth, L. Ertl, J.P. McMahon, Y. Wang, S. Yau, V.R. Mali, V. Chhina, A. Kumamoto, S. Liu, T. Dang, D. Newland, I.F. Charo, P. Zhang, T.J. Schall and R. Singh**. ChemoCentryx, Inc.

P1346 **133.8** 1,25-Dihydroxyvitamin D3 ameliorates collagen-induced arthritis *via* suppression of Th17 cells through miR-124 mediated inhibition of IL-6 signaling. **S.G. Zheng, L. Zhou and J. Wang**. Penn State Col. of Med.

P1347 **133.9** An accidental discovery of a new potential mouse model of the axial spondyloarthritis . **N.K. Banda**. Univ. of Colorado, Denver AMC.

P1348 **133.10** Immunoregulatory effects of mesenchymal stem cells-derived exsomes in a rabbit model of autoimmune dacryoadenitis. **H. Nian, N. Li, Y. Wei, L. Zhao, S. Chen and R. Wei**. Tianjin Med. Univ., China.

P1349 **133.11** N-acetylcysteine reduces reactive oxygen species and pro-inflammatory cytokine production in HLA-B27-positive macrophages and shapes them towards a quiescent metabolic state. **F. Navid, B. Nguyen, A. Cougnoux, P-C. Violet, M. Levine and R.A. Colbert**. NIAMS, NIH, NICHD, NIH and NIDDK, NIH.

P1352 **133.12** C15 is an actionable drug target for anti-arthritis via activation Nrf2 signaling. **T. Li, K. Liao, Y. Zhuang, J. Wu and J. Liu**. State Key Lab. of Quality Res. in Chinese Med., Macau.

P1354 **133.13** Increased lymphatic circulation decreases CD4 counts in the lymph nodes of rats in adjuvant-induced arthritis. **M.A. Swanson-Mungerson, M. Magnuson, M-K. Chang, D. Hager, S. Sperrazza, B. Zanotti, R. Incrocci and M.V. Volin**. Midwestern Univ.

P1355 **133.14** Inhibition of dendritic cells and Th17 cells by a flavonoid compound attenuates clinical severities in a murine collagen-induced arthritis model. **H-R. Yen, F-T. Pai and C-Y. Lu**. Sch. of Chinese Med., China Med. Univ., Taiwan, Chang Gung Univ., Taiwan and Chang Gung Mem. Hosp., Taiwan.

P1356 **133.15** The potential role for berberine, an alkaloid dietary supplement, in mitigating the subclinical pathology and delaying onset of rheumatoid arthritis. **A.A. Vita, N.A. Pullen and D. Lyons**. Univ. of Northern Colorado.

P1357 **133.16** Small molecule inhibitor suppresses Tfh cell development in germinal center and reduces the severity of inflammation in a collagen-induced arthritis mouse model. **X. Zhang, N. Bhatia, F. Migliore, L. Hellmers, G. Olayemi, C. Mcleod, J. Zakem, W. Davis and R. Quinet**. Ochsner Med. Ctr. and Inst. of Translational Res., Ochsner Med. Ctr.

P1358 **133.17** Investigational treatment of rheumatoid arthritis with a vibrotactile device applied to the external ear. **G.H. Imperato, M.E. Addorisio, V.A. Pavlov, H. Yang, B. Diamond, K.J. Tracey and S.S. Chavan**. Feinstein Inst. for Med. Res.

P1360 **133.18** MyD88 and PKD1 play an essential role in the development of spontaneous polyarthritis in IL-1 receptor antagonist-deficient mice. **T. Yoon, H. Cho, J.M. Stuart and A-K. Yi**. The Univ. of Tennessee Hlth. Sci. Ctr. and Veterans Affairs Med. Ctr.

134. CELLULAR THERAPIES FOR CANCER

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1361 **134.1** Identifying and engineering TCR specificity against solid tumor neoantigens. **M.S. Naradikian, L. Montero, S. Hall, R. Thota, A. Frentzen, M. Bahmanof, L. Sternberg, J. Lane, Z. Kosaloglu-Yalcin, M. Lanka, A. Miller, B. Peters, E. Cohen and S. Schoenberger**. La Jolla Inst. for Allergy and Immunology and Univ. of California, San Diego.

P1363 **134.2** CAR^+ T cell anti-tumor efficacy revealed by multi-dimensional single-cell profiling. **X. An, G. Romain, M. Martinez-Paniagua, I.N. Bandey, J.RT. Adolacion, M. Fathi, I. Liadi, F. Sadeghi, A. Mahendra, A. Amritkar, B. Roysam, H. Singh, L.J. Cooper and N. Varadarajan**. Univ. of Houston, Univ. of Texas MD Anderson Cancer Ctr. and Ziopharm Oncology.

P1365 **134.3** Disruption of TOX transcription factors enhances CAR T cells function in solid tumors. **H. Seo, J. Chen, E. Gonzalez Avalos, D. Samaniego Castruita, I. Lopez Moyado, C-J. Wu, A. Das, L-F. Lu, A. Bhandoola and A. Rao**. La Jolla Inst. for Immunology, Univ. of California, San Diego and NCI, NIH.

P1372 **134.4** Intratumoral localization of pattern recognition receptor signaling informs CAR T cell design. **L. Johnson, C.H. June and A.J. Minn**. Univ. of Pennsylvania.

P1370 **134.5** CD28 homolog is a strong activator of natural killer cells for lysis of B7H7-positive tumor cells. **X. Zhuang and E.O. Long**. NIAID, NIH.

P1368 **134.6** Integrated profiling of T cells and tumor cells demonstrates metabolic adaptation essential for melanoma cell therapy. **M.A. Martinez-Paniagua, C. Haymaker, J.R.T. Adolacion, X. An, I.N. Bandey, C. Creasy, T. Geiger, M. Harel, J. Robinson, J.B. Nielsen, A. Amritkar, S. Woodman, B. Roysam, P. Hwu, C. Bernatchez and N. Varadarajan**. Univ. of Houston, Univ. of Texas MD Anderson Cancer Ctr., Tel Aviv Univ., Israel and Chalmers Univ. of Technol., Sweden.

P1379 **134.7** Robust antitumor effects of SNA-based T cell therapy. **D. Dominguez, N. Chernyak, M. guan, Y. Chou, A. Long, L. Qin, L. Cole, J. Ann, S. Chen, J. Fan, A. Lee, C. Mirkin and B. Zhang**. Northwestern Univ.

P1362 **134.8** Effects of structural changes of beta-mannosylceramide on activation of invariant natural killer T cells and stimulation of anti-tumor immunity. **J. Yau, S. Robinson, B. Compton, D. Larsen, G. Painter, J.A. Berzofsky and M. Terabe**. NCI, NIH, Univ. of Otago, Dunedin, New Zealand and Victoria Univ. of Wellington, Wellington, New Zealand.

P1364 **134.9** Expression of a neoantigen renders pancreas cancer transiently susceptible to immunotherapy. **A.L. Burrack, E. Spartz, J. Raynor, M. Olson and I. Stromnes**. Univ. of Minnesota.

P1366 **134.10** Reconstitution of iNKT cells enhances antitumor immunity through liver education of iNKT cells and modulation of tumor microenvironment. **H. Zhang, Z. Zhu, F. Zhang and S. Modrak**. Col. of Pharmacy and Pharmaceutical Sci., Washington State Univ.

P1367 **134.11** Substitution of alpha aminobutyric acid for cysteine at class I MHC anchor positions can enhance recognition of cancer epitopes. **A.E. Sachs, B. Peters, J. Sidney, A. Sette, S.A. Rosenberg and P.F. Robbins**. NCI, NIH and La Jolla Inst. for Immunology.

P1369 **134.12** Cancer stem cells inhibit NK cell effector function via PCNA-NKp44 interaction. **J.D. Malaer and P.A. Mathew**. Morehouse Sch. of Med. and Univ. of North Texas Hlth. Sci. Ctr.

P1371 **134.13** Pulsatile MEK inhibition improves anti-tumor immunity and T cell function in Kras mutant lung cancer. **H. Choi, J. Deng, S. Li, T. Silk, L. Dong, E.J. Brea, D.C. Redmond, S. Houghton, N. Falik, J. Boiarsky, H. Zhong, E.A. Akbay, P.D. Smith, T. Merghoub, K-K. Wong and J.D. Wolchok**. Mem. Sloan Kettering Cancer Ctr., New York Univ. Med. Ctr., Univ. of Texas Southwestern Med. Ctr. and AstraZeneca, Ltd, United Kingdom.

P1373 **134.14** De novo DNA methylation programs regulate T cell exhaustion and limit T cell-based immunotherapies. **B.A. Youngblood, H.E. Ghoneim, H.A. Abdelsamed, A. Moustaki, Y. Fan, J. Crawford, P.G. Thomas, E. Stewart and S. Federico**. St. Jude Children's Res. Hosp.

P1375 **134.15** REAlease® immunomagnetic separation technology with reversible labeling for tumor infiltrating T cells and sub-populations. **C. Evaristo, R. Siemer, D. Agorku, J. Brauner, O. Hardt, C. Dose and A. Richter**. Miltenyi Biotec, Germany.

P1376 **134.16** Ex vivo phenotyping and potency monitoring of CD19 CAR T cells with a combined flow cytometry and impedance-based real-time cell analysis workflow. **M. Lei, P. Ye, Y. Lu, X. Ji, A. Wang, N. Li and X. Wang**. ACEA Biosciences.

P1377 **134.17** Harnessing the anti-tumor activity of invariant natural killer T cells for neuroblastoma immunotherapy. **P. Khurana, G. Ferry, S. Karageorgos, A. Vu, K. McNerney, M. Hogarty and H. Bassiri**. Children's Hosp. of Philadelphia.

P1378 **134.18** Targeted ablation of FoxP3+ T cells activates peripheral and tumor-infiltrating cytotoxic CD8+ T cells in multiple syngeneic mouse tumor models. **T. Delfino, Y. Wang, J. Schartner and S. Rutz**. Genentech, Inc.

P1500 **134.19** Phenotypical and functional analysis of natural killer cells from primary human head and neck squamous cell carcinomas. **M.J. Korrer and Y. Kim**. Vanderbilt Univ. Med. Ctr.

P1374 **134.20** Two morphological changes of cancer cells under natural killer cell killing. **Y.J. Choi, G.B. Ahn, H.S. Kim, H.K. Lee, Y. Kim, J.T. Hong and S-B. Han**. Chungbuk Natl. Univ., South Korea.

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135. MACROPHAGES AND MYELOID AND DENDRITIC CELLS IN TUMOR IMMUNITY AND IMMUNOTHERAPY

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1507 **135.1** Paradoxical pro-tumor functions of dendritic cells on colorectal cancer. **H-I. Huang and G. Hammer**. Duke Univ.

P1509 **135.2** The role of neutrophil extracellular traps in nonalcoholic steatohepatitis-associated hepatocellular carcinoma. **H. Zhang, D.J. van der Windt, J. Ren, A. Tsung and H. Huang**. Ohio State Univ., Wexner Med. Ctr. and Univ. of Pittsburgh Med. Ctr.

P1515 **135.3** Non-small cell lung cancer tumor microenvironment induces arginase1 in neutrophils via the toll-like receptor 2 signaling pathway. **H. Zhang, J. Kargl, X. Zhu, X. Wang, J. Cao and A.M. Houghton**. Fred Hutchinson Cancer Res. Ctr. and Med. Univ. of Graz, Austria.

P1513 **135.4** Single cell RNA sequencing reveals distinct gene expression signatures of myeloid-derived suppressor cells in breast cancer. **H. Alshetaiwi, N. Pervolarakis, L.L. McIntyre, D. Ma, Q. Nguyen, K. Nee, J. Rath, K. Evans, L. Torosian, A. Silva, C. Walsh and K. Kessenbrock**. Univ. of California, Irvine, Sch. of Med., Univ. of California, Irvine, Sch. of Bio. and Univ. of California, Irvine, Sch. of Hlth. and Pharmaceutical Sci.

P1514 **135.5** The cross-talk between infiltrating macrophages and inflamed or malignant colonic epithelium promotes overexpression of ST6GALNAC1 and epithelial MUC1 tumor form MUC1-sTn. **S. Cascio, M. Kvorjak, Y. Ahmed, M. Miller, J. Al Hashash, D. Hartman, N. Miskov-Zivanov, C. Telmer and O.J. Finn**. Univ. of Pittsburgh Sch. of Med. and Carnegie Mellon Univ.

P1518 **135.6** The fate of leukemia-specific $CD8^+$ T cell clones is dictated by antigen specificity and the mechanism of cognate antigen presentation. **X. Chen, B. Flood, B. MacNabb, B.R. Blazar and J. Kline**. Univ. of Chicago and Univ. of Minnesota.

P1521 **135.7** Tumor-derived retinoic acid promotes immune suppression in sarcoma. **S. Devalaraja, T. To, I. Folkert, M. Li, Y. Tada and M. Haldar**. Perelman Sch. of Med., Univ. of Pennsylvania.

P1525 **135.8** ST8Sia6 overexpression accelerates tumor growth, alters macrophage polarization and the immune response. **D.J. Friedman, M. Shapiro, M. Rajcula, S. McCue and V. Smith Shapiro**. Mayo Clin. Grad. Sch. of Biomed. Sci.

P1501 **135.9** A mixed phenotype of tumor-associated macrophages and neutrophils is evident within hours of murine mammary carcinoma delivery. **R.A. Kurt, C. Zhang, J. Schwartz, A. Lauricella, M. Adusei, M. DeBenedetto and C. Newsom-Stewart**. Lafayette Col.

P1502 **135.10** The immune suppressive role of DC-derived IL-27 in hepatocellular carcinoma via the modulation of gut microbiota. **H. Liu, Y. Liu and Y. Song**. National Univ. of Singapore, Singapore.

P1503 **135.11** LincRNA-p21 knockdown reversed the functional phenotype of macrophage in tumor microenvironment by modulating its interaction with p53 and ameliorated breast cancer development. **Z. Su, L. Zhou, R. Chen, H. Lu and H. Xu**. Jiangsu Univ., China.

P1504 **135.12** Monocyte-lineage dendritic cell precursors are pre-positioned in normal lymph nodes and rapidly differentiate into Batf3+ cross-presenting APCs during inflammation. **M.D. Sharma**. Augusta Univ.

P1505 **135.13** Exosomal communication by metastatic osteosarcoma cells contributes to the modulation of alveolar macrophages to an M2 tumor-promoting phenotype. **K.K. Wolf-Dennen, N. Gordon and E.S. Kleinerman**. Univ. of Texas MD Anderson Cancer Center.

P1506 **135.14** Knockout immune regulator FGL2 in tumor cells impairs tumor progression in the CNS by facilitating $CD103^+$ dendritic cell differentiation. **J. Yan, Q. Zhao, K. Gabrusiewicz, L-Y. Kong, X. Xia, J. Wang, M. Ott, J. Xu, E.R. Davis, L. Huo, G. Rao, S-C. Sun, S.S. Watowich, A.B. Heimberger and S. Li**. Univ. of Texas MD Anderson Cancer Ctr.

P1508 **135.15** Frequency of myeloid derived suppressor cells in spleen and peripheral blood from cancer patients. **J.E. Talmadge, K. Cole, Q. Ly, M. Hollingsworth and J. Cox**. Univ. of Nebraska Med. Ctr.

P1510 **135.16** Dendritic cells dysfunction in tumor-draining lymph nodes. **J.M. Bandola-Simon and P.A. Roche**. NCI, NIH.

P1511 **135.17** CDDO-Me redirects macrophage activation. **G.M. Torres Santiesteban, T. Shabaneh, R. Bhandari, K. Liby, M.J. Turk and P. Pioli**. Dartmouth Geisel Sch. of Med. and Michigan State Univ.

P1512 **135.18** Cannabinoids decrease intestinal permeability and induce colonic CD103+ dendritic cells to increase T regulatory cells leading to decreased murine colitis-associated colon cancer. **W.J. Becker, H. Alrafas, M. Nagarkatti and P.S. Nagarkatti**. Univ. of South Carolina Sch. of Med.

P1516 **135.19** A novel CSF-1R neutralizing antibody, DCB-AB21, inhibits colony-stimulating factor 1 receptor signaling activity. **C-H. HO, C-B. Liao, Y-K. Chen, C-W. Huang and T-P. Yang**. Develop. Ctr. for Biotechnology, Taiwan.

P1517 **135.20** A lipid-mediated paracrine signaling network stimulates tumor-associated macrophage development in cancer and metastasis. **V. Rai and R. Ray**. Inst. of Life Sci., Bhubaneswar, India.

P1519 **135.21** Dendritic cells present cancer-derived p:MHCI molecules to prime anti-tumor CD8 T cells. **B. MacNabb, D. Kline, X. Chen, S. Tumuluru and J. Kline**. Univ. of Chicago.

P1520 **135.22** The effects of a CRISPR/Cas9 IL-6 knockout in 4T1 mammary carcinoma cells on myeloid-derived suppressor cells and Th17/Th22 cells. **V.J. Rase, J.M. Haughian and N.A. Pullen**. Univ. of Northern Colorado.

P1522 **135.23** Immune microenvironment landscape and the role of neutrophils in glioblastoma. **D. Friedmann-Morvinski, P. Magod, L. Agemy and L. Rousso-Noori**. Tel Aviv Univ. and Weizmann Inst. of Sci.

P1523 **135.24** *MIF* functional polymorphisms (-794 $CATT_{5-8}$ and -173 G>C) in basal cell carcinoma in western Mexican population. **E. Valdés Alvarado, J. Padilla Gutierrez, Y. Valle, M. Pedroza González, D.E. Martinez-Fernandez, J.F. Muñoz Valle, E. Guevera and A. Tlacuilo**. Universidad de Guadalajara.

P1524 **135.25** Mesenchymal stem cells educate breast tumor associated macrophages to acquire increased immunosuppressive features. **S. Biswas, G. Mandal, S. Roy Chowdhury, S. Purohit, K.K. Payne, C.M. Anadon Galindo, A. Gupta, X. Yu, J.R. Conejo-Garcia and A. Bhattacharyya**. Moffitt Cancer Ctr. and Res. Inst., Univ. of Calcutta, India and Saroj Gupta Cancer Centre and Res. Inst.

P1526 **135.26** Inflammasome signaling mediates myeloid immunosuppression within the tumor microenvironment. **C.N. Lang and Y. Kim**. Vanderbilt Univ. and Vanderbilt Univ. Med. Ctr.

P1527 **135.27** Effector T cell stimulation using Staphylococcal enterotoxin G and I loaded HLA transgenic dendritic cells. **P.L. Knopick, N. Riha, N. Biswas, M. Nilles and D.S. Bradley**. Univ. of North Dakota.

P1528 **135.28** Inhibition of effective anti-tumor immunity by macrophage Bcl6. **N.N. Desai, B. Zhu, Y.M. Son and J. Sun**. Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin. Col. of Med. and Sci.

P1529 **135.29** The IRE1-XBP1 axis controls the tumorigenic properties of macrophages. **M. Zanetti**. UCSD Moores Cancer Ctr.

P1530 **135.30** Myeloid derived suppressor cells promote ovarian cancer progression in a murine model of ovarian cancer. **R. Rattan, S. Sakr, S. Dar, T. Buekars, R. Morris, A. Munkarah and S. Giri**. Henry Ford Hlth. Sys. and Wayne State Univ. Sch. of Med.

136. COMBINATION THERAPIES FOR IMMUNO-ONCOLOGY

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1539 **136.1** Inhibition of SHP-1 expands the repertoire of anti-tumor T cells available to respond to checkpoint blockade therapy. **J. Snook, A. Soedel and M.A. Williams**. Univ. of Utah.

P1549 **136.2** Enhanced antitumor effects by combining IL-12 gene electrotransfer with anti-PD1 in preclinical metastatic cancer model. **G. Shi, C. Lundberg, M. Scott, C. Edelblute and R. Heller**. Old Dominion Univ.

P1550 **136.3** CD122-selective IL-2 complexes synergize with anti-PD-L1 in B16 melanoma to treat $PD\text{-}L1^{KO}$ tumors, possibly through inducing $CD8^+TCF\text{-}1^+Tim3^-PD\text{-}1^+CXCR5^+$ stem-like T cells. **X. Zhang, J.M. Drerup, J. Mendez, A.S. Padron, Y. Deng, H.B. Gupta and T.J. Curiel**. First Affiliated Hosp., Sun Yat-sen Univ., China and UTHealth, San Antonio.

P1543 **136.4** Increasing intratumoral dendritic cells to potentiate anti-tumor effects of Newcastle disease virus-based immunotherapy. **J. Svensson-Arvelund, S. Cuadrado-Castano, L. Hammerich, M. Yellin, H. Marsh, B.D. Brown, A. García-Sastre and J. Brody**. Icahn Sch. of Med., Mount Sinai and Celldex Therapeut.

P1531 **136.5** Immunodominant and cryptic tumor neoantigen-specific immune responses activated by an armed oncolytic virus expressing a PD-L1 inhibitor. **G. Wang**. Univ. of Southern California.

P1547 **136.6** Influenza vaccination administered in the tumor induces an inflamed tumor microenvironment and reduces tumor growth. **J.H. Newman, B. Chesson, N. Herzog, P. Bommareddy, S. Aspromonte, R. Pepe, R. Estupinian, M. Aboelatta, S. Buddhadev, J. Schenkel, P. Thomas, J. Rudra, A. Silk and A. Zloza**. Rutgers Cancer Inst. of New Jersey, Univ. of Texas MD Anderson Cancer Ctr., Massachusetts Inst. of Technol., St. Jude Children's Res. Hosp., Washington Univ., St. Louis, Harvard Med. Sch. and Rush Univ. Med. Ctr.

P1533 **136.7** Activation of human immune cells with cowpea mosaic virus. **M.M. Albakri, V. Beiss, S.N. Fiering, N.F. Steinmetz and S.F. Sieg**. Case Western Reserve Univ., Univ. of California, San Diego and Dartmouth Geisel Sch. of Med.

P1536 **136.8** Cold . . . is not so cold: CD4+ T cells are active but suppressed in colorectal cancer. **J.M. Jessup**. Inova Schar Cancer Inst.

P1532 **136.9** Targeting DAMP-induced inflammation to prevent breast cancer metastasis and improve anti-tumor immunity. **V.G.N. Frazier, E. Holl, D. Boczkowski, B. Sullenger and S.K. Nair**. Duke Univ. Sch. of Med.

P1534 **136.10** Influence of immune-checkpoint inhibitor and *HLA-G* in patients with cervical cancer. **J.C.O. CRISPIM-FREITAS, R.S.P. Morais, V.S. Oliveira, I. Sadissou, G.M. Palomino, R.N.O. Cobucci, G.A. Lira, K.T.C. Carvalho, E.B.O. Silva, N.L. Silva and E.A. Donadi**. Federal Univ. of Rio Grande do Norte, Natal, Brazil, Ribeirão Preto Sch. of Med., Univ. of São Paulo, Brazil, Maternity Sch. Januário Cicco, Natal, Brazil, Hospital Cancer Dr. Luiz Antonio, Natal, Brazil and Center of Search Aggeu Magalhães, Recife-PE, Brazil.

P1535 **136.11** Low dose radiotherapy promotes immune-mediated anti-tumor responses. **H.B. Barsoumian, A.I. Younes, R. Ramapriyan, M.S. Caetano, J.E. Schoenhals, H. Menon, T.R. Cushman, A. Cadena, A. Li, M.A. Cortez and J.W. Welsh**. Univ. of Texas MD Anderson Cancer Ctr.

P1537 **136.12** Isorhapontigenin shows strong anti-melanoma cell activity, and induces anti-tumor immunity. **Y. Song, Z. Yu, C. Tong, M. Liu, X. Jiang, Y. Zeng and C. Chen**. China Three Gorges Univ. Med. Sch., China.

P1538 **136.13** IL-15 enhances anti-PD-1-induced reinvigoration of tumor-infiltrating $CD8^+$ T cells. **G. Leem, K.W. Kim, J-I. Lee, S.Y. Ha, S-H. Park, S.M. Kang and E-C. Shin**. Korea Advanced Inst. of Sci. and Technol., South Korea and Gachon Univ. Gil Med. Ctr., South Korea.

P1540 **136.14** Selective IL-2 receptor β (CD122) targeting improves αPD-L1 immunotherapy in a metastatic bladder cancer model. **R.M. Reyes, D. Zhang, Y. Deng, N. Mukherjee, N. Ji, H.B. Gupta, R.S. Svatek and T.J. Curiel**. Univ. of Texas Hlth. Sci. Ctr., San Antonio.

P1541 **136.15** CD122-selective IL-2 complexes treat ovarian carcinomas and melanoma, alter Treg differentiation and induce more CD8+CXCR5+TCF-1+ stem T cells when combined with αPD-L1. **Y. Deng, H.B. Gupta, J.M. Drerup, R.M. Reyes, J. Mendez, X. Zhang, A.S. Padron, M. Garcia and T.J. Curiel**. Univ. of Texas Hlth. Sci. Ctr., San Antonio and Sun Yat-sen Univ.

P1542 **136.16** Soluble FasL deficiency promotes CD8 T cell dependent elimination of primary intraocular tumors and liver metastases. **K.C. McKenna, P. McCullough, D. Durbin, G. O'Brien, M. McDermott and A. Marshak Rothstein**. Franciscan Univ. of Steubenville and Univ. of Massachussetts.

P1544 **136.17** Patient-derived, vaccine-elicited MUC1 antibodies mediate immune effector functions against cancer cells. **M.L. Miller, J. Lohmueller, E. Ricci, W. Lu and O.J. Finn**. Univ. of Pittsburgh Sch. of Med.

P1545 **136.18** Bortezomib improves antitumor $CD8^+$ T cell function by modulating miR-155 and its targets. **A.N. Renrick, M. Thounaojam, E. Chaudhuri, C. Dash and A. Shanker**. Meharry Med. Col. and Augusta Univ.

P1546 **136.19** Ibrutinib, but not acalabrutinib, inhibits anti-lymphoma T cell and NK cell function. **L. Hammerich, J. Svensson-Arvelund, T. Covey and J. Brody**. Icahn Sch. of Med., Mount Sinai and Acerta Pharma B.V.

P1548 **136.20** Deep™ IL-15 primed T cells avoid toxicity and synergize with PD-L1 blockade to overcome checkpoint resistance in cancer. **K. Sauer, E. Geretti, X. Liang, J. Lyons, P. Bardwell, S. Caruso, B. Hewes, J. Fitzgerald and T. Andresen**. Torque Therapeutics.

P1551 **136.21** Guadecitabine, in combination with a TLR9 agonist, promotes anti-cancer immunity in BALB/c mice bearing 4T1 mouse mammary carcinoma. **T.M. Smith and R. Martin**. Virginia Commonwealth Univ. Sch. of Med.

P1552 **136.22** Synergistic activity between IL-15 signaling and checkpoint blockade drives enhanced NK cell expansion and tumor control in ovarian cancer. **M. Felices, L. Bendzick, B. Kodal, P. Hinderlie, J.S. Miller and M. Geller**. Univ. of Minnesota.

P1553 **136.23** Isoform specific anti-TGFβ therapy enhances antitumor efficacy in mouse models of cancer. **S. Budhu, A. Gupta, R. Giese, J. van Snick, C. Uyttenhove, G. Ritter, J.D. Wolchok and T. Merghoub**. Mem. Sloan Kettering Cancer Ctr. and Ludwig Inst. for Cancer Res.

P1554 **136.24** Glycogen synthase kinase 3 synergizes with immune-checkpoint blockade to overcome tumor resistance due to unique tumor infiltrating T-cell subsets as revealed by mass cytometry. **J. Krueger, A. Taylor, V. Motta, J. Stagg, I. Watson and C.E. Rudd**. Université de Montréal, Canada, St. James's Univ. Hosp., Fluidigm, Centre de Recherche du CHU de Montréal, Canada and McGill Univ., Canada.

P1555 **136.25** Pathology of B cell and neutrophil infiltration in the YUMMER1.7 mouse model of spontaneous melanoma tumor regression. **K.R.M. Blenman, J. Wang, S. Cowper and M. Bosenberg**. Yale Univ. Sch. of Med.

P1556 **136.26** Harnessing alloreactive responses by patient lymphocytes to achieve anti-cancer responses. **L.D. Fast, A. Pando and J.L. Reagan**. Rhode Island Hosp. and Brown Univ.

P1557 **136.27** Mandated cool housing temperature and adrenergic stress reduce the efficacy of radiation and mask the "abscopal effect" in mouse models of cancer. **M. Chen, G. Qiao, B.L. Hylander, H. Mohammadpour, A.K. Singh and E.A. Repasky**. Roswell Park Cancer Inst.

137. IMMUNOMETABOLISM IN TUMOR IMMUNITY AND IMMUNOTHERAPY

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1561 **137.1** Fatty acid depletion is a reversible cause of kynurenine induced T cell apoptosis. **U.H. Beier, M.D. Cully, P.J. Siska, K. Singer, J. Jiao, T. TeSlaa, W.J. Quinn, W.W. Hancock, J.A. Baur, J.D. Rabinowitz and M. Kreutz**. Univ. of Pennsylvania, Univ. Hosp. Regensburg, Germany, Children's Hosp. of Philadelphia and Princeton Univ.

P1563 **137.2** Tumor cell IDO1 increases intratumoral immunosuppressive Tregs independent of enzyme activity. **L. Zhai, A. Bell, J. Qian, E. Ladomersky, K.L. Lauing and D.A. Wainwright**. Feinberg Sch. of Med., Northwestern Univ.

P1568 **137.3** Blockade of IDO/TDO downstream effectors restricts cancer immune suppression. **L.F. Campesato, S. Budhu, J. Tchaicha, A. Jaiswal, M. Gigoux, S. Pourpe, C. Liu, D. Zamarin, M.G. Manfredi, K. McGovern, J.D. Wolchok and T. Merghoub**. Mem. Sloan Kettering Cancer Ctr. and Kyn Therapeutics.

P1562 **137.4** Dynamics of migration patterns of polymorphonuclear myeloid-derived suppressor cells during tumor progression. **S. Fu, S. Patel, J. Mastio, G.A. Dominguez, K.A. Torres, Y. Nefedova, J. Zhou and D.I. Gabrilovich**. Wistar Inst. and Sun Yat-sen Univ., China.

P1564 **137.5** Suboptimal ER stress-induced autophagy potentiates anti-tumor T cell response. **P. Chakraborty, S. Chatterjee, D. Tran, S. Nadig, C. Atkinson and S. Mehrotra**. Med. Univ. of South Carolina.

P1565 **137.6** Metabolic reprogramming of arginine in tumor stem cells facilitates immune escape. **K-H. Chen and A. Walker**. Univ. of California, Riverside.

P1558 **137.7** Pharmacologic inhibition of liver X receptors enhances T cell anti-tumor function in triple negative breast cancer. **K.J. Carpenter, S. Abuirqeba, S. Majidi, M. Sengupta, A.C. Valfort, A. Chatterjee, R.J. DiPaolo and C.A. Flaveny**. Saint Louis Univ.

P1559 **137.8** Tumor-intrinsic PD-L1 reduces actin cytoskeleton polymerization to promote mTORC1 signals driving tumor stemness. **S.C. Kari, A. Kancharla, H.B. Gupta, A. Risinger and T.J. Curiel**. Univ. of Texas Hlth. Sci. Ctr., San Antonio.

P1560 **137.9** Reprograming human Treg metabolism via innate TLR signaling for tumor immunotherapy. **X. Liu, L. Li, K.L. Sanders, J.L. Edwards, E.C. Hsueh, D.A. Ford, D.F. Hoft and G. Peng**. Saint Louis Univ.

P1566 **137.10** Assessing the link between epigenetics and metabolism in acute myeloid leukemia. **D.L. Greenwood, H.E. Ramsey, M.Z. Madden, M.R. Savona and J.C. Rathmell**. Vanderbilt Univ. and Vanderbilt Univ. Med. Ctr.

P1567 **137.11** $CD8^+$ T cells regulate tumor ferroptosis by targeting the system xc- during cancer immunotherapy. **W. Wang, M. Green, J.E. Choi, M. Gijón, P. Kennedy, P. Liao, X. Lang, I. Kryczek, A. Sell, J. Johnson, M. Cieslik, L. Vatan, H. Xia, J. Zhou, J. Li, G. Li, S. Wei, H. Zhang, W. Gu, R. Liu, T. Lawrence, E. Stone, G. Georgiou, T. Chan, A. Chinnaiyan and W. Zou**. Univ. of Michigan, Cayman Chem. Co., Columbia Univ. Med. Ctr., Univ. of Texas, Austin and Mem. Sloan Kettering Cancer Ctr.

P1569 **137.12** Peroxynitrite affects MHC I peptide repertoire presented on tumor cells and impedes the efficacy of antitumor cytotoxic T-lymphocytes. **E. Tcyganov and D.I. Gabrilovich**. The Wistar Insitute.

P1570 **137.13** Mature neutrophils acquire a T cell suppressor phenotype in the ovarian cancer microenvironment that requires complement and NADPH oxidase activation. **T.R. Emmons, K.L. Singel, A.N.M.N. Khan, E. Alqassim, A.M. Blom, S. Ram, S. Holland, K. Odunsi, E. Zsiros and B.H. Segal**. Roswell Park Cancer Inst., Lund Univ., Univ. of Massachusetts Med. Sch. and NIAID, NIH.

P1571 **137.14** Regulation of cancer playmaker survival: increased neutrophil life span by the action of cancer derived a2 V-ATPase. **S.A. Ibrahim, A. Kulshrestha, G.K. Katara, M. Sahoo and K.D. Beaman**. Chicago Med. Sch., Rosalind Franklin Univ. of Med. and Sci.

P1572 **137.15** Glucocorticoid signaling regulates $CD8^+$T cell responses in cancer. **N. Acharya, A. Madi, H. Zhang, M. Klapholz, E. Christian, K.O. Dixon, D. Mangani, J. Xia, M. Singer, O. Rozenblatt-Rosen, A. Regev, V.K. Kuchroo and A.C. Anderson**. Brigham and Women's Hosp., Harvard Med. Sch. and Broad Inst. of MIT and Harvard.

138. RESIDENT MEMORY IN TUMOR IMMUNOTHERAPY

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1575 **138.1** Resident memory (T_{RM}) cells sustain immunity to cancer at sites of frequent metastasis. **A. Molodtsov, K. Lewis, J. Han, J. Vella, Y. Zhao, B. Malik, P. Zhang, F. Kolling, C. Cheng, Y.H. Huang, C. Angeles and M.J. Turk**. Geisel Sch. of Med., Dartmouth Col.

P1577 **138.2** Tissue-resident memory T cells mediate melanoma surveillance and are targets of immunotherapy. **S.L. Park, A. Buzzai, J.L. Hor, M. Effern, S.N. Christo, S.N. Mueller, M. Holzel, J. Waithman, L.K. Mackay and T. Gebhardt**. Univ. of Melbourne, Australia, Telethon Kids Inst., Australia and Univ. of Bonn, Germany.

P1603 **138.3** Focal tumor ablation by irreversible electroporation augments immunotherapy to promote tumor growth control and formation of tumor antigen-specific tissue-resident memory CD8+ T cells. **B.J. Burbach, S.D. O'Flanagan, M.R. Rollins, J.R. Slaughter, K.M. Young, M. Song, Q. Shao, S.M. Azarin, J.C. Bischof and Y. Shimizu**. Univ. of Minnesota.

P1607 **138.4** Immune pressure against ovarian cancer depends on antigen-specific TRM T cells. **C.M. Anadon Galindo, J. Perez Sanz, S. Biswas, K.K. Payne, X. Yu, T.L. Costich, R. Chaurio Gonzalez and J.R. Conejo-Garcia**. Moffitt Cancer Ctr. and Res. Inst.

P1604 **138.5** Sphingosine-1-phosphate receptor 1 loss mediates T cell sequestration in bone marrow in the setting of intracranial tumors: a novel mode of cancer-induced immunosuppression. **D.S. Wilkinson, P. Chongsathidkiet, C. Dechant and P. Fecci**. Duke Univ. Med. Ctr.

P1606 **138.6** Epigenetic targeting of Brd4 constrains $CD8^+$ T cell differentiation during infection and cancer. **J.J. Milner, C. Toma, K. Omilusik, H. Nguyen, B. Yu, A. Delpoux, T. Yoshida, S. Quon, A. Dey, S.M. Hedrick, K. Ozato, S. Crotty, M.E. Pipkin and A.W. Goldrath**. Univ. of California, San Diego, Stanford Univ., NICHD, NIH, La Jolla Inst. for Immunology and Scripps Res. Inst.

P1579 **138.7** Therapeutic antibody discovery in lung tumors by B cell receptor sequencing. **K.J. Kramer, N. Raju, A. Greenplate, K. Pilewski, P. Massion and I. Georgiev**. Vanderbilt Univ. Med. Ctr.

P1573 **138.8** Anti-alpha-enolase T-cell response in oral squamous cell carcinoma. **J-S. Chia, C-H. Tuan, F-Y. Lay, J-H. Ye and Y-L. Chiu**. Natl. Taiwan Univ. Col. of Med., Taiwan.

P1574 **138.9** WITHDRAWN

P1576 **138.10** T cell suppression by the bone microenvironment increases bone metastases from breast cancer in mice. **D.L. Arellano, A. Verdugo-Meza, F. Drescher, F. Olvera-Rodriguez, P. Juarez and P. Fournier**. Centro de Investigación Científica y de Educación, Mexico and Instituto de Biotecnologia, UNAM, Mexico.

P1578 **138.11** B cell subset changes during ovarian cancer. **J.E. Riggs, J. Maslanka, J. Londregan, N. Goldman, K. DePierri and J. Somerville**. Rider Univ.

P1600 **138.12** Extracellular K^+ released in the tumor microenvironment suppresses human T cell functions. **N.K. Verma, S.T. Ong, X.R. Ng, A.S. Ng, W.H.S. Brandon and K.G. Chandy**. Lee Kong Chian Sch. of Med., Nanyang Technological Univ., Singapore.

P1601 **138.13** Potent anti-tumor effector functions in tumor-infiltrating MAIT and γδ T cells isolated from colon cancer patients. **W.C.I. Rodin, P. Sundström, F. Ahlmanner, E.B. Lindskog and M. Quiding Järbrink**. Sahlgrenska Acad., Univ. of Gothenburg, Sweden.

P1602 **138.14** Regulatory T cells suppress the cytotoxic phenotype of T cells in intestinal tumors of $APC^{Min/+}$ mice. **L. Szeponik, P. Akeus, M. Quiding Järbrink and W.C.I. Rodin**. Univ. of Gothenburg, Sweden and Sahlgrenska Acad., Univ. of Gothenburg, Sweden.

P1605 **138.15** Tumor infiltrating B cells co-localize with CD4 T effector cells within organized tertiary lymphoid structures to present antigen and educate the anti-tumor immune response in human primary tumors. **T.C. Bruno, A. Ruffin, A. Cillo, D. Liu, S. Kunning, R.L. Ferris, D.A.A. Vignali and T.C. Bruno**. Univ. of Pittsburgh Sch. of Med. and Univ. of Pittsburgh Cancer Inst.

P1608 **138.16** Attenuated *Listeria* vaccine for cancer immunotherapy expands Vγ2Vδ2 T cells in rhesus monkeys that retain their central memory phenotype and HMBPP responsiveness. **C.T. Morita, M.H.N. Al-Janabi, G. Workalemahu and H. Wang**. Carver Col. of Med., Univ. of Iowa.

P1609 **138.17** Altered phenotypes of tumor-infiltrating B cells in response to exhausted CD8+ T cells. **C.A. Avalos, C. Egelston, D. Simons, M.H. Lim, Y. Huang and P.P. Lee**. City of Hope Beckman Res. Inst.

P1610 **138.18** Function of T follicular helper cells in anti-tumor immunity. **R.I. Nurieva, Z. Liu, A. Gangadharan, S. Bieerkehazhi, Y-Z. Zhao, A. Alekseev and A. Sahoo**. Univ. of Texas MD Anderson Cancer Ctr.

P1611 **138.19** The death receptor Fas mediates local bystander killing of antigen-negative variants by antigen-specific CD8 T cells in a heterogeneous tumor. **R. Upadhyay, A. Wroblewska, A. Baccarini, B.D. Brown and J.D. Brody**. Icahn Sch. of Med. at Mount Sinai.

P1612 **138.20** Characterizing unconventional T cells in the tumor microenvironment of metastatic osteosarcoma. **N. Appel, J. Christie and J. Blattman**. The Biodesign Inst.

P1613 **138.21** Identification of exhausted CD8+ T cells in low tumor mutation burden breast cancer patients. **C. Egelston, C.A. Avalos, D. Simons, Y. Huang, M.H. Lim and P.P. Lee**. Beckman Res. Inst., City of Hope.

P1614 **138.22** Satb1 deficiency licenses TFH-differentiation. **R.A. Chaurio Gonzalez, S. Biswas, K.K. Payne, C.M. Anadon Galindo, T. Lee Costich, A. Perales-Puchalt, J. Perez-Sanz, C.M. Harro, J.A. Mine, M.J. Allegrezza, N. Svoronos, J. Kroeger, J. Robinson and J.R. Conejo-Garcia**. Moffitt Cancer Ctr. and Res. Inst. and The Wistar Inst.

139. NOVEL STRATEGIES AND THEIR FUNCTIONS FOR PREVENTING RESPIRATORY INFECTIONS

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1636 **139.1** Metformin potentiates BCG efficacy against Mtb infection. **J. Haugen, A. Obregon-Henao, D. Ackart, A. Todd and R. Basaraba**. Colorado State Univ.

P1634 **139.2** Mucosal delivery of nanofiber booster vaccine enhances generation of antigen-specific memory T cells in the lung parenchyma. **M.A. Files, P. Bharaj, T.B. Saito, J. Rudra and J.J. Endsley**. Univ. of Texas Med. Br. and Washington Univ. in St. Louis.

P1618 **139.3** Intravenous Bacille Calmette-Guerin provides protection across a dose spectrum in a Rhesus macaque model of tuberculosis. **J.J. Zeppa, P.A. Darrah, S. Pokkali, J.A. Hackney, P.A. Maiello, C.A. Scanga, D.J. Laddy, P.L. Lin, R.A. Seder, M. Roederer and J.L. Flynn**. Univ. of Pittsburgh Sch. of Med., VRC, NIAID, NIH and AERAS.

P1619 **139.4** SOCS1 antagonist-expressing recombinant BCG enhances anti-tuberculosis protection in a mouse model. **Y. Yasutomi**. Natl. Inst. of Biomed. Innovation, Hlth. and Nutrition, Japan.

P1622 **139.5** Subunit vaccine candidate with adjuvant confers protection against clinical *Mycobacterium avium* in wild type and immunocompromised mouse models. **S.E. Larsen, V.A. Reese, T. Pecor, G. Brewer, B. Berube, S. Njikan, T. Parish, M. Henao-Tamayo, S.L. Baldwin and R.N. Coler**. Infectious Dis. Res. Inst. and Colorado State Univ.

P1620 **139.6** Antigen-presenting cell targeted, adjuvant-free mucosal vaccine induces protection against pneumococcal infection. **S. Kumar, R. Sunagar and E.J. Gosselin**. Albany Med. Col.

P1631 **139.7** Immunity of a *Klebsiella Pneumoniae* vaccine independent of antigen-specific antibody. **N. Iwanaga, I. Sandquist, K. Chen, E.B. Norton, J.R. Moreno and J.K. Kolls**. Tulane Univ. Sch. of Med., Univ. of Pittsburgh Sch. of Med. and Univ. of Rochester Med. Ctr.

P1625 **139.8** The development of *Klebsiella pneumoniae* vaccine strategy via eliciting the serotype-independent immunity in the lung. **N. Iwanaga, I. Sandquist, K. Chen, E.B. Norton, J.R. Moreno and J.K. Kolls**. Tulane Univ. Sch. of Med., Univ. of Pittsburgh Sch. of Med. and Univ. of Rochester Med. Ctr.

P1626 **139.9** Protective role of TH17 cells in an FcγR targeting immunization strategy against the respiratory bacterial pathogen, *Francisella tularensis*. **C. Bitsaktsis, J. McCauley and K. Devenney**. Seton Hall Univ.

P1638 **139.10** CD40-targeted S1 subunit vaccine protects against MERS-CoV and S1-associated pulmonary immunopathology in transgenic human DPP4 mouse model. **A.M. Hashem, A. Algaissi, A. Agrawal, S. Al-amri, A. Almasoud, N. Alharbi, B-H. Peng, X. Li and C-T. Tseng**. King Abdulaziz Univ., Saudi Arabia, Univ. of Texas Med. Br., King Abdullah International Med. Res. Ctr., Saudi Arabia and Hlth. Canada, Canada.

P1628 **139.11** Robust immune response and protection generated by a polyanhydride-based nanoparticle vaccine utilizing the RSV prefusion F protein and/or M protein. **L. Stephens, K.A. Ross, S.M. Hartwig, J.S. McLellan, B. Narasimhan, K.L. Legge and S.M. Varga**. Univ. of Iowa, Iowa State Univ. and Univ. of Texas, Austin.

P1629 **139.12** Recombinant live attenuated influenza virus expressing G protein fragment in a chimeric hemagglutinin molecule induces G-specific antibodies and confers protection against respiratory syncytial virus. **Y-J. Jung, Y-N. Lee, K-H. Kim, Y.H. Lee, J. Lee, C. Kim and S-M. Kang**. Georgia State Univ. and BEAMS Biotechnology, South Korea.

P1627 **139.13** Targeting CD40 enhances antibody- and CD8-mediated protection against respiratory syncytial virus infection. **A. Muralidharan, M. Russell, L. Larocque, C. Gravel, . Li, W. Chen, T. Cyr, J.R. Lavoie, A. Farnsworth, M. Rosu-Myles, L. Wang and X. Li**. Univ. of Ottawa, Canada, Hlth. Canada, Natl. Inst. for Food and Drug Control, China and Natl. Res. Council of Canada.

P1623 **139.14** Non-complexed chitosan acts as an adjuvant in an influenza A virus protein vaccine. **A.T. Lampe, E.J. Farris, M.D. Ballweg, A.K. Pannier and D.M. Brown**. Univ. of Nebraska, Lincoln.

P1637 **139.15** The complex of poly-γ-glutamic acid and aluminum salts ameliorates the reduced efficacy of the influenza H1N1 vaccine in aged mice. **J. Yang, J. Kim, C. Kwak and H. Poo**. Korea Res. Inst. of Bioscience and Biotechnology.

P1630 **139.16** LTA1 is a safe, intranasal, enterotoxin-based adjuvant that improves vaccine protection from influenza in young, old, and B cell-depleted (μMT) mice. **E.B. Norton, E. Valli, A.J. Harriett, M.K. Nowakowska, R.L. Baudier, W.B. Provosty, L. Lawson and Y. Nakanishi**. Tulane Univ. Sch. of Med.

P1621 **139.17** Novel approaches for studying cell-mediated immune responses to influenza vaccination in humans. **W. Cao, M. Mishina, Z. Ende, W.P. Mboko, D. Batra, C. Bohannon, P. Carney, J. Chang, P. Ranjan, A. Kumar, S. Amoah, S. Gangappa, S. Mittal, M. Sheth, J. Pohl, J. Stevens and S. Sambhara**. Ctr. for Dis. Control and Prevention and Purdue Univ.

P1635 **139.18** Neuraminidase expressed on virus-like particles is superior to inactivated split virus vaccine in conferring cross protection via humoral and cellular immunity. **K-H. Kim, Y-T. Lee, S. Park, Y-J. Jung, Y-J. Kim, Y. Lee and S-M. Kang**. Georgia State Univ.

P1624 **139.20** Neuraminidase inhibition governs protection efficacy of broadly neutralizing anti-influenza hemagglutinin stem antibodies. **I. Kosik, D. Angeletti, J.S. Gibbs, M. Angel, K. Takeda, M. Kosikova, V. Nair, H.D. Hickman, H. Xie, C.C. Brooke and J.W. Yewdell**. NIAID, NIH, CBER, FDA and Univ. of Illinois, Urbana-Champaign.

P1617 **139.21** Development of broadly neutralizing antibodies against influenza viruses from mice immunized with monoglycosylated hemagglutinin. **Y-A. Ko, Y-H. Yu, Y-C. Tseng, C. Ma and K-I. Lin**. Academia Sinica, Taiwan.

P1632 **139.22** Natural gene-encoded affinity for cognate antigen facilitates vaccine-amplification of broadly neutralizing antibodies against influenza virus. **D. Lingwood**. Ragon Inst. of MGH, MIT and Harvard.

P1615 **139.23** A computationally optimized broadly reactive antigen elicits broadly neutralizing antibodies against a conserved influenza virus hemagglutinin B cell epitope. **G.A. Sautto, G.A. Kirchenbaum, J.W. Ecker, R.B. Abreu, S.R. Pierce and T.M. Ross**. Univ. of Georgia, Athens.

P1633 **139.24** Computer-optimized immunization strategy to boost highly cross-reactive antibodies to RSV. **C.S. Anderson and T.J. Mariani**. Univ. of Rochester Med. Ctr.

P1639 **139.25** A knock-in mouse to test vaccines for the broadly neutralizing influenza response. **W. Li, T. Ota and D. Nemazee**. Scripps Res. Inst.

140. VIRUSES AND THE T CELL RESPONSE

Poster Session

SAT. 2:30 PM—EXHIBIT/POSTER HALL

P1678 **140.1** ITK regulates antigen-specific $CD8^+$ T cell-derived IL-10 production and modulates influenza-induced pulmonary immunopathology. **W. Huang, S. Solouki and A. August**. Sch. of Vet. Med., Louisiana State Univ. and Col. of Vet. Med., Cornell Univ.

P1660 **140.2** Single-cell transcriptomics identifies TOX as a key transcriptional regulator of stem-like CD8 T cells in chronic infection. **T. Wu, C. Yao, H. Sun, N. Lacey, L. Gattinoni, D.B. McGavern, J.J. O'Shea and P.L. Schwartzberg**. NIAID, NIH, NIAMS, NIH, NCI, NIH and NINDS, NIH.

P1671 **140.3** Herpesvirus entry mediator promotes Th1 responses in the cornea during ocular HSV-1 infection. **S.J. Park, R. Riccio, S. Kopp and R. Longnecker**. Feinberg Sch. of Med., Northwestern Univ.

P1673 **140.4** Cytotoxic CD4 T cells control host immunity during viral persistence. **N. Thiault, M. Husain, A. Chen, G. Verstichel, A. Larange, V. Shivagouda Patil, P. Vijayanand, M. Kronenberg and H. Cheroutre**. La Jolla Inst. for Immunology.

P1674 **140.5** Monocytes and macrophages limit systemic infection and modulate the CD4 T cell response during Zika virus infection in mice. **Y-T. Wang, S. Hattakam, M.P. Young, J.A. Regla-Nava and S. Shresta**. La Jolla Inst. for Immunology.

P1675 **140.6** PSGL-1 is a negative regulator of effector and memory T cells. **R. Tinoco and L.M. Bradley**. Univ. of California, Irvine and Sanford Burnham Prebys Med. Discovery Inst.

P1666 **140.7** The role of mTOR, TRAF1, and local antigen in 4-1BB-dependent establishment of T_{rm} in the lung. **N.V. Batista, A.C. Zhou and T.H. Watts**. Univ. of Toronto, Canada.

P1668 **140.8** The pleiotropic effects of *PTPN22* and its pro-autoimmune alternative allele on the anti-viral immune response and T cell exhaustion. **R.C. Orozco, K. Marquardt, K.A. Mowen, I. Pratumchai, J.R. Teijaro and L.A. Sherman**. Scripps Res. Inst.

P1662 **140.9** Overexpression of CD6 and PD-1 identifies dysfunctional T cells during chronic SIV infection in rhesus macaques. **G. Enyindah-Asonye, A. Nwankwo, M.A. Rahman, R. Hunegnaw, S. Helmold Hait, E-J. Ko, T. Hoang and M. Robert-Guroff**. NCI, NIH and NIH.

P1667 **140.10** Generation of tissue-restricted CD4 effectors (T_{FH} and ThCTL) requires signals from local antigen and infection during the effector phase. **P. Devarajan, A.M. Vong, C.H. Castonguay, B.L. Bautista and S.L. Swain**. Univ. of Massachusetts Med. Sch.

P1659 **140.11** Molecular signatures of IL-10/IFN-γ co-producing CD4 T cells during acute dengue virus infection. **Y. Tian, G. Seumois, S. Herrera de la Mata, S. Goonawardhana, A.D. de Silva, S. Premawansa, G. Premawansa, A. Wijewickrama, A. Grifoni, P. Vijayanand, B. Peters, D. Weiskopf and A. Sette**. La Jolla Inst. for Allergy and Immunology, General Sir John Kotelawala Defense Univ., Sri Lanka, Univ. of Colombo, Sri Lanka, North Colombo Teaching Hosp., Sri Lanka and NIAID, NIH.

P1658 **140.12** Microbial LPS enhances PD-1 therapy during chronic LCMV infection. **P.A. Penaloza-MacMaster, Y. Wang, S. Eitzinger, M. Bhattacharyya and P. Penaloza-MacMaster**. Northwestern Univ.

P1663 **140.13** Phospholipase A2 group IID is indispensable for coronavirus-specific humoral immune memory in middle-aged mice. **J. Zheng and S. Perlman**. Carver Col. of Med. Univ. of Iowa.

P1665 **140.14** Characterization of HLA-DP and DQ restricted Dengue virus-specific CD4+ T cell responses reveals lower magnitude responses associated with a differential pattern of immunodominance as compared to DR restricted responses. **D. Weiskopf, A. Grifoni, M. Angelo, E. Moore, J. Sidney, E.J. Phillips, S.A. Mallal, A.D. de Silva, B. Peters and A. Sette**. La Jolla Inst. for Immunology and Vanderbilt Univ. Sch. of Med.

P1677 **140.15** $CD4^+$ T cells promote humoral immunity and viral control during Zika virus infection. **A. Elong Ngono, M.P. Young, M. Bunz, Z. Xu, S. Hattakam, E. Vizcarra, J.A. Regla-Nava, W.W. Tang, M. Yamabhai, J.S. Wen and S. Shresta**. La Jolla Inst. for Immunology and Suranaree Univ. of Technol., Thailand.

P1661 **140.16** WITHDRAWN

P1664 **140.17** Increased polyfunction in CD4 T cells from persons with acute vs. remote shingles. **W. Jin, M. Fang, R. Vangipuram, I. Sayin, J. Golden, C. Cameron, M. Cameron, S. Tyring and D.H. Canaday**. Case Western Reserve Univ. and Univ. of Texas Hlth. Sci. Ctr.

P1669 **140.18** Human Vγ9Vδ2-T cells exhibit potent antiviral activity against EV71 infection. **W. Tu**. Univ. of Hong Kong, Hong Kong.

P1672 **140.19** IL-21 deficient T follicular helper (T_{FH}) cells support B cell responses through interleukin-27 in patients with chronic hepatitis B. **A. khanam, A. Natrajan, L. Tang, B. Poonia and S. Kottilil**. Univ. of Maryland Sch. of Med.

P1670 **140.20** Evaluation of Th17 and Treg cells during chronic Chikungunya infection. **I.C. Guerra-Gomes, J. Leite, A. Santana, B. Macêdo, R. Fonseca, T. Keesen, V. Carregaro and J. Silva**. Univ. of São Paulo, Brazil, Federal Univ. of Paraíba, Brazil and Ribeirão Preto Fac. of Med., Univ. of São Paulo, Brazil.

P1676 **140.21** Human Tfh cells possess a unique metabolism to allow them to differentiate and survive better upon HIV infection. **S. Rane, W. Li, J. Lan, N. Shepherd, F. Syed, J. Yang, Y. Xia and Q. Yu**. Indiana Univ. Sch. of Med.

P1679 **140.22** Evaluation of HIV-specific T-cell responses in HIV-infected aging patients with controlled viremia on long-term antiretroviral therapy. **N.E. Bradley, A. Wertheimer, S.A. Klotz and N. Ahmad**. Univ. of Arizona.

SUNDAY MORNING

MAY 12

141. MAJOR SYMPOSIUM E: MECHANISMS OF ALLERGIC IMMUNITY

Major Symposium

SUN. 8:00 AM—BALLROOM 20D

CHAIRS: *R.M. LOCKSLEY, J. VON MOLTKE*

8:00 ILC2s in allergic immunity–center stage or bit players? **R.M. Locksley**. Univ. of California, San Francisco.

8:35 The missing piece: tuft cells and the intestinal type 2 immune response. **J. von Moltke.** Univ. of Washington.

9:10 Lung crosstalk to residential immune cells. **X. Sun**. Univ. of California, San Diego.

9:45 Epithelial cell remodeling in the respiratory mucosa: from form to function. **N.A. Barrett.** Brigham and Women's Hosp.

10:20 The neuroimmune basis of chronic itch. **B.S. Kim**. Washington Univ. Sch. of Med. in St. Louis.

10:55 Control of dendritic cell migration in response to allergens. **C.L. Sokol**. Massachusetts General Hosp.

142. MAJOR SYMPOSIUM F: FUNCTIONAL PLASTICITY OF INNATE AND ADAPTIVE IMMUNE CELLS

Major Symposium

SUN. 8:00 AM—BALLROOM 20BC

CHAIRS: *A.W. GOLDRATH, J.A. HAMERMAN*

8:00 Reinforcing memory T cell states and fates. **A.W. Goldrath**. Univ. of California, San Diego.

8:35 Monocyte differentiation during inflammation. **J.A. Hamerman**. Benaroya Res. Inst.

9:10 Metabolic plasticity during hematopoietic development and B cell responses. **D. Bhattacharya.** Univ. of Arizona.

9:45 Dynamic T-bet expression in CD4 T cell subset. **J. Zhu**. NIAID, NIH.

10:20 Tumor immunity and pancreatic cancer. **D.G. DeNardo.** Washington Univ. in St. Louis.

10:55 Impact of genetic polymorphisms on human immune cell gene expression. **P. Vijayanand**. La Jolla Inst. for Immunology.

143. ANTIGEN PROCESS AND PRESENTATION I

Block Symposium

SUN. 8:00 AM—ROOM 26AB

CHAIRS: *S. CASCIO, L. PEASE*

8:00 Identification of specific T lymphocytes against to an IFNg inducible lysosomal thiol reductase-dependent, class II MHC-associated epitope in GILT $^{-/-}$ mice. **X. He, H. Dai, E. Reyes-Vargas and P.E. Jensen**. Univ. of Utah Sch. of Med. **(177.19)**

8:15 MHC class II conformers drive differential B cell activation. **J.R. Drake**. Albany Med. Col. **(177.20)**

8:30 Antigen processing and autophagy function in adjuvant-treated dendritic cell. **K. Hashimoto, T. Ootomo, A. Hasegawa, R. Kotera, D. Kobayashi and T. Nakayama**. Chiba Inst. of Tech., Japan, Yamaguchi Univ., Japan, Chiba Inst. of Tech. Grad. Sch. of Engin., Japan and Chiba Univ. Grad. Sch. of Med., Japan. **(177.26)**

8:45 An engineered vaccine encompassing an MHC class I antigen presenting molecule induces self-reacting CTL in a setting of profound tolerance. **L.R. Pease, C.A. Parks, D. Kranz and M. Barry**. Mayo Clin., Columbia Univ. Med. Ctr. and Univ. of Illinois, Urbana-Champaign. **(177.30)**

9:00 High GILT expression and an active and intact MHC class II antigen presentation pathway are associated with improved survival in melanoma. **K. Hastings, L. Meador, H. Menon, Y-K. Lu, J. Brill, H. Cui, D.J. Roe, D.J. DiCaudo and K.H. Buetow**. Univ. of Arizona, Arizona State Univ. and Mayo Clin. **(177.32)**

9:15 Splenic CD169+ marginal zone macrophages directly cross-prime CD8+ T cells in vivo using a vacuolar processing pathway. **P.M. Van Endert, F. Mauvais, Y. Hamel, J. Diana and M. Garfa**. Institut Necker-Enfants Malades, France and INSERM UMS24, France. **(177.22)**

9:30 Epitope mapping of *Mycobacterium tuberculosis* proteins using a non-human primate model of infection. **N.L. Grant, A.J. Balgeman, A.L. Ellis, S.L. O'Connor, C.A. Scanga and J.L. Flynn**. Univ. of Pittsburgh Grad. Sch. of Publ. Hlth., Univ. of Wisconsin-Madison and Univ. of Pittsburgh Sch. of Med. **(177.29)**

144. BASIC AUTOIMMUNITY: B CELLS

Block Symposium

SUN. 8:00 AM—ROOM 30AB

CHAIRS: *J. MOUNTZ, H. SCHJERVEN*

8:00 Type I IFN and IL-4R define B cell checkpoint defects in systemic lupus erythematosus. **J.D. Mountz, S. Liu, Q. Wu, P. Yang, W.Alex Essman, O.A. Ojo, B. Luo, M. Gao, J.Y. Chen, I. Sanz, W.W. Chatham and H-C. Hsu**. Univ. of Alabama at Birmingham and Emory Univ. **(179.5)**

8:15 Divergent roles for TLR7 and TLR9 in modulating the NFκB pathway in B cells. **K.K. Nundel, S. Moses, J.H. Shim and A. Marshak-Rothstein**. Univ. of Massachusetts Med. Sch. **(179.12)**

8:30 Ikaros mutations can bypass the requirement for second co-stimulatory signal and lead to break of B-cell tolerance. **H. Schjerven, P.D. Rodriguez, W. Howell, J. Vestbostad, S. Frietze and H. Schjerven**. Univ. of California, San Francisco, Univ. of Vermont and KG Jebsen Centre for B Cell Malignancies, Oslo Univ. Hosp., Norway. **(179.16)**

8:45 Ikaros regulates chromatin landscape in mature B cells, and is critical for B cell tolerance. **P.D. Rodriguez, W. Howell, E. Amiel, S. Frietze and H. Schjerven**. Univ. of Vermont and Univ. of California, San Francisco. **(179.15)**

9:00 Novel role of T cells to induce development of proliferative plasmablasts in systemic lupus erythematous. **O.A. Ojo, S. Liu, Q. Wu, P.A. Yang, D.K. Crossman, W. Chatham, H-C. Hsu and J.D. Mountz**. Univ. of Alabama, Birmingham and Univ. of Alabama Sch. of Med. **(179.10)**

9:15 The contribution of anergic B cells to protective immunity. **A. Agazio, K. Shotts-Schroeder, M.L. Santiago, R.A. Pelanda and R.M. Torres**. Univ. of Colorado Anschutz Med. Campus. **(179.14)**

9:30 Characterization of CD11c$^+$ B-cells from human blood. **S.F. Calbo, M. Demeules, C. Derambure, G. Riou, M. Vaillant, O. Boyer, P. Joly and M-L. Golinski**. Inserm U1234, France. **(179.6)**

9:45 Age-associated B cells in early drug-naive rheumatoid arthritis patients. **G.V. Vidal-Pedrola, J. Cameron, A. Pratt, A. Mellor, D. Scheel-Toellner, J. Isaacs and A. Anderson**. Newcastle Univ., United Kingdom and Univ. of Birmingham, United Kingdom. **(179.9)**

145. MOLECULAR CONTROL OF CD4$^+$ T CELL LIFE CYCLE: DEVELOPMENT, ACTIVATION, EFFECTOR, AND MEMORY

Block Symposium

SUN. 8:00 AM—ROOM 31ABC

CHAIRS: *B. ZHOU, D. TANTIN*

8:00 Characterization and transcriptional profiling of tissue-resident memory CD4$^+$ T cells. **Q.P. Nguyen, T. Deng and A.W. Goldrath**. Univ. of California, San Diego. **(186.2)**

8:15 NF-κB/mTOR/MYC axis drives PRMT5 protein induction after T cell activation. **S. Sengupta, L. Webb, J. Narvaez-Miranda, S. Amici, G. Nagy and M. Guerau-De-Arellano**. Col. of Med., The Ohio State Univ. and The Ohio State Univ. **(186.9)**

8:30 Transcription coactivator OCA-B mediates interactions between target loci in T cells and is sufficient to promote CD4 memory in vivo. **D.R. Tantin, K. Zhao, M.A. Williams, J.S. Hale, B. Lai, G. Ren and H. Kim**. Univ. of Utah and NHLBI, NIH. **(186.3)**

8:45 Identification of distinct highly pathogenic allergen-specific T cells in common allergy and asthma. **G. Seumois, C. Ramirez Suastegui, B.J. Shmiedel, S. Liang, V. Shulten, B. Panwar, A. Madrigal, A. Sette, B. Peters and P. Vijayanand**. La Jolla Inst. for Immunology. **(186.6)**

9:00 The role of aquaporin-4 in T cell activation. **M. Nicosia, A.M. Beavers, G.W. Farr, P.R. McGuirk, M. Pelletier and A. Valujskikh**. Cleveland Clin. and Aeromics LLC. **(186.8)**

9:15 Lymphopenia and bone marrow T cell sequestration accompanying stroke are mediated by T cell S1P1 loss. **D.S. Wilkinson, C. Dechant, P. Chongsathidkiet, H. Wang, H. Kemeny, D. Laskowitz and P. Fecci**. Duke Univ. Med. Ctr. **(186.15)**

9:30 Using single-cell RNA-seq to lineage trace effector to memory transitions in CD4$^+$ T cells during malaria. **S.F.M. Soon, J. Engel, J. Lee, K. James, T. Lonnberg, V. Svensson, S. Teichmann and A. Haque**. QIMR Berghofer Med. Res. Inst., Australia, Wellcome Trust Sanger Inst., Univ. of Turku, Finland and California Inst. of Technol. **(186.1)**

9:45 Activation-dependent posttranscriptional regulation of CD40L is required for an optimal germinal center response. **B. Narayanan, D. Prado De Maio, K. Voskoboynik, J. La Porta, P. Xie and L.R. Covey**. Rutgers Univ. **(186.16)**

146. ADVANCES IN THERAPEUTIC APPROACHES FOR NEUROLOIMMUNOLOGIC DISEASES

Block Symposium

SUN. 8:00 AM—ROOM 33ABC

CHAIRS: *N. KARANDIKAR, F. QUINTANA*

8:00 Efficacies of anti-CD20 antibody and atacicept are differentially impacted by B cell maturation antigen in neuro-autoimmunity. **G. Kumar, R.M. Ko and R.C. Axtell**. Oklahoma Med. Res. Fndn. **(193.9)**

8:15 Human neural stem cells induce central nervous system specific regulatory T cells from the ex Treg pool and promote repair in models of multiple sclerosis. **S.A. Greilach, L.L. McIntyre, J. Hasselmann, S. Othy, Q. Nguyen, K. Kessenbrock, M.D. Cahalan, M. Blurton-Jones, T. Lane and C.M. Walsh**. Univ. of California, Irvine and Univ. of Utah, Sch. of Med. **(193.10)**

8:30 Neuroantigen-specific regulatory CD8+ T cell responses as a therapy for relapsing autoimmune demyelinating disease. **A.A. Brate, F.R. Itani, L.L. Pewe, J.T. Harty and N.J. Karandikar**. Carver Col. of Med. Univ. of Iowa. **(193.11)**

8:45 IL-22 and Reg3γ overexpression affects experimental autoimmune encephalomyelitis severity. **A. Eken, M.F. Yetkin, F.Z. Okus, M. Cakir, M.O. Karayigit, S. Erdem, Y. Haliloglu, M. Oukka, H. Donmez Altuntas, M. Mirza and H. Canatan**. Erciyes Univ., Cumhuriyet Univ. and Univ. of Washington Sch. of Med. **(193.12)**

9:00 The aryl hydrocarbon receptor as a regulator of CNS autoimmunity. **J. Kenison-White, A. Jhaveri, S. Tezza, D. Nowakowska, D. Sherr and F.J. Quintana**. Boston Univ. Sch. of Med., AnTolRx, Inc. and Brigham and Women's Hosp., Harvard Med. Sch. **(193.13)**

9:15 Myelin basic protein specific TCR-engineered regulatory T cells from multiple sclerosis patients are suppressive to MBP-specific T effector cells. **A. de Paula Alves Sousa, Y.C. Kim, S. Jacobson and D.W. Scott**. Uniformed Serv. Univ. of the Hlth. Sci. and NINDS, NIH. **(193.14)**

9:30 Deficiency in B cell maturation antigen reveals gender differences in experimental autoimmune encephalomyelitis. **G. Kumar, R.M. Ko and R.C. Axtell**. Oklahoma Med. Res. Fndn. **(193.15)**

9:45 Photobiomodulation therapy regulates the production of IL-10 and IFN-γ by peripheral blood mononuclear cells and CD4+ T cells isolated from subjects with multiple sclerosis. **M. Tolentino, C.C. Cho and J-A. Lyons**. Univ. of Wisconsin, Milwaukee. **(193.16)**

147. NOVEL TUMOR TARGETS/THERAPIES

Block Symposium

SUN. 8:00 AM—ROOM 29ABCD

CHAIRS: *M. KROGSGAARD, K. PAYNE*

8:00 JAML-CAR—a mechanism of T cell antitumor immunity. **J.M. McGraw, D. Witherden and W.L. Havran**. Scripps Res. Inst. **(194.1)**

8:15 Butyrophilin 3A1 is a dynamic T cell regulator in ovarian cancer. **K.K. Payne, R. Chaurio Gonzalez, J. Perez Sanz, C.M. Anadon Galindo, S. Biswas, J.A. Mine, A. Perales-Puchalt, E. Tsiganov, T.L. Costich, C.M. Harro, A.K. Marrs, J. Lajoie, K-P. Li, M. Ophir, U. Eskiocak, M. Schmidt, D.I. Gabrilovich and J.R. Conejo-Garcia**. Moffitt Cancer Ctr. and Res. Inst., Wistar Inst. and Compass Therapeutics. **(194.2)**

8:30 Combination of anti-CD40 and anti-PD1 revert M2 polarization to limit tumor growth in a genetically engineered bladder cancer mouse model. **G. Verdeil, M. Leblond, C. Imbratta and D.E. Speiser**. Univ. of Lausanne, Switzerland. **(194.3)**

8:45 Inhibition of NK cell-MHCI interactions disrupts immune homeostasis by activation of the IFNγ/IL15 axis resulting in augmentation of anti-tumor immunity. **A.K. Panda and E.M. Shevach**. NIAID, NIH. **(194.4)**

9:00 T cell intrinsic mechanisms of resistance to PD-1 checkpoint blockade. **M. Krogsgaard, D. Moogk, L. Wang, K. Li, Z. Yuan, J. Weber, I. Osman and C. Zhu**. New York Univ. Sch. of Med., Georgia Inst. of Tech., NYU Med. Ctr. and New York Univ. Med. Ctr. **(194.5)**

9:15 Virus-specific memory T cells populate tumors and can be repurposed as a tumor immunotherapy. **P. Rosato, S. Wijeyesinghe, M. Stolley, C. Nelson, R.L. Davis, L.S. Manlove, C.A. Pennell, B.R. Blazar, C.C. Chen, M.A. Geller, V. Vezys and D. Masopust**. Univ. of Minnesota. **(194.6)**

9:30 Low-dose neoadjuvant chemotherapy dominates Ki67$^-$ quiescent tumor dormancy for an effective immunotherapy of breast cancer. **H. Aqbi, C. Coleman, M. Idowu and M. Manjili**. Virginia Commonwealth Univ. **(194.7)**

9:45 Type I interferon suppresses tumor growth through activating the STAT3-granzyme B pathway in tumor-infiltrating cytotoxic T lymphocytes. **C. Lu, J.D. Klement, M.L. Ibrahim, P.S. Redd, G. Zhou and K. Liu**. Augusta Univ. **(194.8)**

148. HOW VIRUSES OVERRIDE THE IMMUNE SYSTEM

Block Symposium

SUN. 8:00 AM—ROOM 25ABC

CHAIRS: *J. TING, M. RICHER*

8:00 Alveolar macrophage dysfunction and increased PD-1 expression during chronic SIV infection of rhesus macaques. **R. Hunegnaw, Z. Mushtaq, G. Enyindah-Asonye, T. Hoang and M. Robert-Guroff**. NIH. **(197.1)**

8:15 HIV-induced production of CCL2 may promote rapid seeding of the latent HIV reservoir. **T.A. Packard, E. Herzig, X. Luo, J.H. Egedal, Z.W. Grimmett, K.J. Hasenkrug, N. Roan and W.C. Greene**. Gladstone Inst. of Virology and Immunology, Aarhus Univ., NIAID, NIH and Univ. of California, San Francisco. **(197.2)**

8:30 Stochastic HIV gene expression is a novel mechanism for HIV persistence. **R.A. Matus Nicodemos, D. Douek and R. Koup**. NIAID, NIH. **(197.3)**

8:45 NLRX1 facilitates HIV-1 infection of CD4 T cells by promoting oxidative phosphorylation. **H. Guo, Q. Wang, L. Wang, E. Rampanelli, X. Chen, S. Chanda, L. Su and J.P. Ting**. Univ. of North Carolina, Chapel Hill, Univ. of Amsterdam, The Netherlands and Sanford Burnham Prebys Med. Discovery Inst. **(197.4)**

9:00 Sphingosine kinase 2 mediates LCMV-induced CD4$^+$ T cell suppression and instigates viral persistence while preventing immunopathology. **C.J. Studstill, C.J. Pritzl, Y-J. Seo, D.Y. Kim, C.Z. Xia, J.J. Wolf, M. Vijayan and B. Hahm**. Univ. of Missouri, Columbia and Chung-Ang Univ. **(197.5)**

9:15 A Brazilian Zika virus isolate suppresses type I interferon to establish a sustained infection in immunocompetent mice. **R.D. Pardy and M.J. Richer**. McGill Univ., Canada. **(197.6)**

9:30 Impaired T cell activation resulting from IL-33 induced myeloid derived suppressor cells and IL-10 secreting Tregs is a major determinant of susceptibility to HSV1 infection of the central nervous system. **R. Chandran, S. Mendonca and EM. Cantin**. City of Hope Beckman Res. Inst. **(197.7)**

9:45 Vaccinia virus E5 is a dominant inhibitor of the cytosolic DNA sensor cGAS. **N. Yang, Y. Wang, S. Shuman and L. Deng**. Memorial Sloan Kettering Cancer Ctr. **(197.8)**

Sunday is the last day to visit the Exhibit Hall.
Open 9:30 AM – 4:30 PM.

149. SECRETS FOR A SUCCESSFUL POSTDOCTORAL FELLOWSHIP

Career Development Session

SUN. 9:00 AM—ROOM 32AB

CHAIR: *M.T. LITZINGER*

A postdoctoral fellowship is the time to develop research skills you will need to succeed as an independent scientist. It is, however, just as important to realize that you need to prepare for a career path at the same time. This session will highlight ways of getting the most out of your postdoctoral fellowship, relating successfully with your mentor, and understanding how to use the resources available to you to ensure that your training prepares you adequately for a seamless transition into the next phase of your career.

9:00 Introduction. **M.T. Litzinger**. AAI.
9:05 Secrets for a Successful Postdoctoral Fellowship. **R. Wheeler**. Scripps Res. Inst.

150. NIH GRANT REVIEW AND FUNDING INFORMATION ROOM

Career Development Session

SUN. 9:30 AM (ALL DAY)—ROOM 21

NIH program and review staff will be available for individual conversations and consultations. Staff members will answer questions about the scientific review process, grant/fellowship opportunities, and NIH Institute specific interests. Consultations will be available on a drop-in basis. No appointments are necessary.

151. INTERNATIONAL OPPORTUNITIES IN SCIENCE

Career Development Session

SUN. 10:15 AM—ROOM 32AB

CHAIR: *W.F. PICKL*

Working as a scientist outside of the U.S. requires curiosity, adaptability, and open-mindedness, which are valuable qualities important for success in any career. Given the international reach of science, this new session will help immunologists learn about opportunities to gain professional experience beyond the U.S. This panel features scientists employed at academic or research institutions around the globe. Panelists will discuss the postdoctoral fellowship and grant application process, the benefits of international training and employment, and the challenges in finding science-related jobs outside of the U.S. This session is open to anyone.

PANELISTS:
- **M. Collin.** Lund Univ., Sweden.
- **T. Kamradt**. Univ. Hosp. Jena, Germany.
- **S. Koyasu.** RIKEN Ctr. for Integrative Med. Sci., Japan.
- **H. Ostergaard.** Univ. of Alberta, Canada.
- **E.-C. Shin.** Korea Adv. Inst. of Sci. and Technol., Korea.

152. NIH GRANTS WORKSHOP: DEMYSTIFYING THE GRANT APPLICATION SUBMISSION, REVIEW, AND FUNDING PROCESSES

Career Development Session

SUN. 10:15 AM—ROOM 30AB

CHAIR: *T. MCINTYRE*

This workshop will provide participants with an overview of NIH grant submission, assignment, review, and funding opportunities. Emphasis will be given to identification of the most appropriate funding agencies and mechanisms available through NIH, how to make an application "reviewer friendly," and other strategies that contribute to applications that succeed in obtaining research funding. The workshop will also provide information on how to understand the peer review system, which is essential to competing successfully for funding, with a focus on recent changes to the review process. NIH review and program staff will provide a broad array of expertise and encourage questions from seminar participants. This workshop is open to anyone interested in learning more about preparing an NIH grant application and obtaining NIH funding. Trainees and independent investigators are welcome.

PANELISTS:
- **T. McIntyre.** CSR, NIH.
- **D. Hodge.** CSR, NIH.
- **J. Breen.** NIAID, NIH.

153. THE AMERICAN SOCIETY FOR HISTOCOMPATIBILITY AND IMMUNOGENETICS (ASHI): HLA AND HUMAN IMMUNITY

Guest Society Symposium

SUN. 10:15 AM—ROOM 31ABC

CHAIRS: *W. HILDEBRAND, E. REED*

10:15 Role of HLA in allergy. **B. Peters**. La Jolla Inst. for Allergy and Immunology.
10:35 HLA and the mutational burden of tumors. **H. Carter**. Univ. of California, San Diego.
10:55 Monitoring antibodies to HLA in organ transplantation. **E. Reed**. Univ. of California, Los Angeles.
11:15 Co-evolution of HLA and HIV-1. **T. Allen.** Harvard Univ.
11:35 T cell responses mediated by human MR1. **M. Hariff**. Oregon Hlth. & Sci. Univ.

154. CANADIAN SOCIETY FOR IMMUNOLOGY (CSI) SYMPOSIUM: EVOLVING MECHANISMS OF DISEASE TOLERANCE IN INFECTION AND IMMUNITY

Guest Society Symposium

SUN. 10:15 AM—ROOM 25ABC

CHAIRS: *I. KING, L. OSBORNE*

10:15 Innate immune mechanisms of disease tolerance to intestinal helminth infection. **I. King**. McGill Univ.
10:45 Disease tolerance: a missing link in immunity to influenza virus infection. **M. Divangahi**. McGill Univ.
11:15 Using mouse diversity as a way to probe disease tolerance to malaria infections. **D. Schneider**. Stanford Univ.

11:45 Dissecting the contributions of host resistance and tolerance in the outcome of *Mycobacterium tuberculosis* infection. **A. Olive**. Michigan State Univ.

155. INFLAMMATORY AND AUTOIMMUNE DISEASE

Block Symposium

SUN. 10:15 AM—ROOM 30CDE

CHAIRS: *R. TIROUVANZIAM, A. JOHNSON*

10:15 Galectin-3 promotes non-canonical inflammasome activation through binding to glycans on LPS intracellularly. **T-H. Lo, H-L. Chen, H-Y. Chen and F-T. Liu**. Academia Sinica, Taiwan. **(183.1)**

10:30 Leukotriene B4 is required for inflammasome activation. **A. Salina, S. Brandt, A.I. Medeiros and H. Serezani**. Vanderbilt Univ. Med. Ctr. and Sao Paulo State Univ. **(183.17)**

10:45 Roles of Toll-like receptors in regulating fibroblastic reticular cell pathobiology during sepsis. **M. Deng, Y. Li, T. Chen, K. Chen and T.R. Billiar**. Univ. of Pittsburgh. **(183.5)**

11:00 PGD_2/DP1 signaling deficiency ameliorates experimental autoimmune encephalitis. **J. Zheng and S. Perlman**. Carver Col. of Med., Univ. of Iowa. **(183.7)**

11:15 Prevention of erythrocyte fragility and anemia induced by extracellular histones. **F. Kordbacheh, C.H. O'Meara, L.A. Coupland, P.M. Lelliott and C.R. Parish**. The John Curtin Sch. of Med. Res., Australian Natl. Univ., Australia. **(183.3)**

11:30 Single-step purification of sputum extracellular vesicles from cystic fibrosis patients using aF4-MALS. **B. Dobosh, S. Liu, M. Chen and R.M. Tirouvanziam**. Emory Univ. and Wyatt Tech. **(183.15)**

11:45 Glycolytic regulation of neuroinflammatory response: role of monocarboxylate transporter 4. **S. Giri, J. Singh, H. Suhail, A. Kumar and R. Rattan**. Henry Ford Hlth. Sys. and Wayne State Univ. Sch. of Med. **(183.12)**

12:00 Brain-Thymus communication is a novel immunosuppressive feature of neurological insults. **K. Ayasoufi, C.K. Pfaller, R.H. Khadka, F. Jin and A.J. Johnson**. Mayo Clin., Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin., Rochester, Minnesota. **(183.19)**

156. IMMUNITY DURING INTESTINAL DISEASE

Block Symposium

SUN. 10:15 AM—ROOM 33ABC

CHAIRS: *J. KUBINAK, D. OLIVARES-VILLAGOMEZ*

10:15 Ulcerative colitis-associated *E. coli* pathobionts potentiate colitis in susceptible hosts. **H. Yang, H.C. Mirsepasi-Lauridsen, C. Struve, J.M. Allaire, E. Bosman, A. Sivignon, W. Vogl, C. Ma, G. Reid, X. Li, A.M. Petersen, K. Jacobson, S. Gouin, N. Barnich, H. Yu, K.A. Krogfelt and B.A. Vallance**. Univ. of British Columbia, Canada, Statens Serum Inst., Denmark, Clermont Univ., France., Lerner Res. Inst., Hvidovre Univ. Hosp., Denmark and LUNAM Univ., France. **(192.3)**

10:30 Gut IgA abundance in adult life can protect from DSS colitis even if maternal IgA received in early life is inadequate. **S. Gupta, S. Basu, V. Bal, S. Rath and A. George**. Natl. Inst. of Immunology, India and Weill Cornell Med. **(192.6)**

10:45 Enhancement of gut barrier function by microbial metabolite, urolithin A via AhR-Nrf2 dependent pathways in IBD. **V.R. Jala, R. Singh, S. Chandrashekarappa, S.R. Bodduluri, B.V. Becca, B. Hegde, N. Kotla, A.A. Hiwale, T. Saiyed, P. Patel, M. Vijay-Kumar, M. Langille, G.M. Douglas, G. Dryden, X. Cheng, E. Rouchka, S.J. Waigel, H. Alatassi, H-G. Zhang, B. Haribabu and P.K. Vemula**. Univ. of Louisville, Inst. for Stem Cell Biol. and Regenerative Med., India, Univ. of Louisville., Centre for Cellular and Molec. Platforms, India, The Univ. of Toledo Col. of Med. and Life Sci. and Dalhousie Univ., Canada. **(192.4)**

11:00 Lingo3 interacts with TFF2 to control mucosal integrity, type 1 inflammation, and colitic tissue repair. **K. Zullo, Y. Ji, Y. Wei, K. Herbine, N. Maloney, R. Cohen, C. Pastore, M. Somsouk, S. Srivatsa, L-Y. Hung, M. Kohanski, N. Cohen and D. Herbert**. Univ. of Pennsylvania Sch. of Vet. Med., Univ. of California, San Francisco and Perelman Sch. of Med., Univ. of Pennsylvania. **(192.8)**

11:15 Maternal immunoglobulin A protects against the development of necrotizing enterocolitis in preterm infants. **T.W. Hand, K. Gopalakrishna, B.R. Macadangdang, M. Rogers, J.T. Tometich, J. Ji, B.A. Firek, R. Baker, A.H.P. Burr, C. Ma, M. Good and M. Morowitz**. Univ. of Pittsburgh, David Geffen Sch. of Med., UCLA, Univ. of Pittsburgh Sch. of Med., Sch. of Med., Tsinghua Univ., China and Washington Univ., St. Louis. **(192.10)**

11:30 Indole-3-carbinol prevents murine colitis development via an IL-22-dependent mechanism that regulates anti-microbial peptides and mucus production. **P.B. Busbee, H. Alrafas, N. Dopkins, M. Nagarkatti and P.S. Nagarkatti**. Univ. of South Carolina Sch. of Med. **(192.12)**

11:45 Gut antibody deficiency in $CD19^{-/-}$ mice results in a spontaneous Celiac-like sprue. **A.D. Mohammed and J.L. Kubinak**. Univ. of South Carolina Sch. of Med. **(192.11)**

12:00 Osteopontin promotes survival of intestinal intraepithelial lymphocytes and protects against colitis. **A. Nazmi, M.J. Greer, K.L. Hoek, M.B. Piazuelo, H-H. Weitkamp and D. Olivares-Villagomez**. Vanderbilt Univ. Med. Ctr. **(192.2)**

157. AAI VANGUARD LECTURE

Committee-Sponsored Session

Sponsored by the AAI Minority Affairs Committee

SUN. 11:15 AM—ROOM 26AB

CHAIR: *R.J. BINDER*

Since 2003, the AAI meeting has featured a scientific lecture presented by an AAI member who is an underrepresented minority investigator noted for scientific achievement and exemplary career success.

11:15 Adenosine receptor axis in blood brain barrier (BBB) permeability regulation. **M.S. Bynoe.** Cornell Univ.

SUNDAY AFTERNOON

MAY 12

158. AAI PRESIDENT'S SYMPOSIUM AND PRESENTATION OF EXCELLENCE IN MENTORING AWARD

President's Program

SUN. 12:30 PM—BALLROOM 20BCD

CHAIR: *J.L. FLYNN*

PRESENTATION OF EXCELLENCE IN MENTORING AWARD

The AAI Excellence in Mentoring Award recognizes exemplary career contributions to a future generation of scientists.

12:30 Introduction. **J.L. Flynn**, Univ. of Pittsburgh Sch. of Med., AAI President; and **M.L. Shinohara**, Duke Univ. Sch. of Med.

Recipient: **H. Cantor**. Dana-Farber Cancer Inst., Harvard Med. Sch.

PRESIDENT'S SYMPOSIUM: INTERACTIONS OF PATHOGENS WITH THE IMMUNE SYSTEM

12:50 Tuberculosis: exceptions to every rule. **P. Lin.** Children's Hosp. of Pittsburgh.

1:15 Immunity in the immunocompromised host. **K.A. Norris.** Univ. of Georgia.

1:40 Intravenous vaccination as an approach for inducing protective tissue resident T cell responses against tuberculosis and malaria. **R. Seder.** NIAID, NIH.

2:05 Transcriptional regulation of the inflammatory response. **V. Lazarevic.** NCI, NIH.

160. SOCIETY FOR NATURAL IMMUNITY (SNI) SYMPOSIUM: NOVEL INSIGHTS INTO NATURAL KILLER CELL METABOLISM AND FUNCTION

Guest Society Symposium

SUN. 12:30 PM—ROOM 26AB

CHAIRS: *A. CERWENKA, T. FEHNIGER*

12:30 Metabolic requirements for NK cell antiviral effector functions. **M.A. Cooper**. Washington Univ. Sch. of Med.

1:00 mTOR-dependent NK cell proliferation and subset plasticity maintains global repertoire stability during homeostasis. **K.-J. Malmberg.** Oslo Univ. Hosp., Norway.

1:30 Inhibition of the Hif1a-mediated metabolic checkpoint unleashes potent NK cell anti-tumor immunity. **J. Ni**. Heidelberg Univ., Germany.

2:00 Natural Killer cells switch their killing mechanism during serial killing of tumor cells. **C. Watzl.** Leibniz Res. Ctr., Germany.

161. THE SOCIETY FOR GLYCOBIOLOGY (SFG) SYMPOSIUM: HARNESS THE GLYCOME IN IMMUNITY

Guest Society Symposium

SUN. 12:30 PM—ROOM 30AB

CHAIRS: *G. ALTER, J. PAULSON*

12:30 Sweet revenge – bacterial immune evasion through specific antibody glycan hydrolysis. **M. Collin**. Lund Univ., Sweden.

1:00 Adaptive immune responses induced by HIV envelope glycoprotein. **V. Avci**. Univ. of Georgia.

1:30 B cell-independent glycan programming of IgG function. **B. Cobb.** Case Western Reserve Univ.

2:00 Mucin glycans in the regulation of microbial virulence. **K. Ribbeck**. Massachusetts Inst. of Technol.

162. THE OBESITY SOCIETY (TOS) SYMPOSIUM: ROLES OF IMMUNE CELLS IN OBESITY-ASSOCIATED INFLAMMATION

Guest Society Symposium

SUN. 12:30 PM—ROOM 32AB

CHAIRS: *G.V. DENIS, V. PERISSI*

12:30 Immune dysregulation increasing risk of comorbidities in childhood obesity. **A.E. Hogan**. Natl. Children's Res. Ctr., Ireland.

1:00 The cGAS-cGAMP-STING pathway: a molecular link between immunity and metabolism. **F. Liu.** Univ. of Texas Hlth. Sci. Ctr, San Antonio.

1:30 Chronic inflammation in progression of triple negative breast cancer in disparate populations. **N. Ko**. Boston Med. Ctr.

2:00 BET bromodomain targeting suppresses the PD-1/PD-1L pathway in triple-negative breast cancer and elicits anti-tumor immune response. **G. Andrieu**. Inst. Necker Enfants Malades, France.

163. BASIC AUTOIMMUNITY: ANTIGENS AND INNATE IMMUNITY

Block Symposium

SUN. 12:30 PM—ROOM 25ABC

CHAIRS: *R. BUCALA, N. YAN*

12:30 Antigen dose affects disease kinetics in a murine model of demyelinating disease. **C.A.M. Gavile, A. Alexander, F. Adler and B.D. Evavold**. Univ. of Utah. **(180.7)**

12:45 Increased immune surveillance of neuron-restricted antigen during demyelination leads to axon loss perpetrated by CD8+ T cells. **B.D.S. Clarkson, E.M. Grund, K. Mirchia, M.M. Standiford and C.L. Howe**. Mayo Clin. and Mayo Grad. Sch. **(180.1)**

1:00 Small numbers of T cells specific to different myelin-antigens cooperate to induce autoimmunity in a murine model of multiple sclerosis. **R.R. Robinson, E.M. Rojano and T. Forsthuber**. Univ. of Texas, San Antonio. **(180.3)**

1:15 Pancreatic beta cells are constantly interacting with the immune system. **X. Wan, B. Zinselmeyer, P. Zakharov, A.N. Vomund, C.F. Lichti and E.R. Unanue**. Washington Univ. Sch. of Med., St. Louis. **(180.5)**

1:30 Natural killer cell re-modeling of the extra-cellular matrix by the degradation of hyaluronan: potential role in type 1 diabetes. **B.E. Fuchs, V. Wall, I. Kang, G. Workman, S. Evanko, T. Wight and S.A. Long**. Benaroya Res. Inst. **(180.11)**

1:45 MIF and MIF2 have distinct but synergistic roles in CIA pathogenesis. **E.H. Doherty, P.V. Tilstam and R. Bucala**. Yale Univ. Sch. of Med. **(180.13)**

2:00 Pulmonary involvement in a mouse model of Sjögren's syndrome induced by activation of the STING pathway. **J.A. Papinska, G. Gmyrek, R.S. Srinivasan, U. Deshmukh and H. Bagavant**. Oklahoma Med. Res. Fndn. **(180.16)**

2:15 STING-mediated chronic activation of ER stress through disrupting calcium homeostasis primes T cells for cell death. **J. Wu and N. Yan**. Univ. of Texas Southwestern Med. Ctr. **(180.15)**

164. CYTOKINE AND CHEMOKINE CONTROL OF IMMUNITY

Block Symposium

SUN. 12:30 PM—ROOM 33ABC

CHAIRS: *V. KALIA, S. SARKAR*

12:30 The GRB2-associated binding protein 3 is required for IL-2 and IL-15 induced NK-cell expansion and limits trophoblast invasion during pregnancy. **A. Sliz, K.C.S. Locker, K. Lampe, A. Godarova, D.R. Plas, E. Janssen, H. Jones, A.B. Herr and K. Hoebe**. Univ. of Cincinnati and Cincinnati Children's Hosp. Med. Ctr. **(181.26)**

12:45 Type II cytokines in the thymic microenvironment influence T cell negative selection in type one diabetes. **A.N. Cattin-Roy, T.K. Ukah and H. Zaghouani**. Univ. of Missouri. **(181.1)**

1:00 IL-33 is a cell-intrinsic regulator of early developing B cell fitness. **M.T. Stier, R. Mitra, K. Goleniewska, J. Zhang, C.M. Eischen and R.S. Peebles, Jr**. Vanderbilt Univ. Sch. of Med., Thomas Jefferson Univ. and Vanderbilt Univ. Med. Ctr. **(181.15)**

1:15 Human bone marrow plasma cell survival is independent of APRIL. **D.C. Nguyen, C. Saney, I. Sanz and F.E-H. Lee**. Emory Univ. **(181.16)**

1:30 Intestinal interleukin (IL)-22RA1 signaling regulates the reciprocal control of IL-22 and onset of high fat diet-induced metabolic disorders. **S. Gaudino, H. Huang, M. Jean-Pierre, M. Beaupre, X. Lin and P. Kumar**. Stony Brook Univ. **(181.11)**

1:45 IL-17D promotes anti-bacterial immunity in group A Streptococcus infection. **A. Washington, A. Valderrama, V. Nizet, N. Varki and J.D. Bui**. Univ. of California, San Diego. **(181.21)**

2:00 Transcriptomic analysis of human IL-7 receptor alpha ^{low} and ^{high} effector memory CD8$^+$ T cells reveals an age-associated signature linked to influenza vaccine response in older adults. **H-J. Park, M.S. Shin, M. Kim, J. Bilsborrow, S. Mohanty, R.R. Montgomery, A. Shaw, S. Yoo and I. Kang**. Yale Univ. Sch. of Med. and Cedars-Sinai Med. Ctr. **(181.22)**

2:15 IL-2 signals program the fate of exhausted CD8 T cells. **V. Kalia, H. Xiao, Y. Yuzefpolskiy and S. Sarkar**. Univ. of Washington and Seattle Children's Res. Inst. **(181.24)**

165. INNATE CELLS IN ANTI-PATHOGEN AND CYTOKINE RESPONSES

Block Symposium

SUN. 12:30 PM—ROOM 30CDE

CHAIRS: *M. NAGARKATTI, J. YEN*

12:30 Functional Nrf2 restrains inflammatory and transcriptional phenotypes in microglia and its deficiency recapitulates the aging phenotype. **I-C.I. Yu, H.C. Paraiso, P-C. Kuo, B.A. Scofield, R.D. Sweazey, F-L. Chang and J-H. Yen**. Indiana Univ. Sch. of Med. **(185.17)**

12:45 MiR-146a is a negative regulator of IL-33-stimulated mouse mast cells. **S.A. Kee, M.T. Taruselli, J.J. Ryan and A. Abdul Qayum**. Virginia Commonwealth Univ. **(185.5)**

1:00 Cannabinoid receptor 1 blockade attenuates obesity and adipose tissue type 1 inflammation through miR-30e-5p regulation of Delta-like-4. **K. Miranda, P. Mehrpouya-Bahrami, P.S. Nagarkatti and M. Nagarkatti**. Univ. of South Carolina Sch. of Med. **(185.6)**

1:15 Genome-wide analysis identifies pairs of *cis*-acting lncRNAs and protein-coding genes involved in innate immunity. **Q. Zhang, T-C. Chao, V.S. Patil, Y. Qin, S.K. Tiwari, J. Chiou, A. Dobin, C-M. Tsai, Z. Li, J. Dang, S. Gupta, K.B. Urdahl, V. Nizet, T.R. Gingeras, K.J. Gaulton and T.M. Rana**. Univ. of California, San Diego Sch. of Med., Cold Spring Harbor Lab. and Univ. of Washington Sch. of Med. **(185.1)**

1:30 Genomic analysis of bone marrow progenitors during viral infection reveals novel dendritic cell regulators. **Y. Jo, K. Zhang, W. Wang and E. Zuniga**. Univ. of California, San Diego. **(185.7)**

1:45 PD-L2 generates a signal through the PD-1 co-receptor distinct from that of PD-L1. **A. Srinivasamani, Q. Liu and M. Curran**. Univ. of Texas MD Anderson Cancer Ctr. **(185.2)**

2:00 Regulatory role of Ifit2 in mouse hepatitis virus induced neuroinflammation. **J. Das Sarma, A. Burrows, P. Kessler, M-H. Hwang, C. Bergmann and G.C. Sen**. Indian Inst. of Sci. Educ. and Res., India and Cleveland Clin. **(185.3)**

2:15 Indole-3-carbinol ameliorates colonic inflammation in DSS-treated, *Helicobacter muridarum*-infected mice. **R.R. Alkarkoushi, U.P. Singh, I. Chatzistamou, M. Bam, Y. Hui, M. Nagarkatti, P. Nagarkatti and T.L. Testerman**. Univ. of South Carolina Sch. of Med. **(185.4)**

166. CD8$^+$ T CELL HOMEOSTASIS AND MEMORY

Block Symposium

SUN. 12:30 PM—ROOM 31ABC

CHAIRS: *S. BEDOUI, G.J. MARTINEZ*

12:30 Microbiota-derived butyrate promotes cellular metabolism and memory potential of antigen-activated CD8$^+$ T cells. **S. Bedoui, K. Binger, A. Kallies, S.J. Turner, M. McConville, T. Gebhardt and A. Bachem**. Univ. of Melbourne, Australia. **(189.1)**

12:45 Microbial exposure expands a Ly6C$^+$ subpopulation of long lived naive CD8 T cells with a rapid effector function via type I intereferons. **M. Jergovic and J. Nikolich-Zugich**. Univ. of Arizona. **(189.2)**

1:00 PRMT5-mediated arginine methylation controls the strength of signaling via γc-family cytokines required for T cell maintenance. **M. Inoue, K. Okamoto and H. Takayanagi**. Univ. of Toyko, Japan. **(189.3)**

1:15 STAT1 restrains peripheral naive CD8$^+$ T cell responsiveness to homeostatic cytokines by regulating mTORC1 signaling. **Y-C. Kye, C-H. Yun and J-H. Cho**. Acad. of Immunology and Microbiology, Inst. for Basic Sci., South Korea and Seoul Natl. Univ., South Korea. **(189.4)**

1:30 NFAT1 and NFAT2 differentially regulate CTL differentiation upon acute viral infection. **T. Xu, A. Keller and G.J. Martinez**. Rosalind Franklin Univ. of Med. and Sci. **(189.5)**

1:45 Themis integrates T cell receptor and cytokine signals in CD8$^+$ T cells. **N.R.J. Gascoigne, J. Brzostek, X. Zhao, G. Fu, E.W. Chen and M. Mehta**. Natl. Univ. of Singapore, Singapore and Xiamen Univ., China. **(189.6)**

2:00 Identity of recirculating T cells in humans. **M. Buggert, S. Nguyen, S. Darko, A. Ransier, D. Douek, A. Bar-Or, N.K. Björkström, Y. Dori, M.G. Itkin and M.R. Betts**. Karolinska Inst., Sweden, Perelman Sch. of Med., Univ. of Pennsylvania, VRC, NIAID, NIH, Univ. of Pennsylvania, Karolinska Inst., Karolinska Univ. Hosp., Sweden and Children's Hosp. of Philadelphia, Penn Medicine, Hospital of the Univ. of Pennsylvania. **(189.7)**

2:15 STAT4 programs CD103$^-$ tissue-resident memory cells during infection. **T. Bergsbaken, H. Fung, N. Wilson and M. Teryek**. Rutgers New Jersey Med. Sch. **(189.8)**

167. CO-INHIBITORY / CO-STIMULATORY SIGNALS IN TUMOR THERAPY

Block Symposium

SUN. 12:30 PM—ROOM 29ABCD

CHAIRS: *T. CURIEL, Y. ZHU*

12:30 Humanized PD-1/PD-L1 mice facilitate the direct functional comparison of immune checkpoint inhibitors in vivo. **W.J. Barham, S.M. Harrington, X. Liu and H. Dong**. Mayo Clin. **(195.1)**

12:45 CD39$^+$CD8$^+$ T cells exhibit a distinct phenotype among tumor-infiltrating tumor-antigen-specific CD8$^+$ T cells. **Y. Lee, J. Park, S-H. Park and E-C. Shin**. Korea Advanced Inst. of Sci. and Technol., South Korea. **(195.2)**

1:00 Multidimensional single T cell analysis reveals altered T cell biology upon treatment of murine tumor with checkpoint blockade immunotherapy. **S. Rao, A. Kornberg, S. Lin, K. Gharib, L. Koganti, J.A. Garcia-Vilas Garcia, K. Masuda and A. Han**. Columbia Univ. Med. Ctr. **(195.3)**

1:15 Human CD96 correlates to NK cell exhaustion and predicts the prognosis of human hepatocellular carcinoma. **C. Sun, H. Sun, H. Wei, R. Sun and Z. Tian**. Univ. of Science and Technology of China, China. **(195.4)**

1:30 Surface and cytoplasmic tumor cell PD-L1 differentially mediate virulence in ovarian cancer and melanoma through mTOR activation. **H.G. Hambright, H.B. Gupta, A.S. Padron, R. Vadlamudi, Y. Chen, P.A. Osmulski and T.J. Curiel**. Univ. of Texas Hlth. Sci. Ctr., San Antonio. **(195.5)**

1:45 B cells produce IL-27 to upregulate PD-L1 expression and promote breast cancer development. **H. Yan, S. Viswanadhapalli, D. Chupp, M. Fernandez, S. Wu, J. Wang, J. Moroney, J. Taylor, J. Im, C. Rivera, Y. Luo, J. Liu, G. Sareddy, P. Casali, R. Vadlamudi and Z. Xu**. Univ. of Texas Hlth. Sci. Ctr. San Antonio. **(195.6)**

2:00 Precisely timed histone deacetylase inhibition creates a highly proliferative intratumoral CD8 T cell population and sensitizes tumors to checkpoint blockade. **T.R. McCaw, M. Liu, M. Li, D. Starenki, S. Cooper, R. Arend, A. Forero, D. Buchsbaum and T.D. Randall**. Univ. of Alabama at Birmingham and HudsonAlpha Inst. for Biotech. **(195.7)**

168. NATIONAL INSTITUTE ON AGING (NIA) SYMPOSIUM: IMMUNE METABOLISM, INFLAMMATION, AND AGING

NIH-Sponsored Session

SUN. 3:45 PM—ROOM 25ABC

CHAIRS: *R.A. FULDNER, C. WEYAND*

3:45 Metabolic fitness of T cells in aging and inflammation. **C. Weyand.** Stanford Univ.

4:15 Tissue resident macrophages drive adipose dysfunction during aging. **C. Camell.** Yale Univ.

4:45 Fasting mimicking diets, immunity, and cancer. **V. Longo.** Univ. of Southern California.

5:15 Immunomodulatory mechanisms in the tumor microenvironment. **A. Ringel.** Harvard Univ.

169. THE INTERNATIONAL CYTOKINE AND INTERFERON SOCIETY (ICIS) SYMPOSIUM: CYTOKINES IN IMMUNE-STROMAL CELL INTERACTIONS

Guest Society Symposium

SUN. 3:45 PM—ROOM 26AB

CHAIRS: *M. MCGEACHY, M. NAIR*

3:45 Regulation of immune cells in adipose tissue. **L.M. D'Cruz.** Univ. of Pittsburgh.

4:15 Novel immunoregulatory pathways in helminth infection through resistin-like molecules and endocannabinoids. **M. Nair.** Univ. of Pittsburgh.

4:45 Control of cytokine signaling by PTPN2 in rheumatoid arthritis. **N. Bottini**. Univ. of California, San Diego.

5:15 Th17 immunity at the oral barrier. **N. Moutsopoulus.** NIDCR, NIH.

170. MECHANISMS OF ATOPIC DISEASE

Block Symposium

SUN. 3:45 PM—ROOM 32AB

CHAIRS: *P. BOYAKA, M. CROFT*

3:45 An epigenetic link between the gut microbiome and immune responses in atopy. **A. Cait, M.R. Hughes, M. Bilenky, J. Cait, D. Pepin, M. Hirst, W.W. Mohn and K. McNagny**. Univ. of British Columbia, Canada. **(55.7)**

4:00 Oral tolerance to peanut allergy is mediated by CTLA-4-positive regulatory T cells. **J.W. Krempski, K. Iijima, T. Kobayshi and H. Kita**. Mayo Grad. Sch. and Mayo Clin. **(55.2)**

4:15 Gut oxidative responses by chronic exposure to pollutants enhance IgE production via PGE_2-dependent mechanism. **E. Kim, A. Bonnegarde-Bernard, S.O. Opiyo, B.M. Ahmer, E. Comet-Boyaka and P.N. Boyaka**. The Ohio State Univ. **(55.4)**

4:30 Identification of a novel mechanism of Th2 polarization in mouse CD4+ T cells through nuclear factor erythroid 2-like 2 (Nrf2) regulation. **R.C. Kennedy, S. Liu, A.E. Turley, R.A. Freeborn and C.E. Rockwell**. Michigan State Univ. **(55.3)**

4:45 The bone marrow-derived Gr-1^+CXCR2^+ cells are required for T cell infiltration into the skin challenge site to elicit contact hypersensitivity responses are inflammatory monocytes expressing FasL and perforin. **D. Kish and R.L. Fairchild**. Cleveland Clin. **(55.8)**

5:00 Suppression of allergic airway inflammation by MCPIP1 through suppression of IL-5-producing Th2 cells. **J. Liu, Q. Wang, H. Ning and R. Hou**. Saint Louis Univ. **(55.17)**

5:15 Dimethyl fumarate attenuates T helper type 2-mediated allergic airway inflammation by modulating dendritic cell function. **A.K. Jaiswal, M. Sandey, A. Suryawanshi, R.C. Cattley and A. Mishra**. Auburn Univ. **(55.16)**

5:30 C-X3-C chemokine receptor 1 regulates immunopathogenesis during fungal asthma. **M.S. Godwin, M.J. Jones, Z. Yu, S. Matalon and C. Steele**. Univ. of Alabama at Birmingham Sch. of Med. and Tulane Univ. Sch. of Med. **(55.15)**

171. HUMAN HOST DEFENSE

Block Symposium

SUN. 3:45 PM—ROOM 30AB

CHAIRS: *R. CASPI, R. MODLIN*

3:45 Functional impact of a cellular long non-coding RNA on CCR5 expression and HIV infection. **S. Kulkarni, A. Lied, V. Kulkarni, S. singh, M. Rucevic, M.P. Martin, F. Chawdhury, S. Le Gall, X. Yu and M. Carrington**. Texas Biomed. Res. Inst., Ragon Inst. of MGH, MIT and Harvard and NCI, NIH. **(120.3)**

4:00 Evaluation of T regulatory cells responses in acute and chronic phases of Chikungunya patients. **B.M. Gois, I.C. Guerra-Gomes, R.F. Peixoto, C.S.N. Dias, P.H.S. Palmeira, J.M.G. Araújo and T. Keesen**. Federal Univ. of Paraiba, Brazil, Univ. of São Paulo, Brazil and Federal Univ. of Rio Grande do Norte, Brazil. **(120.15)**

4:15 Clonal expansion within circulating plasmablast populations lends support for an infectious disease etiology of Kawasaki disease. **M. Hicar, J. Hoffman, H. Sojar and S. Baron**. State Univ. of New York, Buffalo. **(120.16)**

4:30 Endoplasmic reticulum stress regulates immunosuppressive function of myeloid derived suppressor cells in leprosy. **K. Kelly-Scumpia, R. Shirazi and R. Modlin**. Univ. of California, Los Angeles. **(120.25)**

4:45 Commensal microbiota as possible pathobiont in autoinflammatory disease. **J. Siak, A. St. Leger, K. Raychaudhuri, M. Mattapallil, I.J. Fuss, R. Goldbach-Mansky, W. Strober and R.R. Caspi**. NEI, NIH, Univ. of Pittsburgh Sch. of Med., NIH and NIAID, NIH. **(120.26)**

5:00 Release of transglutaminase 2 from respiratory syncytial virus-infected airway epithelial cells and its role in disease pathogenesis. **Y.M. Hosakote, K. Rayavara and A. Kurosky**. The Univ. of Texas Med. Br. **(120.27)**

172. NOVEL THERAPEUTIC APPROACHES IN LUPUS

Block Symposium

SUN. 3:45 PM—ROOM 29ABCD

CHAIRS: *V. RUSS, V. KUMAR*

3:45 Innovative drug discovery for autoimmune diseases aiming at BAFF signaling pathway. **K. Yoshimoto, K. Suzuki, N. Seki, K. Sugahara, K. Chiba and T. Takeuchi**. Keio Univ. Sch. of Med., Japan and Mitsubishi Tanabe Pharma Corp. **(132.1)**

4:00 MAP4K3/GLK-induced AhR-RORγt complex is a novel therapeutic target for GLK^{high}IL-17A^{high} subpopulation of SLE patients. **H-C. Chuang and T-H. Tan**. Natl. Hlth. Res. Inst. **(132.2)**

4:15 Response Gene to Complement -32 exerts proinflammatory and profibrotic effects in immune complex mediated glomerulonephritis. **V. Rus, A. Tatomir, V. Nguyen, A. Talpos-Caia, J. Papadimitriou, S. Atamas, I. Luzina, S-S.J. Sung, T. Badea and H. Rus**. Univ. of Maryland Sch. of Med., Univ. of Virginia Sch. of Med. and NEI, NIH. **(132.3)**

4:30 A rationally engineered DNase1-Fc fusion protein ameliorates autoimmune glomerulonephritis. **M. Mouchess, E. Suto, S. Chan, B. Dai, C. Tam, Y. Cao, M. Darwish, D. He, S. Haller, J. Eastham-Anderson, Y. Franke, C. Blanchette, W. Lee, C. Austin, R. Lazarus and T. Yi**. Genentech, Inc. **(132.4)**

4:45 Type II NKT cells directed immune regulatory mechanism(s) control spontaneous lupus nephritis in mice. **I. Maricic, R. Halder, I. Marrero, D.H. Kono and V. Kumar**. Univ. of California, San Diego and Scripps Res. Inst. **(132.5)**

5:00 Targeting T cell activation and lupus autoimmune phenotypes with a novel glucose transporter inhibitor. **W. Li, G. Qu, S-C. Choi, C. Cornaby, A. Titov, X. Teng, H. Wang and L. Morel**. Univ. of Florida and RenJi Hosp., Sch. of Med., Shanghai Jiaotong Univ., China. **(132.6)**

5:15 Validation of lanthionine synthetase C-like 2 (LANCL2) as a therapeutic target for systemic lupus erythematosus. **A. Leber, R. Hontecillas, V. Zoccoli-Rodriguez and J. Bassaganya-Riera**. Landos Biopharma. **(132.7)**

5:30 A nanoparticle-based approach targeting ion channels for the treatment of Lupus nephritis. **A.A. Chimote, M. Khodoun, H.J. Duncan, S.K. Kant and L. Conforti**. Univ. of Cincinnati and Cincinnati Children's Hosp. Med. Ctr. **(132.8)**

173. VIRUSES AND INNATE IMMUNE EFFECTORS

Block Symposium

SUN. 3:45 PM—ROOM 33ABC

CHAIRS: *V. TARAKANOVA, P. PENALOZA*

3:45 Plasmacytoid dendritic cells contribute to HIV diseases and viral persistence via IDO-dependent mechanisms. **G. Li, J. Ma, H. Yu, W. Bi, Y. Wu, L. Cheng and L. Su**. UNC-CH and Inst. of Biophysics of Chinese Acad. of Sci., China. **(75.1)**

4:00 Microglia secrete exosomes during persistent virus infection of the central nervous system that promote demyelinating disease. **J.K. Olson and N. Luong**. Univ. of Minnesota. **(75.2)**

4:15 A novel proviral function for IL-17 during gammaherpesvirus infection. **C.N. Jondle, K.E. Johnson, C.A. Aurubin, G. Xin, W. Cui, A. Huppler and V.L. Tarakanova**. Med. Col. of Wisconsin and Blood Res. Inst. **(75.3)**

4:30 IL-33 promotes antiviral immunity and protects against congenital Zika disease in mice. **Y. Liang, J. Escano and J. Sun**. Univ. of Texas Med. Br. **(75.4)**

4:45 IL-36γ regulates neutrophil infiltration and limits neuroinvasion in genital HSV-2 pathogenesis. **J.K. Gardner and M.M. Herbst-Kralovetz**. Univ. of Arizona. **(75.5)**

5:00 Cell type-specific sensing of murine cytomegalovirus through MyD88 and STING control virus infection. **S.J. Piersma, J. Poursine-Laurent, L. Yang, B.A. Parikh and W.M. Yokoyama**. Washington Univ. in St.Louis. **(75.6)**

5:15 The innate signaling adaptor MAVS regulates the quality of the antibody response to West Nile virus. **D. Schenten, M. O'Ketch, C. Larson and B. Hall**. Univ. of Arizona. **(75.7)**

5:30 IFN-I blockade improves the immunogenicity of viral vector vaccines. **N.M. Palacio, T. Dangui, Y. Wang and P.A. Penaloza-MacMaster**. Feinberg Sch. of Med., Northwestern Univ. and Northwestern Univ. **(75.8)**

174. AAI-STEINMAN AWARD FOR HUMAN IMMUNOLOGY RESEARCH PRESENTATION AND LECTURE

The AAI-Steinman Award for Human Immunology Research recognizes an individual who has made significant contributions to the understanding of immune processes underlying human disease pathogenesis, prevention, or therapy.

Awards Lecture

SUN. 4:30 PM—BALLROOM 20BCD

CHAIR: *J.L. FLYNN*

Recipient: **S.A. Rosenberg.** NCI, NIH

4:30 Introduction and Award Presentation. **J.L. Flynn.** Univ. of Pittsburgh Sch. of Med., AAI President.

4:35 Lymphocytes as a drug for the treatment of human cancer. **S.A. Rosenberg.** NCI, NIH.

175. DISTINGUISHED LECTURE GWENDALYN J. RANDOLPH

Distinguished Lecture

SUN. 6:00 PM—BALLROOM 20BCD

CHAIR: *D. MASOPUST*

6:00 Clearance of molecules and cells from sites of inflammation. **G.J. Randolph**. Wash. Univ., St. Louis.

176. IMMUNOLOGY 2019™ GALA

Social Event

Generously Sponsored by BioLegend

SUN. 7:00 PM—USS MIDWAY MUSEUM

At this iconic San Diego destination, you won't want to miss the opportunity to experience a unique symbol of American freedom. Explore this history-making aircraft carrier while learning all about naval history!

Meet up with friends, network with colleagues—and dance! San Diego themed appetizers and dinner stations will be featured along with a sweets station for dessert.

The Gala is open to all IMMUNOLOGY 2019™ attendees (21 years or older) and ticketed guests. No children will be permitted. Don't forget the must haves—your meeting badge (or guest ticket) and drink tickets (attached to your meeting badge)!

Come as you are directly from the San Diego Convention Center. Shuttle service will be provided between the Convention Center and the Midway. Shuttles start at 6:30 PM from the Convention Center (there will be signs directing you to the pick up location) and are staggered to accommodate security checks prior to embarking onto the Midway.

SUNDAY POSTER SESSIONS

Posters on Display: 9:30 am – 4:30 pm
Author Presentation Time: 2:30 pm – 3:45 pm

177. ANTIGEN PROCESSING AND PRESENTATION

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P320 **177.1** iNKT cell stimulation by glycolipid ligands modified from α-galactosylceramide results in differential interleukin-2 secretion profiles. **C.E. Schafer, Á. Santibáñez, M. Gutiérrez-González, J. Toro, K. Marcelain, A.R. Howell, S.A. Porcelli and L.J. Carreño**. Facultad de Medicina, Universidad de Chile, Chile, Univ. of Connecticut and Albert Einstein Col. of Med.

P303 **177.2** Biodegradable nanoparticles containing antigen and vitamin D3 efficiently induce antigen-specific immune suppression. **C-K. Lee, S-U. Jeong, H-H. Jung, S-H. Kim and K. Kim**. Chungbuk Natl. Univ., South Korea and Sahmyook Univ., South Korea.

P304 **177.3** Induction of antigen-specific immune suppression using biodegradable nanoparticles containing antigen and dexamethasone. **S-H. Kim, J-H. Moon, S-U. Jeong and C-K. Lee**. Chungbuk Natl. Univ., South Korea.

P315 **177.4** Viperin is not a big gear of immune cell's abilities in mouse bone marrow. **W. Choi, J. Eom, H.Y. Na, S.H. Ryu, M. Sohn, H. In, H.S. Shin, J.S. Park, J-Y. Seo and C.G. Park**. Yonsei Univ. Col. of Med., South Korea.

P306 **177.5** Cell surface MHC-I molecules in dendritic cells undergo fast recycling but do not replenish the Rab11+Arf6+ juxtanuclear compartment to support cross-presentation. **Pe.M. Van Endert, S. Montealegre, A. Abramova and A-F. de Kanter**. Inst. Necker Enfants Malades, France.

P309 **177.6** Polymorphism in chicken MHC-Y class I molecules that bind lipid ligands. **R. Goto, G. Gugiu, J. Zhang, B. Stadtmueller, P.J. Bjorkman and M.M. Miller**. Beckman Res. Inst., City of Hope, Univ. of Illinois, Urbana-Champaign and California Inst. of Technol.

P307 **177.7** Measuring the molecular mechanisms of tumor antigen cross-presentation in dendritic cells and macrophages. **E.M. Muntjewerff, F. Bianchi, S. Maassen and G. van den Bogaart**. Radboud Inst. for Molecular Life Sci., The Netherlands and Univ. of Groningen, The Netherlands.

P311 **177.8** Single-cell RNA sequencing reveals different subsets of macrophage and dendritic cells in human skin. **D. Xue, T. Tabib, C. Morse and R. Lafyatis**. Sch. of Pittsburgh.

P321 **177.9** Comprehensive immunopeptidome analysis of I-A^b-bound peptides from thymus and splenic B cells in C57BL/6 mice. **P.P. Nanaware and L.J. Stern**. Univ. of Massachusetts Med. Sch.

P313 **177.10** Measurement of MHC-peptide interaction through cell-surface expression and stability assay improves screening of potential $CD4^+$ T-cell epitopes. **H. Miyadera, H. Nagai, T. Yoshiyama, K. Tokunaga and Y. Hoshino**. Univ. of Tsukuba, Japan, Tokyo Natl. Hosp., Japan, Fukujuji Hosp., Japan, Univ. of Tokyo, Japan and Natl. Inst. of Infectious Dis., Japan.

P314 **177.11** MHC class I and II gene-dependent hypersensitivity to nevirapine and efavirenz in Indian HIV-1 patients. **B.A. Dalal, A. Shankarkumar and A. Pazare**. Natl. Inst. of Immunohaematology, India and King Edward Mem. Hosp. and Seth Gordhandas Sunderdas Med. Col., India.

P316 **177.12** Small GTPase Rab8 plays a critical role in B cell antigen presentation. **P.K. Mattila, M. Vainio, S. Hernandez Perez, V. Sustar and J. Rajala**. Univ. of Turku, Finland.

P317 **177.13** Identification of novel subsets among dendritic cells and macrophages generated from the culture of bone marrow. **H. In, H.Y. Na, S.H. Ryu, M. Sohn, W. Choi, H.S. Shin, J.S. Park and C.G. Park**. Yonsei Univ. Col. of Med., South Korea.

P319 **177.14** Investigating contributions of the accessory molecule HLA-DO to development of autoimmune diseases. **R.A. Welsh, N. Song, C. Foss, T. Boronina, R. Cole and S. Sadegh-Nasseri**. Johns Hopkins Univ. Sch. of Med.

P323 **177.15** Peptide editing and MHC binding mechanisms of tapasin and TAP binding protein related. **E.J. Kim, K. Natarajan, L.F. Boyd, J. Jiang, M.G. Mage and D.H. Margulies**. LISB, NIAID, NIH.

P326 **177.16** CpG-A and CpG-B oligonucleotides differentially regulate MR1-mediated microbial Ag presentation. **J. Liu, R. Brutkiewicz, S. Liu and J. Wan**. Indiana Univ. Sch. of Med.

P328 **177.17** Self-adjuvanting properties of peptide nanofiber vaccines are dependent on autophagy. **J.S. Rudra, A. Khan, J.J. Endsley, A. Zloza and C. Jagannath**. Washington Univ. in St. Louis, Houston Methodist Res. Inst., Univ. of Texas Med. Br. and Rutgers Cancer Inst. of New Jersey.

P331 **177.18** Characterizing the MHC-II immunopeptidome of HIV using a cell-free antigen processing system and peptide: MHC-specific antibodies. **S. Sengupta, J. Douglass, T. Boronina, R. Wu, M. Moskovljevic, M. Reed, J. Yu, Y. Tabdili, R. Siliciano and S. Sadegh-Nasseri**. Johns Hopkins Univ. Sch. of Med.

P300 **177.19** Identification of specific T lymphocytes against to an IFNg inducible lysosomal thiol reductase-dependent, class II MHC-associated epitope in GILT $^{-/-}$ mice. **X. He, H. Dai, E. Reyes-Vargas and P.E. Jensen**. Univ. of Utah Sch. of Med.

P301 **177.20** MHC class II conformers drive differential B cell activation. **J.R. Drake**. Albany Med. Col.

P302 **177.21** Molecular mechanisms underlying the glycation induced-impairment of antigen processing and presentation in diabetic (T2DM) patients and *ob*/*ob* mice. **L. Santambrogio, C. Clement, M.P. Negroni, P. Nanaware, K. Morozova and L. Stern**. Albert Einstein Col. of Med. and Univ. of Massachusetts Med. Sch.

P305 **177.22** Splenic CD169+ marginal zone macrophages directly cross-prime CD8+ T cells in vivo using a vacuolar processing pathway. **P.M. Van Endert, F. Mauvais, Y. Hamel, J. Diana and M. Garfa**. Institut Necker-Enfants Malades, France and INSERM UMS24, France.

P308 **177.23** *Wdfy4*-deficiency reveals a critical role for cross-presentation in anti-viral and anti-tumor responses. **D.J. Theisen, J.T. Davidson, C.G. Briseño, M. Gargaro, E.J. Lauron, Q. Wang, P. Desai, V. Durai, P. Bagadia, J.R. Brickner, W.L. Beatty, H.W. Virgin, W.E. Gillanders, N. Mossamaparast, M.S. Diamond, L.D. Sibley, W. Yokoyama, R.D. Schreiber, T.L. Murphy and K.M. Murphy**. Washington Univ. in St. Louis, Univ. of Perugia, Vir Biotechnology and HHMI.

P310 **177.24** The human NK cell receptor KIR2DS4 detects a conserved bacterial epitope presented by HLA-C. **E.O. Long and MJ.W. Sim**. Natl. Inst. of Allergy and Infectious Dis.

P312 **177.25** Investigating a role for HLA-DO in the development of CD4 memory cells. **N. Song, R.A. Welsh and S. Sadegh-Nasseri**. Johns Hopkins Univ.

P318 **177.26** Antigen processing and autophagy function in adjuvant-treated dendritic cell. **K. Hashimoto, T. Ootomo, A. Hasegawa, R. Kotera, D. Kobayashi and T. Nakayama**. Chiba Inst. of Tech., Japan, Yamaguchi Univ., Japan, Chiba Inst. of Tech. Grad. Sch. of Engin., Japan and Chiba Univ. Grad. Sch. of Med., Japan.

P322 **177.27** Parkinson's disease-related proteins PINK1 and Parkin are major regulators of the immune system. **D. Matheoud, T. Cannon, A. Voisin, A-M. Penttinen, L. Ramet, A. Fahmy, C. Ducrot, A. Laplante, M-J. Bourque, L. Zhu, A. Le Campion, H. McBride, S. Gruenheid, L-E. Trudeau and M. Desjardins**. Centre de Recherche du Centre Hosp.ier de l'Université de Montréal, Canada, Canada, McGill Univ., Canada and Université de Montréal, Canada.

P324 **177.28** The non-classical MHC-II molecule H2-O (DO) is required for efficient recovery from influenza A infection. **L. Stern and M.M. Jurewicz**. Univ. of Massachusetts Med. Sch.

P325 **177.29** Epitope mapping of *Mycobacterium tuberculosis* proteins using a non-human primate model of infection. **N.L. Grant, A.J. Balgeman, A.L. Ellis, S.L. O'Connor, C.A. Scanga and J.L. Flynn**. Univ. of Pittsburgh Grad. Sch. of Publ. Hlth., Univ. of Wisconsin-Madison and Univ. of Pittsburgh Sch. of Med.

P327 **177.30** An engineered vaccine encompassing an MHC class I antigen presenting molecule induces self-reacting CTL in a setting of profound tolerance. **L.R. Pease, C.A. Parks, D. Kranz and M. Barry**. Mayo Clin., Columbia Univ. Med. Ctr. and Univ. of Illinois, Urbana-Champaign.

P329 **177.31** Getting in the groove: editing of MHC-I antigen repertoires by molecular chaperones is governed by a network of protein dynamics. **N. Sgourakis, A. McShan, K. Natarajan, J. Jiang, J. Park, S. Overall, J.S. Toor, V. Kumirov, D. Flores-Solis, M. Badstubner, E.L. Kovrigin, C.R. Bagshaw, J. Pallesen, E. Procko and D.H. Margulies**. Univ. of California, Santa Cruz, NAIAD, NIH, Univ. of Illinois, Urbana-Champaign, Marquette Univ. and Indiana Univ.

P330 **177.32** High GILT expression and an active and intact MHC class II antigen presentation pathway are associated with improved survival in melanoma. **K. Hastings, L. Meador, H. Menon, Y-K. Lu, J. Brill, H. Cui, D.J. Roe, D.J. DiCaudo and K.H. Buetow**. Univ. of Arizona, Arizona State Univ. and Mayo Clin.

P332 **177.33** *Batf3*-dependent dendritic cells are required to present cell-associated antigen to CD4 T cells. **S.T. Ferris, V. Durai, R. Wu, T.L. Murphy and K.M. Murphy**. Washington Univ. Sch. of Med. in St. Louis and Washington Univ. in St. Louis.

178. BASIC AUTOIMMUNITY: ROLE OF MICROBES

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P334 **178.1** VSV-primed CD8+ T cells suppress autoreactive germinal centers. **H.K. Kole, B. Scott, S. Crampton, G. Sule, J. Deane and S. Bolland**. NIAID, NIH.

P336 **178.2** A single infection with a malaria parasite protects mice from lethal autoimmune glomerulonephritis. **L. Amo, H.K. Kole, B. Scott, I.N. Moore, C-F. Qi, J. Wu, H. Wang and S. Bolland**. NIAID, NIH and Comparative Med. Branch, Infectious Dis. Pathogenesis Section, NIAID, NIH.

P332 **178.3** Interactions between the host genome and the gut microbiome determine susceptibility to CNS autoimmune disease. **T.L. Montgomery, Q. Fang, A. Künster, H. Busch, C. Teuscher and D. Krementsov**. Univ. of Vermont and Univ. of Lübeck, Germany.

P335 **178.4** Periodontal disease: from infection to autoimmunity. **H.S. Garzon and L. Suarez**. Antonio Narino Univ., Colombia and Natl. Univ. of Colombia, Colombia.

P337 **178.5** Heightened levels of antimicrobial response factors in patients with systemic lupus erythematosus. **P. Ayyappan, R.Z. Harms, J.H. Buckner and N.E. Sarvetnick**. Univ. of Nebraska Med. Ctr. and Benaroya Res. Inst.

P338 **178.6** PLD3 and PLD4 are single-stranded acid exonucleases that regulate endosomal nucleic-acid sensing. **D. Nemazee, A.L. Gavin and D. Huang**. Scripps Res. Inst.

P339 **178.7** Aberrant MDA5 signaling and IFN-β synthesis elicit protection from coxsackievirus-accelerated type 1 diabetes. **S.I. Blum, A.R. Burg, Y-G. Chen and H.M. Tse**. Univ. of Alabama, Birmingham and Med. Col. of Wisconsin.

P340 **178.8** Loss of gut barrier integrity triggers autoimmune diabetes through microbiota-induced activation of islet-reactive T cells. **M. Falcone, C. Sorini, I. Cosorich, M. Lo Conte, F. Facciotti, F. Sanvito, R. Ferrarese and F. Canducci**. Ospedale San Raffaele, Karolinska Instit., Sweden, IEO and Univ. of Insubria.

P341 **178.9** Synergetic effect of an autoantigen CII and a mycoplasma superantigen on the onset and development of autoimmune arthritis in mice. **H-H. Mu, S. Jiang, X. Wang, C. Meaney and J. Wang**. Univ. of Utah Sch. of Med.

P342 **178.10** Pregnancy and lactation interfere with the response of autoimmunity to modulation of gut microbiota. **Q. Mu, X. Cabana-Puig, B. Swartwout, L. Abdelhamid, T.E. Cecere, H. Wang, C.M. Reilly and X.M. Luo**. Virginia Tech and Col. of Animal Sci., Zhejiang Univ., China.

P343 **178.11** Induction of regulatory B cells by bacterial DNA in the gut microbiota at early age is beneficial in lupus-prone mice. **Q. Mu, B. Swartwout, X. Cabana-Puig, J. Grieco, T.E. Cecere and X.M. Luo**. Virginia Tech.

P344 **178.12** The gut microbiota from lupus-prone B6.*Sle1.Sle2.Sle3* (TC) induces inflammation via a mechanism other than bacterial translocation. **J.M. Brown, S-C. Choi and L. Morel**. Univ. of Florida.

P345 **178.13** Linking diet, gut microbiota and autoimmunity: a phytoestrogen diet alters the gut microbiota and influences experimental autoimmune encephalomyelitis (EAE). **S.N. Freedman, S. Shahi, K. Zarei, A. Gupta, N. Guseva, A. Bossler, K.L. Legge and A.K. Mangalam**. Carver Col. of Med. Univ. of Iowa and Dept. of Pathology, Univ. of Iowa.

P346 **178.14** IL-17A control CNS inflammatory disease by regulating Treg cells through modulation of gut microbiota in HLA class-II transgenic mice model of multiple sclerosis (MS). **S.K. Shahi, S.N. Freedman, A.C. Murra, K. Zarei, N.V. Guseva, K.G. Corley, A. Bossler, N.J. Karandikar and A.K. Mangalam**. Carver Col. of Med., Univ. of Iowa.

P347 **178.15** Microbial exposure and autoimmunity in the etiopathogenesis of Sarcoidosis. **B. Allushi, H. Bagavant, J. Papinska, C.G. Montgomery and U.S. Deshmukh**. Oklahoma Med. Res. Fndn.

P348 **178.16** Dysbiosis reprograms the differentiation of thymus-derived regulatory T cells. **K. Wang, B-H. Yang and W. Fu**. Univ. of California, San Diego.

P349 **178.17** B cells, bugs, bowels, and bones: Bruton's tyrosine kinase deficiency alters gut B lymphocyte populations and IgA recognition of commensal bacteria in autoimmune arthritis. **R. Bonami, C. Thurman, L. Nyhoff, B. Barron and P.L. Kendall**. Vanderbilt Univ. Med. Ctr.

P350 **178.18** Androgens may influence lupus development via an effect on the composition and metabolic activities of intestinal microbiota in BWF1 mice. **J.W. Harder, J. Ma, A. Chhabra, P. Alard, X. Zhang, F. Yuan, R. Ferrill, Y. Hua and M.M. Kosiewicz**. Univ. of Louisville.

179. BASIC AUTOIMMUNITY: B CELLS

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P351 **179.1** Systemic activation of B and CD4 but not CD8 cells drives early disease in lupus prone mice, while macrophages, CD4 and CD8 cells infiltrate the kidney with the exclusion of B cells. **J. Wu, H. Wang, L. Amo, B. Scott, H.K. Kole and S. Bolland**. NIAID, NIH.

P352 **179.2** Discovery of autoantibodies associated with psoriatic arthritis. **T. Wu, Y. Yuan and S.K. Tyring**. Univ. of Houston and Ctr. for Clin. Studies.

P353 **179.3** The glycosylation and glycoprotein signature of immunoglobulins in patients with autoimmune liver diseases. **W. Zhang, X. Zhou, J. Muchena, Z. Shuai, T.Y. Sun, G-X. Yang, C.H. Liu, S. Dhaliwal, P. Invernizzi, C. Bowlus, P.S.C. Leung, C. Lebrilla and E. Gershwin**. Univ. of California, Davis, First Affiliated Hosp. of Anhui Med. Univ., China, Beijing 302 Hosp., China and Univ. of Milan-Bicocca, Italy.

P354 **179.4** Mechanisms for secretion of antibodies with "anti-self" reactivity by the human obese adipose tissue. **D. Frasca, A. Diaz, M. Romero and B. Blomberg**. Univ. of Miami.

P355 **179.5** Type I IFN and IL-4R define B cell checkpoint defects in systemic lupus erythematosus. **J.D. Mountz, S. Liu, Q. Wu, P. Yang, W.A. Essman, O.A. Ojo, B. Luo, M. Gao, J.Y. Chen, I. Sanz, W.W. Chatham and H-C. Hsu**. Univ. of Alabama at Birmingham and Emory Univ.

P356 **179.6** Characterization of $CD11c^+$ B-cells from human blood. **S.F. Calbo, M. Demeules, C. Derambure, G. Riou, M. Vaillant, O. Boyer, P. Joly and M-L. Golinski**. Inserm U1234, France.

P357 **179.7** Salivary IgA as biomarker of disease activity in systemic lupus erythematosus. **S. Romero, E.S. Sánchez-Salguero, J.J. Torres-Ruiz, C. Núñez-Álvarez, L. Santos-Argumedo, R. Chacón-Salinas, D. Gómez-Martín and J.L. Maravillas-Montero**. UNAM, Mexico, CINVESTAV-IPN, Mexico, INCMNSZ, Mexico and ENCB, IPN, Mexico.

P358 **179.8** Analysis of age-associated B cells in systemic lupus erythematosus patients. **V.A. Sosa HernÁndez, I.C. Navarro-Hernandez, J.J. Torres-Ruiz, L.P. Whitall, D. Gómez-Martín, L. Santos-Argumedo and J.L. Maravillas-Montero**. CINVESTAV-IPN, Mexico, INCMNSZ, Mexico and UNAM, Mexico.

P359 **179.9** Age-associated B cells in early drug-naive rheumatoid arthritis patients. **G.V. Vidal-Pedrola, J. Cameron, A. Pratt, A. Mellor, D. Scheel-Toellner, J. Isaacs and A. Anderson**. Newcastle Univ., United Kingdom and Univ. of Birmingham, United Kingdom.

P360 **179.10** Novel role of T cells to induce development of proliferative plasmablasts in systemic lupus erythematous. **O.A. Ojo, S. Liu, Q. Wu, P.A. Yang, D.K. Crossman, W. Chatham, H-C. Hsu and J.D. Mountz**. Univ. of Alabama, Birmingham and Univ. of Alabama Sch. of Med.

P361 **179.11** Abnormal B cell development in an SLE patient suffering from immunothrombocytopenia. **Y.S. Choi and J. Kim**. Seoul Natl. Univ. Col. of Med., South Korea.

P362 **179.12** Divergent roles for TLR7 and TLR9 in modulating the NFκB pathway in B cells. **K.K. Nundel, S. Moses, J.H. Shim and A. Marshak-Rothstein**. Univ. of Massachusetts Med. Sch.

P363 **179.13** Defining the mechanisms of B-cell induced autoimmune disease. **C.A. Bazile, J.A. Wright, J.C. Boucher, E. Kleiman, E.S. Clark and W.N. Khan**. Univ. of Miami.

P364 **179.14** The contribution of anergic B cells to protective immunity. **A. Agazio, K. Shotts-Schroeder, M.L. Santiago, R.A. Pelanda and R.M. Torres**. Univ. of Colorado Anschutz Med. Campus.

P365 **179.15** Ikaros regulates chromatin landscape in mature B cells, and is critical for B cell tolerance. **P.D. Rodriguez, W. Howell, E. Amiel, S. Frietze and H. Schjerven**. Univ. of Vermont and Univ. of California, San Francisco.

P366 **179.16** Ikaros mutations can bypass the requirement for second co-stimulatory signal and lead to break of B-cell tolerance. **H. Schjerven, P.D. Rodriguez, W. Howell, J. Vestbostad, S. Frietze and H. Schjerven**. Univ. of California, San Francisco, Univ. of Vermont and KG Jebsen Centre for B Cell Malignancies, Oslo Univ. Hosp., Norway.

180. BASIC AUTOIMMUNITY: ANTIGEN AND INNATE IMMUNITY

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P367 **180.1** Increased immune surveillance of neuron-restricted antigen during demyelination leads to axon loss perpetrated by CD8+ T cells. **B.D.S. Clarkson, E.M. Grund, K. Mirchia, M.M. Standiford and C.L. Howe**. Mayo Clin. and Mayo Grad. Sch.

P369 **180.2** Peptides of endogenous retrovirus Gag gene variants are not agonistic ligands for autoreactive T cells in non-obese diabetic mice. **Y.D. Dai, R. Bashratyan, K. Marquardt, W-Y. Hu, L. Evans and K. Haskins**. Biomedical Res. Inst. of Southern California, Scripps Res. Inst., Biosettia, Inc, NIAID and Univ. of Colorado Sch. of Med.

P370 **180.3** Small numbers of T cells specific to different myelin-antigens cooperate to induce autoimmunity in a murine model of multiple sclerosis. **R.R. Robinson, E.M. Rojano and T. Forsthuber**. Univ. of Texas, San Antonio.

P371 **180.4** Beta cells activate islet resident macrophages in a culture bioassay. **M.M-U. Zaman and P. Zakharov**. Washington Univ. Sch. of Med.

P372 **180.5** Pancreatic beta cells are constantly interacting with the immune system. **X. Wan, B. Zinselmeyer, P. Zakharov, A.N. Vomund, C.F. Lichti and E.R. Unanue**. Washington Univ. Sch. of Med., St. Louis.

P374 **180.6** Targeted over-expression of S100B in the retina of transgenic mice induced exacerbated experimental autoimmune uveitis. **C-R. Yu, O. Ogbonna, H. Lee, J.K. Choi, Y. Jittayasothorn, L. Li and C.E. Egwuagu**. NEI, NIH.

P403 **180.7** Antigen dose affects disease kinetics in a murine model of demyelinating disease. **C.A.M. Gavile, A. Alexander, F. Adler and B.D. Evavold**. Univ. of Utah.

P373 **180.8** Matrix metalloproteinase-28 alters cellular energetics in macrophages, influencing polarization and activation. **D. Tokmina-Roszyk, L.C. Onwuha-Ekpete, M. Refai, M. Tokmina-Lukaszewska, B. Bothner and G.B. Fields**. Florida Atlantic Univ. and Montana State Univ.

P376 **180.9** Blood monocyte subsets are dysregulated and respond with high IL-6 secretion in patients with systemic sclerosis. **K. Friedrich, C. Bearwald, M. Pierer and M. Rossol**. Leipzig Univ., Germany.

P377 **180.10** Multiple Myd88-dependent Toll-like receptor signaling pathways mediate inflammation in a mouse model of primary Sjögren's syndrome. **J. Kiripolsky, E.M. Kasperek, G. Yu and J.M. Kramer**. State Univ. of New York, Buffalo.

P378 **180.11** Natural killer cell re-modeling of the extra-cellular matrix by the degradation of hyaluronan: potential role in type 1 diabetes. **B.E. Fuchs, V. Wall, I. Kang, G. Workman, S. Evanko, T. Wight and S.A. Long**. Benaroya Res. Inst.

P379 **180.12** The role of CB_1 in experimental autoimmune encephalomyelitis. **J.M. Nichols and B. Kaplan**. Mississippi State Univ.

P400 **180.13** MIF and MIF2 have distinct but synergistic roles in CIA pathogenesis. **E.H. Doherty, P.V. Tilstam and R. Bucala**. Yale Univ. Sch. of Med.

P401 **180.14** Bromodomain inhibition instructs macrophages to promote beta cell proliferation and suppress autoimmune diabetes. **M. Yang, K. Wang and W. Fu**. Univ. of California, San Diego.

P402 **180.15** STING-mediated chronic activation of ER stress through disrupting calcium homeostasis primes T cells for cell death. **J. Wu and N. Yan**. Univ. of Texas Southwestern Med. Ctr.

P404 **180.16** Pulmonary involvement in a mouse model of Sjögren's syndrome induced by activation of the STING pathway. **J.A. Papinska, G. Gmyrek, R.S. Srinivasan, U. Deshmukh and H. Bagavant**. Oklahoma Med. Res. Fndn.

P405 **180.17** The metabolic modulator metformin affects the activation and survival of murine dendritic cell subsets. **S. Gallucci, M. Chakhtoura, M.H. Lee and C.C. Qiu**. Lewis Katz Sch. of Med., Temple Univ.

P406 **180.18** Regulation of plasmacytoid dendritic cells function via ER stress pathway. **V. chaudhary and F.J. Barrat**. Hosp. for Special Surgery Autoimmunity and Inflammation Res. Program.

P368 **180.19** Antigen-presenting cells from naive mice constitutively present the T cell epitope of SERCA2a and induce inflammatory cytokine production in antigen-specific T cells. **J. Reddy, R. Arumugam, B. Yalaka, C. Massilamany, S. Ali, J-J. Riethoven and X. Sun**. Univ. of Nebraska, Lincoln.

P375 **180.20** Molecular targets of inflammation in pancreatic endocrine cells in type 1 diabetes. **C. Mora, E. Sala, N.A. Saavedra-Ávila, U. Sengupta, C. Vived, J. Verdaguer, T. Stratmann and J. Lahti**. Univ. of Lleida, Spain and St. Jude Children's Res. Hosp.

181. CYTOKINE AND CHEMOKINE CONTROL OF IMMUNITY

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P412 **181.1** Type II cytokines in the thymic microenvironment influence T cell negative selection in type one diabetes. **A.N. Cattin-Roy, T.K. Ukah and H. Zaghouani**. Univ. of Missouri.

P417 **181.2** Defining the phenotype and function of granzyme A expressing T-helper cells. **T.A. Hayes and M.H. Kaplan**. Indiana Univ. Sch. of Med.

P416 **181.3** Expression of GM-CSF is regulated by transcription factor Fli-1. **X. Zhang, M. Lennard Richard, X. Wang, B. Henry, P. Li, H. Fan and G.S. Gilkeson**. Med. Univ. of South Carolina.

P420 **181.4** IL-6 overexpression triggers inflammation through its only relevant receptor IL-6R. **I. Mufazalov, M. Brandfald, C. Schelmbauer, D. Andruszewski, Y. Tang, J. Masri, S. Karbach, C. Eich, T. Wunderlich, T. Korn, J. Bluestone and A. Waisman**. Johannes Gutenberg Univ. of Mainz, Germany, Inst. for Genetics, Germany, Tech. Univ. of Munich, Germany and Univ. of California, San Francisco.

P413 **181.5** A directly GP130-targeting small molecule ameliorates collagen-induced arthrites by inhibiting IL-6/GP130 signaling and Th17 differentiation. **H.J. Kim, Y-H. Park and T-H. Heo**. Catholic Univ. of Korea, South Korea.

P422 **181.6** Expression and function of IL-1 receptor type 2 regulating human Th17 responses. **W-W. Lee, D.H. Kim and S. Cho**. Seoul Natl. Univ. Col. of Med., South Korea.

P428 **181.7** Nrf2 selectively regulates IL-22 and IL-17A production in Th17 cells. **X. Lin, S. Gaudino, J. Kolls and P. Kumar**. Stony Brook Univ. and Tulane Univ. Sch. of Med.

P409 **181.8** The role of Th17 lymphocytes in drug-resistant epilepsy. **O. Ouédraogo, H. Jamann, A. Daigneault, M.L. Clenet, B. Lahav, A. Bérubé, P. Cossette, M. Keezer, D.K. Nguyen and C. Larochelle**. Univ. of Montreal, Canada.

P411 **181.9** Complement activation causes oncogene expression in Gaucher disease. **M.K. Pandey, A.F. Magnusen, M.A. McKay, T.C. Nyamajenjere, B.A. DiPasquale, D.N. Magnusen, R. Rani, D. Witte, G.A. Grabowski and J. Köhl**. Cincinnati Children's Hosp. Med. Ctr.

P425 **181.10** Defining the role of interferon signaling in mouse models of Down syndrome. **K. Tuttle, K.A. Waugh, R. Minter, K.D. Sullivan and J.M. Espinosa**. Linda Crnic Inst. for Down Syndrome.

P430 **181.11** Intestinal interleukin (IL)-22RA1 signaling regulates the reciprocal control of IL-22 and onset of high fat diet-induced metabolic disorders. **S. Gaudino, H. Huang, M. Jean-Pierre, M. Beaupre, X. Lin and P. Kumar**. Stony Brook Univ.

P421 **181.12** Involvement of CCR5 in bone resorption associated to apical periodontitis. **A. De Rossi, S.Y.F. Alves, P. Nelson-Filho, R.A.B. Silva and L.A.B. Silva**. Univ. of São Paulo, Brazil.

P418 **181.13** Clinicopathological and prognostic significance of CCR5/CCL5 axis in hepatocellular carcinoma. **S.K. Singh, M.K. Mishra, J.W. Lillard and R. Singh**. Morehouse Sch. of Med. and Alabama State Univ.

P426 **181.14** Weighted gene correlation network analysis of ovarian cancer driven by CXCL13-CXCR5 interactions. **K. Carey, T.L. Griffen, C.D. Young, C.D. Dill and J.W. Lillard**. Morehouse Sch. of Med.

P429 **181.15** IL-33 is a cell-intrinsic regulator of early developing B cell fitness. **M.T. Stier, R. Mitra, K. Goleniewska, J. Zhang, C.M. Eischen and R.S. Peebles, Jr**. Vanderbilt Univ. Sch. of Med., Thomas Jefferson Univ. and Vanderbilt Univ. Med. Ctr.

P432 **181.16** Human bone marrow plasma cell survival is independent of APRIL. **D.C. Nguyen, C. Saney, I. Sanz and F.E-H. Lee**. Emory Univ.

P415 **181.17** Multivariate transcriptome analysis of CXCR5-CXCL13 signaling in unmutated and mutated CLL. **T.L. Griffen, C. Young, C.D. Dill, K. Carey, O. Adebayo, S. Nunez and J.W. Lillard**. Morehouse Sch. of Med.

P407 **181.18** TNF-α induces a pro-inflammatory phenotypic shift in monocytes through ACSL1: relevance to metabolic inflammation. **F. Alrashed, Z. Ahmad, M.A. Iskandar, J. Tuomilehto and R. Ahmad**. Dasman Diabetes Inst., Royal Col. of Surgeons in Ireland and Danube Univ., Krems, Austria.

P423 **181.19** IL-22 reduces the mortality of type 2 diabetes mellitus mice infected with *Mycobacterium tuberculosis*. **D. Tripathi, R.K. Radhakrishnan, R. Sivangala Thandi, P. Paidipally, K.P. Devalraju, V.S.K. Neela, A.R. Tvinnereim, V.L. Valluri and R. Vankayalapati**. Univ. of Texas Hlth. Sci. Ctr., Tyler and Bhagwan Mahavir Med. Res. Centre, India.

P408 **181.20** RhoA regulates Th17 cells and hepatic fibrosis induced by *Schistosoma japonicum* infection. **J-Q. Yang, Y. Yang, W. Zhou, C. Mei, P. Dong, S. Mo, Y. Zheng and F. Guo**. Jiangsu Inst. of Parasitic Dis., China and Cincinnati Children's Hosp. Med. Ctr.

P427 **181.21** IL-17D promotes anti-bacterial immunity in group A Streptococcus infection. **A. Washington, A. Valderrama, V. Nizet, N. Varki and J.D. Bui**. Univ. of California, San Diego.

P419 **181.22** Transcriptomic analysis of human IL-7 receptor alpha ^{low} and ^{high} effector memory CD8$^+$ T cells reveals an age-associated signature linked to influenza vaccine response in older adults. **H-J. Park, M.S. Shin, M. Kim, J. Bilsborrow, S. Mohanty, R.R. Montgomery, A. Shaw, S. Yoo and I. Kang**. Yale Univ. Sch. of Med. and Cedars-Sinai Med. Ctr.

P424 **181.23** IL-27-dependent STAT1 activation is enhanced in CD4 T cells from HIV infected patients. **J. Cheng, J. Kumar, P. Kumar and M. Catalfamo**. Georgetown Univ. Sch. of Med.

P431 **181.24** IL-2 signals program the fate of exhausted CD8 T cells. **V. Kalia, H. Xiao, Y. Yuzefpolskiy and S. Sarkar**. Univ. of Washington and Seattle Children's Res. Inst.

P410 **181.25** IL-21 produced by CD4$^+$ T cells drives differentiation of CD8$^+$ T cells during polyomavirus encephalitis. **H. Ren, T. Mockus, F. Shwetank, M. Lauver, C. Netherby, G. Jin and A. Lukacher**. Pennsylvania State Univ. Col. of Med.

P414 **181.26** The GRB2-associated binding protein 3 is required for IL-2 and IL-15 induced NK-cell expansion and limits trophoblast invasion during pregnancy. **A. Sliz, K.C.S. Locker, K. Lampe, A. Godarova, D.R. Plas, E. Janssen, H. Jones, A.B. Herr and K. Hoebe**. Univ. of Cincinnati and Cincinnati Children's Hosp. Med. Ctr.

P433 **181.27** Elucidating the role of cytokine signaling in the homeostasis of innate immune cells with JAK inhibitors. **L. Vian, M. Lee, G. Sciumè, N. Gazaniga, S. Dell'Orso, S. Brooks and M. Gadina**. NIAMS, NIH and Sapienza Univ. of Rome, Italy.

P434 **181.28** The tumor necrosis factor superfamily member RANKL suppresses effector cytokine production in group 3 innate lymphoid cells. **J. Bando, S. Gilfillan, C. Song, K.G. McDonald, S.C-C. Huang, R.D. Newberry, Y. Kobayashi, D. Allan, J.R. Carlyle, M. Cella and M. Colonna**. Washington Univ. Sch. of Med., NGM Biopharmaceuticals, Case Western Reserve Univ., Masumoto Dent. Univ., Japan, NHLBI, NIH and Univ. of Toronto, Canada.

182. IMMUNE MECHANISMS OF HUMAN DISEASE

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P435 **182.1** Bone marrow transplantation rescues monocyte recruitment defect and improves cystic fibrosis in mice. **Z. Fan, J. Miller, R. Herro, E. Ehinger, D.J. Conrad, Z. Mikulski, Y.P. Zhu, P.M. Marcovecchio, C.C. Hedrick and K. Ley**. La Jolla Inst. for Allergy and Immunology and Univ. of California, San Diego.

P436 **182.2** Gαq deficiency accelerates the onset of experimental lupus. **Y. He, H. Qian and G. Shi**. First Affiliated Hosp. of Xiamen Univ., China.

P437 **182.3** Potential role of myeloid-derived suppressor cells in pulmonary fibrosis. **T. Liu, A. Rinke, K. Flaherty and S.H. Phan**. Univ. of Michigan.

P438 **182.4** Morphometric and cytologic characterization of tertiary lymphoid follicles in resected bowel of patients with diverticulitis, ulcerative colitis, and Crohn's disease. **A.L. Mauner and E.N. McNamee**. Univ. of Colorado Sch. of Med. and Maynooth Univ., Co. Kildare.

P439 **182.5** Genetic immune pathologies are common in Azerbaijan. **N. Fazal, S. Ibrahimova, V. Mammadova, G. Aliyeva and G. Nasrullayeva**. Chicago State Univ., Azerbaijan Medical Univ., Azerbaijan and Inst. of Hematology and Blood Transfusion, Azerbaijan.

P440 **182.6** Antigenic function of 14-3-3ζ is a novel tool to treat rheumatoid arthritis. **R. Chakravarti, J. McGowan, C. Peter, Y. Zhang, B. Veerman, R. Rahaman and B. Joe**. Univ. of Toledo and Univ. of Toledo Col. of Medicine and Life Sciences.

P441 **182.7** Relationship between autoimmunity and lifestyle. **K. Kimura**. Japan Univ. of Econom., Japan.

P442 **182.8** Cell bound complement activation products alone and in combination with low serum complement C3 or C4 have superior diagnostic performance in systemic lupus erythematosus. **A. Weinstein, D.J. Wallace, C. Putterman, C. Arriens, A. Askanase, K.C. Kalunian, C.E. Collins, A. Saxena, E.M. Massarotti, R.V. Alexander, C. Ibarra, W. Chatham, R. Ramsey-Goldman, S. Narain, T. Chandra, J. Ahearn and S. Manzi**. Exagen, Cedars Sinai Med. Ctr., Albert Einstein Col. of Med., Oklahoma Med. Res. Fndn., Columbia Univ. Med. Ctr., Univ. of California, San Diego, MedStar Washington Hosp. Ctr., New York Univ. Sch. of Med., Harvard Med. Sch., Univ. of Alabama Sch. of Med., Feinberg Sch. of Med., Northwestern Univ., Hofstra Northwell Sch. of Med., EmpiriQA and West Penn Allegheny Hlth. Syst.

P442 **182.8** Adventitial stromal cells define group 2 innate lymphoid cell tissue niches. **T. Dervieux**. Exagen.

P443 **182.9** TGF-beta in the UCB-MSCs inhibit TNF-alpha in human mast cells and atopic dermatitis. **H-H. Park, Y-S. Yu, S-Y. Baek, S-M. Yoo, K-W. Seo and K-S. Kang**. Kangstem Biotech, South Korea.

P444 **182.10** Endogenous antisense RNA and dysregulation of CD39 expression in inflammatory bowel disease. **M.S. Longhi, R. Harshe, A. Xie, H. Zhang, R.J. Robles, S. Mukherjee, M. Vuerich, A.C. Moss and S.C. Robson**. Beth Israel Deaconess Med. Ctr.

P445 **182.11** An autoimmune disease risk SNP, rs2281808, in SIRPG is associated with reduced expression of SIRPγ and heightened effector state in human CD8 T-cells. **S. Sinha**. Univ. of Iowa.

P446 **182.12** Effect of an anti-inflammation treatment on ligature-induced experimental periodontitis. **A. Hu, K. Pan and X. Han**. Forsyth Inst.

P447 **182.13** Reduced gravity contributes to neutrophil to lymphocyte ratio shifting and promotion of the oxidative stress response. **A.M. Paul, S.D. Mhatre, E. Cekanaviciute, A-S. Schreurs, C.G.T. Tahimic, R.K. Globus, B. Crucian and S. Bhattacharya**. NASA Ames Res. Ctr.

P448 **182.14** Reduced acetylation of histones H3 in peripheral blood mononuclear cells of patients with Primary Sjögren's syndrome. **Y. Li**. The First Affiliated Hosp. of Xiamen Univ., China.

P449 **182.15** Stress-induced immune dysregulation: a continuum spanning Antarctica winterover, spaceflight, and terrestrial patients. **S.S. Krieger, G. Makedonas, S. Mehta, M. Nelman, D. Pierson, S. Tyring, A. Choukèr, M. Feuerecker, C. Strewe, C. Sams and B. Crucian**. KBRwyle, JES Tech, NASA Johnson Space Center, Univ. of Texas Hlth. Sci. Ctr., Houston and Ludwig Maximilians Univ. of Munich, Germany.

P450 **182.16** Peripheral blood neutrophil and G-CSF levels are linked to aztreonam lysine use in humans with cystic fibrosis. **N.D. Wright and J.R. Gordon**. Univ. of Saskatchewan, Canada.

P451 **182.17** WITHDRAWN

P452 **182.18** Upregulation of SLAMF3 on human T cells is induced by palmitic acid through the STAT5-PI3K/Akt pathway and features the chronic inflammatory profiles of type 2 diabetes. **Z. Hu, T. Zhou, G. Wang and Y-G. Yang**. Jilin Univ., China.

P453 **182.19** Understanding the role of IL-33 in endometriosis associated inflammation and pathology. **J.E. Miller, M. Koti and C. Tayade**. Queen's Univ., Canada.

P454 **182.20** Inflammation in PTSD is a consequence of dysregulated WNT signaling orchestrated by long non-coding RNA LINC00926 and lysine methyltransferase MLL1. **M. Bam, X. Yang, P.S. Nagarkatti and M. Nagarkatti**. Univ. of South Carolina.

P455 **182.21** PAM3 supports the generation of M2-like macrophages from lupus patient monocytes and improves disease outcome in murine lupus. **B.H. Horuluoglu, D. Bayik, N. Kayraklioglu, E. Goguet, L.P. Blanco, M.J. Kaplan and D.M. Klinman**. NCI, NIH and NIAMS, NIH.

P456 **182.22** Alternative macrophage programming after clot phagocytosis. **A. Schenkel, J. Aragon, C. Mills, M. Glennon, N. Garcia, C. LaFleur and K. Horn**. Colorado State Univ., Texas A&M Vet. Med. and Univ. of Colorado Sch. of Med.

P457 **182.23** Elevated expression levels of the voltage-gated sodium channel 1.7 and BAFF receptor in peripheral monocytes contribute to activation of monocytes of patients with primary Sjögren's syndrome. **K. Yoshimoto, Y. Ikeda, K. Suzuki and T. Takeuchi**. Keio Univ. Sch. of Med., Japan.

P458 **182.24** Identification of T-cell subsets associated with muscle strength in people with cancer: a pilot study. **A. Narsale, R. Moya, J. Ma, L. Anderson, D. Wu, J. Garcia and J.D. Davies**. San Diego Biomed. Res. Inst. and Univ. of Washington.

P459 **182.25** Mitochondrial changes synergize with long-chain fatty acid derivatives to support Th17 inflammation in diabetes. **M. Agrawal, D.A. Nicholas, E.A. Proctor, A.C. Belkina, A. Jones, L. Panneerseelan-Bharath, F. Raval, B. Ip, M. Zhu, J. Cacicedo, C. Habib, N. Sainz-Rueda, L. Persky, P.G. Sullivan, B.E. Corkey, C.M. Apovian, P.A. Kern, D.A. Lauffenburger and B.S. Nikolajczyk**. Univ. of Kentucky, Boston Univ. Sch. of Med., Pennsylvania State Univ., Merrimack Col. and Massachusetts Inst. of Technol.

P460 **182.26** Sterile skin injury leads to neutrophil-associated kidney inflammation. **S. Skopelja-Gardner, J. Tai, P. Hermanson, X. Sun, L. Tanaka and K.B. Elkon**. Univ. of Washington.

P461 **182.27** Impact of genetic polymorphisms on human immune cell gene expression. **B.J. Schmiedel, D. Singh, A. Madrigal, A.G. Valdovino-Gonzalez, B.M. White, J. Zapardiel-Gonzalo, B. Ha, G. Altay, J.A. Greenbaum, G. McVicker, G. Seumois, A. Rao, M. Kronenberg, B. Peters and P. Vijayanand**. La Jolla Inst. for Immunology and The Salk Inst. for Biol. Studies.

P462 **182.28** Functional characterization of an activating anti-TLR4 monoclonal antibody (UT18) with a demonstrated role in reversal of new-onset type I diabetes in NOD mice. **K.C.S. Locker, K. Hoebe, W.M. Ridgway and A.B. Herr**. Univ. of Cincinnati and Cincinnati Children's Hosp. Med. Ctr.

P464 **182.29** Alpha2B-adrenergic receptor regulates neutrophil recruitment in MSU-induced peritoneal inflammation. **Y. Wei, L. Duan, J. Chen, X. Rao, Y. Tao and J. Zhong**. Case Western Reserve Univ., Oregon Hlth. and Sci. Univ. and The First Affiliated Hospital of Xiamen Univ.

P465 **182.30** Newfound role for noncanonical NF-κB signaling in inflammatory bowel disease: gene expression levels serve as a proxy for predicting anti-TNF therapy responsiveness. **H. Morrison, K. Eden, V.Q. Nguyen, D.R. Sorrentino, R.M. Brock and I.C. Allen**. Virginia Polytechnic Inst. and State Univ. and Virginia Tech Carilion Sch. of Med. and Res. Inst.

P466 **182.31** Simultaneous analysis of gene expression and T cell repertoire in peripheral blood mononuclear cells from patients with cystic fibrosis at the single cell level. **A. Ferguson, J. Luo, X. An, J.M. Pilewski, W. Chen and K. Chen**. Univ. of Pennsylvania and Univ. of Pittsburgh Sch. of Med.

P467 **182.32** 22q11.2 Deletion syndrome (DiGeorge) and mutations in *Forkhead Box N1* (*FOXN1*) cause a thymic hypoplasia through distinct developmental processes. **N.S. van Oers, Q. Du, L. Huynh, F. Coskun, I. Dozmorov, P. Raj, S. Khan, C. Wysocki, M.L. Markert and M.T. de la Morena**. Univ. of Texas Southwestern Med. Ctr., UT Southwestern Med. Ctr., Duke Univ. Med. Ctr. and Univ. of Washington.

P468 **182.33** Small intestinal lamina propria immune cells dyshomeostasis is associated with alcoholic steatohepatitis in the mouse. **L. Hao, W. Zhong, X. Sun and Z. Zhou**. Univ. of North Carolina, Greensboro.

P469 **182.34** Idiopathic inflammatory myopathy patients with different autoantibody exhibit unique peripheral blood T cell subsets. **J-P. Li, S-H. Chang, G.J. Tsay, D-Y. Chen and J-L. Lan**. China Med. Univ. Hosp., Taiwan.

P470 **182.35** Age associated insulin resistance is controlled by microbiota through a monocyte-B1a cell pathway. **M. Bodogai, J. O'Connell, Y. Kim, J. Egan and A. Biragyn**. NIA, NIH.

P471 **182.36** Identification of peripheral immune mechanisms playing a protective role in Alzheimer's disease progression. **A. Agrawal, J. Baulch, M. Acharya and S. Agrawal**. Univ. of California, Irvine.

P472 **182.37** Pro-fibrotic activation of human macrophages in systemic sclerosis. **R. Bhandari, M. Ball, V. Martyanov, D. Popovich, E. Schaafsma, S. Han, M. Eltanbouly, M. Carns, E. Arroyo, K. Aren, M. Hinchcliff, M. Whitfield and P. Pioli**. Dartmouth Geisel Sch. of Med. and Feinberg Sch. of Med., Northwestern Univ.

P473 **182.38** The impact of IL-27 on human T cells is altered in multiple sclerosis patients. **M-L. Clénet, C. Laurent, O. Devergne, P. Duquette, A. Prat, C. Larochelle and N. Arbour**. Centre de recherche du CHUM, Canada and INSERM U1151, France.

P474 **182.39** Human herpes virus 6 may facilitate human endogenous retrovirus activation and endoplasmic reticulum stress in de novo autoimmune hepatitis. **U.D. Ekong, J. Yao, J. Patterson, Y. Avitzur, M. Martinez, S. Lobritto and A.L. Mason**. Yale Univ. Sch. of Med., Univ. of Alberta, Canada, Hosp. for Sick Children, Canada and Columbia Univ. Med. Ctr.

P475 **182.40** Increased expression of CD40 and CD40L in acute coronary syndrome patients: association with genetic variants in western Mexican population. **D.E. Martinez-Fernandez, J.R. Padilla-Gutiérrez, F. Casillas-Muñoz, E. Valdés-Alvarado, B. Parra-Reyna, M. Aceves-Ramírez, J.F. Muñoz-Valle and Y. Valle-Delgadillo**. Univ. De Guadalajara, Centro Universitario de Ciencias de la Salud, Mexico.

P476 **182.41** The Th2 cytokine IL-4 mediates loss of skin γδT cells in atopic dermatitis. **J. Wang, Y. Fu and M.H. Kaplan**. Indiana Univ. Sch. of Med.

P477 **182.42** Novel roles of lipid mediators in psoriatic skin inflammation. **H. Sumida, Y. Kita, T. Shimizu and S. Sato**. Univ. of Tokyo, Japan and Natl. Ctr. for Global Hlth. and Med., Japan.

P478 **182.43** Enhanced adenosinergic signaling and immune cell exhaustion after trauma. **S. Tiwari-Heckler, M.S. Longhi, J. Harbison, L.E. Otterbein, C.J. Hauser and S.C. Robson**. Beth Israel Deaconess Med. Ctr. and Harvard Med. Sch.

P479 **182.44** ATP release drives heightened immune response and autoimmunity in hypertension. **T. Zhao, Y. Li, K. Bernstein and X. Shen**. Zhejiang Univ. Sch. of Med., China and Cedars-Sinai Med. Ctr.

P700 **182.45** Peripheral blood Th40 cells reflect disease progression and are controlled by rituximab in human multiple sclerosis. **D.H. Wagner, G. Vaitaitis and D. Waid**. Univ. of Colorado.

P701 **182.46** Role of CD137L in lumbar spinal cord microglial cytokine responses following sciatic nerve crush. **L. Cao**. Univ. of New England.

P702 **182.47** IL-35^{+} regulatory immune cells in diabetic nephropathy. **K. Singh, Z. Luo, P-O. Carlsson, P. Hansell and S. Sandler**. Uppsala Univ. and Uppsala Univ., Sweden.

P703 **182.48** The unfolded protein response contributes to antiproliferative and proapoptotic effects of IFN-λ4 in human hepatic cells. **O.O. Onabajo, F. Wang, O. Florez-Vargas, A. Obajemu, J. Vargas and L. Prokunina-Olsson**. NCI, NIH.

P704 **182.49** Nerve growth factor receptor expression marks activated human perivascular adventitial fibroblasts in distinct perturbed states. **A.M.S. Barron, J.D. Ho, J.C. Mantero, J. Bhawan and J.L. Browning**. Boston Univ. Sch. of Med.

P705 **182.50** Monocytes of chronic fatigue syndrome patients, their family members without CFS, and unrelated healthy donors: searching for differences. **D. Hudig, K. Tokunaga, A.P. Sung, M.J. Guglielmo, J. Smith-Gagen, R. Merica and D. Redelman**. Sch. of Med., Univ. of Nevada, Reno.

P707 **182.51** Dysregulated monocyte compartment in human obesity. **K. Friedrich, M. Sommer, S. Thrum, M. Blüher, U. Wagner and M. Rossol**. Leipzig Univ., Germany.

P708 **182.52** The effects of altered TGFβ signaling on human T follicular helper cell development and function. **Z.C. Schmiechen, K. Weissler, K. Laky and P. Guerrerio**. NIAID, NIH.

P709 **182.53** Kinetics of immune cell responses in the multiple low dose streptozotocin mouse model of type 1 diabetes. **Z. Luo, C. Soläng, M. Blixt, P-O. Carlsson, S. Sandler and K. Singh**. Uppsala Univ., Sweden.

P710 **182.54** Glucocorticoid induced leucine zipper is inversely related with neuroinflammation in the brain. **N.M. Lynch, J. Wong and M. Srinivasan**. Indiana Univ., Purdue Univ. Indianapolis.

P711 **182.55** Adaptive immune cell activation in acute pediatric traumatic brain injury. **S.B. Ortega, V.O. Torres, F. Tian, K. Poinsatte, J. Tweed, C. Greenwell, J. Windsor, L. Raman, D. Miles and A. Stowe**. Univ. of Iowa, Univ. of Texas Southwestern Med. Ctr., Univ. of Texas Arlington, Children's Hlth. and Univ. of Kentucky.

P712 **182.56** Biochemical and functional characterization of the ICOSL TNFR2 interaction. **N.G. Herrera, S. Garrett-Thomson and S. Almo**. Albert Einstein Col. of Med.

P713 **182.57** CD4+ T cell antigen discovery in sarcoidosis. **S.A. Greaves, A. Mitchell, M. Falta, R. Santos, C.A. Pinilla and A.P. Fontenot**. Univ. of Colorado Anschutz Med. Campus and Torrey Pines Inst. for Molec. Studies.

P714 **182.58** Anti-inflammatory effects of xanthohumol in RAW 264.7 macrophages are mediated through the activation of AMP kinase. **D.M. Mills, J. Samuels, M. Hawkins, A. Gavre, R. Shashidharamurthy and S. Rayalam**. Philadelphia Col. of Osteo. Med.

P715 **182.59** FcγRIIB on $CD11c^{+}$ cells alters liver and adipose tissue inflammation affecting glucose tolerance and atherosclerosis in female mice. **J. Marvin, J.A. Balsamo, J.P. Rhoads and A.S. Major**. Vanderbilt Univ. Med. Ctr.

P716 **182.60** Correlating epigenetic modulating enzyme PRMT5 to disease severity in multiple sclerosis. **W. Osman, S. Amici, L. Webb and M. Guerau-De-Arellano**. The Ohio State Univ.

P717 **182.61** Characterisation of immune complexes in Kawasaki disease and other infectious diseases by protein sequencing. **S. Menikou, A. McArdle, M. Kaforou, C. Shimizu, V.J. Wright, J.A. Herberg, J.T. Kanegaye, A. Tremoulet, J.C. Burns and M. Levin**. Imperial Col. London, Univ. of California, San Diego and Rady Children's Hosp.

P718 **182.62** IL-15-driven clonal expansion of TLR9-primed human B-CLL is characterized by activation of AKT and STAT5, downstream elevation of cyclin D2 and repression of DNA damage response mediators, ATM and TP53BP. **P.K.A. Mongini, R. Gupta, S.L. Allen, J. Barrientos, J.E. Kolitz, K. Rai and N. Chiorazzi**. Northwell Hlth., Feinstein Inst. for Med. Res. and Northwell Hlth., Hofstra Northwell Sch. of Med.

P719 **182.63** Early treatment of a CD137L neutralizing antibody decreases mechanical hypersensitivity and functional recovery time following a sciatic nerve crush. **A.A. Wakley and L. Cao**. Univ. of New England.

P720 **182.64** Mathematica as a tool for interactive display of flow cytometry and clinical data. **A.I. Loewendorf, A.Y. Collier, D.A. Kahn, J. Nevell and T.A. Nguyen**. ImmunoVation, Beth Israel Deaconess Med. Ctr. & Harvard Med. Sch., Asante Physician Partners, Medford, Oregon, Glendale, CA and David Geffen Sch. of Med., Univ. of California, Los Angeles.

P721 **182.65** Long-range cis-regulatory architecture of the human *IL2* gene. **P.K. Sharma, R.M. Thomas, M. Johnson and A. Wells**. The Children's Hosp. of Philadelphia.

P722 **182.66** IL-15 expression on B cells and myeloid cells is distinctly modulated by inflammatory factors in MS and healthy donors. **N. Farzam-kia, A. Carmena Moratalla, F. Lemaître, D. Beauseigle, E. Haddad, C. Larochelle, A. Prat and N. Arbour**. Centre de Recherche du Centre Hospitalier de l'université de Montréal, Canada and Fac. of Med., Université de Montréal, Canada.

P723 **182.67** NSG mice engrafted with human PBMC provide a robust platform for preclinical testing of immunomodulatory therapeutics relevant to GvHD, autoimmunity, and oncology. **B. Soper, A. Rose, A. Hodel and P. Kaur**. The Jackson Lab.

P724 **182.68** BeO-exposure induces B cell-mediated noninfectious granuloma formation in the lung. **S.M. Atif, D. Mack, A.S. McKee, J. Rangel-Moreno, A.K. Martin, A. Getahun, L.A. Maier, J.C. Cambier, R.M. Tuder and A.P. Fontenot**. Univ. of Colorado Anschutz Med. Campus, Univ. of Rochester Med. Ctr. and Dept. of Med., Natl. Jewish Hlth.

P725 **182.69** Coronary artery bypass grafting surgery is associated with immunoparalysis of monocytes and dendritic cells. **A.J. Perros, A. Esguerra-Lallen, K. Rooks, F.N. Chong, S. Engkilde-Pedersen, H.M. Faddy, E. Hewlett, R. Naidoo, J-P. Tung, J.F. Fraser, P. Tesar, M. Ziegenfuss, S. Smith, D. O'Brien, R.L. Flower and M.M. Dean**. Australian Red Cross Blood Service, Australia and The Prince Charles Hosp., Australia.

P726 **182.70** A Toll-like receptor 5 agonist entolimod mitigates radiation damage through a neutrophil-dependent mechanism. **C.M. Brackett, K. Greene, B. Kandar, N. Trageser, R. Kandefer, S. Pal, L. Burdelya and A. Gudkov**. Roswell Park Cancer Inst.

P727 **182.71** Differential activation of an innate immune signaling pathway in lymphocytes from patients with multiple sclerosis. **M.D. Carrithers**. Univ. of Illinois-Chicago.

P728 **182.72** Detection and characterization of T cells reactive to hybrid insulin peptides in patients with type 1 diabetes. **R.L. Baker, P.A. Gottlieb, T. Delong and K. Haskins**. Univ. of Colorado Sch. of Med. and Univ. of Colorado, Skaggs Sch. of Pharmacy and Pharmaceutical Sci.

P730 **182.73** Th1/Th2 imbalance in pregnant patients with antiphospholipid syndrome-related recurrent pregnancy loss is corrected by heparin and aspirin combination therapy. **M. Wang, G. Zhou, J. Lv, T. Ishikawa, D. Nallapothula, Q. Wang and R.R. Singh**. Peking Univ. Shenzhen Hosp., Peking Univ. Shenzhen Hosp., China and David Geffen Sch. of Med., Univ. of California, Los Angeles.

P731 **182.74** The indispensable role of polarized αβT17 cell in mannan-induced psoriasis model uncovers a novel pathogenesis mechanism of psoriasis. **H. Zheng, H. Zhou, X. Liu, X. Wei, X. Teng, Z. Wang, F.L. Zeng and J. Li**. Sichuan Univ., China.

P732 **182.75** Sexual dimorphism in the physiological response of the *Apoe*$^{-/-}$atherosclerosis model to sleep fragmentation. **A.K. Moriarty, T. Waseem, W.C. Keeter, S. Edemobi, M. Pham, L. Sanford, L. Wellman and E. Galkina**. Eastern Virginia Med. Sch.

P733 **182.76** Plasmacytoid dendritic cells contribute to pro-inflammatory and pro-fibrotic milieu in lung fibrosis. **R.R. Singh and I. Valera**. David Geffen Sch. of Med., Univ. of California, Los Angeles.

P734 **182.77** High affinity autoantibodies to interferon-γ from the patients with adult-onset immunodeficiency. **C-L. KU**. Chang Gung Univ.

P729 **182.78** Construction of humanized mice, kinetics of human immune system development and induction of T-dependent and T-independent antibody responses. **D.P. Chupp, O. Acosta, H. Zan and P. Casali**. Univ. of Texas Hlth. at San Antonio.

P735 **182.79** Symphony of life: genetics, immunology, cancer & aging I. Genetic and immunological evaluation of mice with histocompatible tumors, virus induced breast cancer and survivors of metastatic breast cancer, HIV infection, and old people. **R.M. Williams, J. Zuniga, R.M. Williams, J. Granados, E.T. Feris and E.J. Yunis**. Northern California Res. Inst., Dartmouth Geisel Sch. of Med., Northern California Cancer Ctr. & Res. Inst., Inst. of Nutrition, Mexico and Dana Farber Cancer Inst., Harvard Med. Sch.

P736 **182.80** Group A streptococcal infection, acute rheumatic fever and rheumatic heart disease in the Solomon Islands. **D. Sika-Paotonu and U. Liligeto**. Wellington Sch. of Med. & Hlth. Sci., Univ. of Otago, New Zealand and Victoria Univ. of Wellington, New Zealand.

P737 **182.81** Functional studies to understand immune modifiers in cystic fibrosis. **S. Lu, K. Song, J. Bomberger and J.K. Kolls**. Tulane Univ. Sch. of Med. and Univ. of Pittsburgh.

P738 **182.82** Vagal control of glycemia and inflammation in diabetic septic mice. **A. Mahmood, B. Joseph, G. Shimojo, Z. Li, R. Shah, A. Kanashiro, H.C. Salgado and L. Ulloa**. Rutgers New Jersey Med. Sch. and Univ. of Sao Paulo, Brazil.

P739 **182.83** Pulmonary eosinophilic granulomatosis with polyangiitis has allergic and immunoregulatory features. **E. Lin, Z. Dong, M. Wechsler, M. Yandell and F. Clayton**. Univ. of Utah Sch. of Med. and Natl. Jewish Hlth.

P740 **182.84** Development of an outbred disease model of Hermansky-Pudlak syndrome in threespine stickleback. **E.A. Beck, M.C. Currey, E. Niebergall, S. Bassham and W.A. Cresko**. Univ. of Oregon.

P742 **182.85** Epitope profiling of plasma antibody in Alzheimer's disease dementia patients. **S-G. Park, K.Y. Sim, Y. Byeon and K.H. Lee**. Gwangju Inst. of Sci. and Technol., South Korea and Chosun Univ., South Korea.

P743 **182.86** Unraveling the role of fibrosis in the TB granuloma. **S. Evans, E.A. Wong, J.L. Flynn, J.T. Mattila and D. Kirschner**. Univ. of Michigan, Univ. of Pittsburgh and Univ. of Pittsburgh Grad. Sch. of Publ. Hlth.

P706 **182.87** BET bromodomain targeting suppresses the PD-1/PD-L1 pathway in triple-negative breast cancer and elicits anti-tumor immune response. **G. Andrieu, J.S. Shafran and G.V. Denis**. Institut Necker, Enfants Malades, France and Boston Univ. Sch. of Med.

P741 **182.88** A phase 1, randomized, controlled clinical study of CC-11050 in people living with HIV with suppressed plasma viremia on antiretroviral therapy (APHRODITE). **A. Boulougoura, E. Gabriel, E. Laidlaw, V. Khetani, K. Arakawa, J. Higgins, A. Rupert, R.J. Gorelick, K. Lumbard, A. Pau, A. Poole, A. Kibiy, P. Kumar and I. Sereti**. NIAID, NIH, Karolinska Inst., Sweden, Celgene Global Hlth., Celgene Corp., Frederick Natl. Lab. for Cancer Res. and Georgetown Univ. Hosp.

P463 **182.89** Chronic inflammation associated with obesity exacerbates bone loss in mice. **T. Fields, M. Ramanan, S. Rayalam and R. Shashidharamurthy**. Philadelphia Col. of Osteo. Med.

183. INFLAMMATORY AND AUTOIMMUNE DISEASE

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P744 **183.1** Galectin-3 promotes non-canonical inflammasome activation through binding to glycans on LPS intracellularly. **T-H. Lo, H-L. Chen, H-Y. Chen and F-T. Liu**. Academia Sinica, Taiwan.

P745 **183.2** Mature tissue-resident memory T cells lose the responsiveness to bystander inflammation. **W. Liao and N. Zhang**. Univ. of Texas Hlth. Sci. Ctr., San Antonio.

P746 **183.3** Prevention of erythrocyte fragility and anemia induced by extracellular histones. **F. Kordbacheh, C.H. O'Meara, L.A. Coupland, P.M. Lelliott and C.R. Parish**. The John Curtin Sch. of Med. Res., Australian Natl. Univ., Australia.

P747 **183.4** AhR ligands differentially affect thymus and peripheral lymphoid organs by targeting T cells and their functions leading to pro- or anti-inflammatory responses. **N.P. Singh, K. Miranda, D. Jackson, S. Sumpter, U.P. Singh, M. Nagarkatti and P. Nagarkatti**. Univ. of South Carolina Sch. of Med.

P748 **183.5** Roles of Toll-like receptors in regulating fibroblastic reticular cell pathobiology during sepsis. **M. Deng, Y. Li, T. Chen, K. Chen and T.R. Billiar**. Univ. of Pittsburgh.

P749 **183.6** Astragaloside IV, the major bioactive component of *Astragalus membranaceus* (Fisch.) Radix, attenuates airway inflammation by modulating Th2 cytokines, STAT6 and ROR-$\gamma\tau$ transcription factors in an asthmatic mouse model. **C-B. Shen, Y-N. Gu, S. Wang and L. Yu**. Shanghai TCM-Integrated Hosp., China.

P750 **183.7** PGD_2/DP1 signaling deficiency ameliorates experimental autoimmune encephalitis. **J. Zheng and S. Perlman**. Carver Col. of Med., Univ. of Iowa.

P751 **183.8** Histamine-releasing factor is a novel alarmin. **K. Kasakura, Y. Kawakami, Y. Kawakami and T. Kawakami**. La Jolla Inst. for Allergy and Immunology.

P752 **183.9** Assessment of SALSA protein levels and its methylation status in healthy Indian individuals. **M. Gandhi and K. Chaudhary**. Guru Gobind Singh Indraprastha Univ., India.

P753 **183.10** REV-ERB-mediated regulation of dendritic cell maturation and function. **M. Amir, S. Campbell, T. Kamenecka and L.A. Solt**. Scripps Florida.

P754 **183.11** The effect of bee venom phospholipase A2 on high-fat-diet-induced obesity in mice. **H. Jeong, H. Lee and H. Bae**. Kyung Hee Univ., South Korea.

P755 **183.12** Glycolytic regulation of neuroinflammatory response: role of monocarboxylate transporter 4. **S. Giri, J. Singh, H. Suhail, A. Kumar and R. Rattan**. Henry Ford Hlth. Sys. and Wayne State Univ. Sch. of Med.

P756 **183.13** CD40 function in immune development and response: cell-type requirements and cytoplasmic domain function. **Y. Lu, J. Chiang, R. Zhang, F. Alkhaleel and R.J. Hodes**. NCI, NIH and NIA, NIH.

P757 **183.14** Upregulation of endocannabinoids in fatty acid amide hydrolase knockout mice prevents staphylococcal enterotoxin B-mediated acute lung injury through changes in the microbiome, immune, and metabolic profiles. **M.A. Sultan, P. Nagarkatti and M. Nagarkatti**. Sch. of Med., Univ. of South Carolina.

P758 **183.15** Single-step purification of sputum extracellular vesicles from cystic fibrosis patients using aF4-MALS. **B. Dobosh, S. Liu, M. Chen and R.M. Tirouvanziam**. Emory Univ. and Wyatt Tech.

P759 **183.16** Anti-CD11b antibody treatment suppresses the disease conditions in rheumatoid arthritis-prone, FcγRIIB-deficient mice. **K. Takahashi, M. Ohtsuji, Q. Lin, H. Okazaki, H. Amano, H. Yagita, H. Nishimura and S. Hirose**. Kanagawa Univ. of Human Services, Fac. of Hlth. and Social Services, Japan, Toin Univ. of Yokohama, Japan, Musashigaoka Junr. Coll., Japan and Juntendo Univ. Sch. of Med., Japan.

P760 **183.17** Leukotriene B4 is required for inflammasome activation. **A. Salina, S. Brandt, A.I. Medeiros and H. Serezani**. Vanderbilt Univ. Med. Ctr. and Sao Paulo State Univ.

P761 **183.18** Method development for the analysis of PBMC-mediated killing of K562 cells by bovine colostrum and various fractions. **P.D. Vieira-Brock, A. Andersen, B. Vaughan and D. Vollmer**. 4Life.

P762 **183.19** Brain-Thymus communication is a novel immunosuppressive feature of neurological insults. **K. Ayasoufi, C.K. Pfaller, R.H. Khadka, F. Jin and A.J. Johnson**. Mayo Clin., Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin., Rochester, Minnesota.

P763 **183.20** A role for group 2 innate lymphoid cells in muscular dystrophy. **J. Kastenschmidt**. Univ. of California, Irvine.

P764 **183.21** Keratinocyte-derived CCL20 orchestrates epidermal localization of IL-17-producing γδ T cells and ILCs to mediate psoriasis-like skin inflammation. **T.P. Singh, X. Lu, S.P. Singh, H. Zhang, M. Doucet, S.L. Kominsky and J.M. Farber**. NIAID, NIH and Johns Hopkins Univ. Sch. of Med.

184. T CELL RECEPTOR SIGNALING

Poster Session

Sun. 2:30 pm—Exhibit/Poster Hall

P765 **184.1** Recruitment of NEMO/IKKγ to TCR microclusters during T cell activation. **N.R. Koylass, E.A. DeRiso, A.L. Szymczak-Workman, A. Montecalvo, J.M. Murphy, M. Cristina Seminario, L.P. Kane and S.C. Bunnell**. Tufts Univ. Sch. of Med. and Univ. of Pittsburgh Sch. of Med.

P766 **184.2** Engagement of CD45 differentially alters early signaling events in human T cells costimulated through TCR+ CD28 compared with TCR+ICAM-1. **A. Bhatta, M. Chan and S.H.O. Benedict**. Univ. of Kansas.

P767 **184.3** Molec. background of Orai1 accumulation in the immunological synapse. **O. Vörös, G. Panyi and P. Hajdu**. Fac. of Med., Univ. of Debrecen, Hungary and Fac. of Dentistry, Univ. of Debrecen, Hungary.

P768 **184.4** GTPase-activating protein (RASAL1) associates with ZAP-70 of the TCR and negatively regulates T cell proliferation and anti-tumor immunity. **C.E. Rudd, Y.R. Thaker, M. Raab and K. Strebhardt**. Univ. de Montreal, Canada, Univ. of Essex, United Kingdom, J.W. Goethe Univ., Germany and W.T. Goethe Univ., Germany.

P769 **184.5** FOXP3, CD48, and autophagy confer the protection of CD4 and CD8 human T cells from T cell receptor restimulation-induced cell death. **K. Voss, N.M. Lott, C. Lake, B.M. Bauman, B. Dorjbal, C.R. Luthers, S. Arjunaraja, C.L. Dalgard and A.L. Snow**. Uniformed Serv. Univ. of the Hlth. Sci.

P770 **184.6** The phosphorylation kinetics of the key regulators in T cell receptor signaling pathway. **W. An, K. Park, A. Reyes, A. Kwieraga, N. Sabri, A. Frey, E. Chronopoulou, J. Savas-Carstens, D. Soper, J. Elia, M. Li and X. Yang**. BioLegend, Inc.

P771 **184.7** TMEM16F regulates bystander TCR-CD3 membrane binding at the immunological synapse. **A. Connolly, R. Panès, A. Bellemare-Pelletier and E. Gagnon**. Univ. of Montreal, Canada.

P772 **184.8** PAK6: a novel kinase in the maintenance of T cell anergy. **A. Torres, A. Tang, R. Vyas, C. Su, M. Johnson and A. Wells**. Children's Hosp. of Philadelphia and Univ. of Pennsylvania.

P773 **184.9** JNK inhibition by transforming growth factor-β type I receptor (TGF-β RI) in T cells. **R. Jacks and M. Iwashima**. Loyola Univ. Chicago.

P774 **184.10** TCR-pMHC bond length controls TCR ligand discrimination. **J. Huang and D.K. Sasmal**. Univ. of Chicago.

P775 **184.11** T cell receptor-induced PLC-γ1 sumoylation via PIASxβ and PIAS3 SUMO E3 ligases regulates the microcluster assembly and physiological function of PLC-γ1. **Y. Li, J-Q. Liang and Q-L. Wang**. Sun Yat-sen Univ., China.

185. INNATE CELLS IN ANTI-PATHOGEN AND CYTOKINE RESPONSES

Poster Session

Sun. 2:30 pm—Exhibit/Poster Hall

P776 **185.1** Genome-wide analysis identifies pairs of *cis*-acting lncRNAs and protein-coding genes involved in innate immunity. **Q. Zhang, T-C. Chao, V.S. Patil, Y. Qin, S.K. Tiwari, J. Chiou, A. Dobin, C-M. Tsai, Z. Li, J. Dang, S. Gupta, K.B. Urdahl, V. Nizet, T.R. Gingeras, K.J. Gaulton and T.M. Rana**. Univ. of California, San Diego Sch. of Med., Cold Spring Harbor Lab. and Univ. of Washington Sch. of Med.

P777 **185.2** PD-L2 generates a signal through the PD-1 co-receptor distinct from that of PD-L1. **A. Srinivasamani, Q. Liu and M. Curran**. Univ. of Texas MD Anderson Cancer Ctr.

P778 **185.3** Regulatory role of Ifit2 in mouse hepatitis virus induced neuroinflammation. **J. Das Sarma, A. Burrows, P. Kessler, M-H. Hwang, C. Bergmann and G.C. Sen**. Indian Inst. of Sci. Educ. and Res., India and Cleveland Clin.

P800 **185.4** Indole-3-carbinol ameliorates colonic inflammation in DSS-treated, *Helicobacter muridarum*-infected mice. **R.R. Alkarkoushi, U.P. Singh, I. Chatzistamou, M. Bam, Y. Hui, M. Nagarkatti, P. Nagarkatti and T.L. Testerman**. Univ. of South Carolina Sch. of Med.

P806 **185.5** MiR-146a is a negative regulator of IL-33-stimulated mouse mast cells. **S.A. Kee, M.T. Taruselli, J.J. Ryan and A. Abdul Qayum**. Virginia Commonwealth Univ.

P807 **185.6** Cannabinoid receptor 1 blockade attenuates obesity and adipose tissue type 1 inflammation through miR-30e-5p regulation of Delta-like-4. **K. Miranda, P. Mehrpouya-Bahrami, P.S. Nagarkatti and M. Nagarkatti**. Univ. of South Carolina Sch. of Med.

P810 **185.7** Genomic analysis of bone marrow progenitors during viral infection reveals novel dendritic cell regulators. **Y. Jo, K. Zhang, W. Wang and E. Zuniga**. Univ. of California, San Diego.

P779 **185.8** Transcription factor Blimp-1 regulates sebocyte homeostasis and cytokine production. **K-H. Hung, Y-F. Wu and K-l. Lin**. Academia Sinica, Taiwan.

P801 **185.9** Resistin-like molecule alpha dampens lung inflammation and promotes wound healing in helminth infection and a 3D lung repair model. **SY. Kim, J. Li, A.C. Burr, H. Batugedara, T. Nordgren, X. Zang and M.G. Nair**. Univ. of California, Riverside and Albert Einstein Col. of Med.

P802 **185.10** Autophagy ablation in adipocytes induces local inflammation, insulin-resistance and reveals roles for lipid peroxide and Nrf2 signaling in adipose-liver crosstalk. **M. Ferhat, A. Achenbach, J. Cai, K.ScottM. Pires, B. Chaurasia, M.A. Buffolo, R. Smalling, A. Sargsyan, D.L. Atkinson, S.A. Summers, T.E. Graham and S. Boudina**. Nutrition and Integrative Physiology and Univ. of Utah Sch. of Med.

P803 **185.11** Identification and characterization of fish-specific IL-23 isoforms and their roles in fish immunity. **L. Qin, S. Zhang and H. Zhou**. School of Life Sci. and Technol., Univ. of Electronic Sci. and Technol. of China, China.

P804 **185.12** The biological function of naturally occurring DOCK2 inhibitor in tissue-specific immune evasion. **T. Sakurai, T. Uruno and Y. Fukui**. Kyushu Univ., Japan.

P805 **185.13** Role of PAFR-MHC-II-CD38 interactions in infections. **A.A. Khan**. Univ. of Missouri, Columbia.

P808 **185.14** microRNA-21 controls inflammatory and metabolic program of macrophage and neutrophils during sepsis. **P.H. Melo, A.R. Piñeiros Alvarez and C.H. Serezani**. Vanderbilt Univ. Med. Ctr. and Indiana Univ. Sch. of Med.

P809 **185.15** CD73-dependent adenosine dampens IL-1β-induced CXCL8 production in gingival fibroblasts via HO-1 and pAMPK. **E. Schnaider Ramos Junior, M. Pedram, R.E. Lee, D. Exstrom, O. Yilmaz, R. Coutinho-Silva, D.M. Ojcius and A.C. Morandini**. Univ. of the Pacific Arthur Dugoni Sch. of Dent., Med. Univ. of South Carolina and Federal Univ. of Rio de Janeiro, Brazil.

P811 **185.16** RNA-binding protein EWS, a novel modulator of LTβR signaling. **R. Virgen-Slane, R.G. Correa, P. Ramezani-Rad, A. Rosa-Campos, J. Li and C.F. Ware**. Sanford Burnham Prebys Med. Discovery Inst. and Boehringer Ingelheim Pharmaceuticals, Inc.

The AAI Career Advisory Board will be at the AAI Booth 1101, Sunday, May 12, from 2:30 PM – 3:45 PM.

186. MOLECULAR CONTROL OF CD4⁺ T CELL LIFE CYCLE: ACTIVATION, EFFECTOR AND MEMORY

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P812 **186.1** Using single-cell RNA-seq to lineage trace effector to memory transitions in CD4⁺ T cells during malaria. **S.F.M. Soon, J. Engel, J. Lee, K. James, T. Lonnberg, V. Svensson, S. Teichmann and A. Haque**. QIMR Berghofer Med. Res. Inst., Australia, Wellcome Trust Sanger Inst., Univ. of Turku, Finland and California Inst. of Technol.

P813 **186.2** Characterization and transcriptional profiling of tissue-resident memory CD4⁺ T cells. **Q.P. Nguyen, T. Deng and A.W. Goldrath**. Univ. of California, San Diego.

P814 **186.3** Transcription coactivator OCA-B mediates interactions between target loci in T cells and is sufficient to promote CD4 memory in vivo. **D.R. Tantin, K. Zhao, M.A. Williams, J.S. Hale, B. Lai, G. Ren and H. Kim**. Univ. of Utah and NHLBI, NIH.

P815 **186.4** Plexin B1 expression on human Treg cells is required for regulation of their phenotypic stability by semaphorin 4A. **S.P. Chapoval, M. Hritzo, X. Qi, L. Tamagnone, A. Golding and A.D. Keegan**. Univ. of Maryland Sch. of Med. and Univ. of Torino Med. Sch.

P817 **186.5** CCDC134 facilitates T cell activation and inflammatory responses by regulating T cell receptor signaling. **J. Huang, T. Zhang, B. Yu, S. Yin and X. Qiu**. Sch. of Basic Med. Sci., Peking Univ. Hlth. Sci. Ctr., China.

P818 **186.6** Identification of distinct highly pathogenic allergen-specific T cells in common allergy and asthma. **G. Seumois, C. Ramirez Suastegui, B.J. Shmiedel, S. Liang, V. Shulten, B. Panwar, A. Madrigal, A. Sette, B. Peters and P. Vijayanand**. La Jolla Inst. for Immunology.

P820 **186.7** Inhibitory effects of Klotho hormone on antigen-specific clonal expansion of CD4⁺ T cells. **H. Hwang and A.K. Bamezai**. Villanova Univ.

P821 **186.8** The role of aquaporin-4 in T cell activation. **M. Nicosia, A.M. Beavers, G.W. Farr, P.R. McGuirk, M. Pelletier and A. Valujskikh**. Cleveland Clin. and Aeromics LLC.

P822 **186.9** NF-κB/mTOR/MYC axis drives PRMT5 protein induction after T cell activation. **S. Sengupta, L. Webb, J. Narvaez-Miranda, S. Amici, G. Nagy and M. Guerau-De-Arellano**. Col. of Med., The Ohio State Univ. and The Ohio State Univ.

P824 **186.10** Fibronectin costimulation of CD40L expression integrates innate and adaptive inflammatory signals. **J. Ragheb, Y. Zhang, N. Bushar, H. Oh, E.M. Gertz, A. Patnaik, S. Chakrabarty, R. Kampen, A.D. Kirk, D. Roberts and A. Schäffer**. Ctr. for Drug Evaluation and Res., FDA and NIH.

P825 **186.11** Th2 cytokines and specific donor alloantigen activated CD4⁺CD25⁺T cells reverse chronic rejection: role of IL-4 and IL-5 in promoting antigen-specific Treg. **B.M. Hall, P. Rakesh, G. Tran, R. Hall, S. Bedi, C.M. Robinson, A. Sharland, C. Wang, S.J. Hodgkinson and N.D. Verma**. Univ. of New South Wales, Australia and Sydney Univ., Australia.

P826 **186.12** The spatial and translational mechanisms that govern TOX, a key regulator of lymphocyte development and function. **A. Yeckes, B. de la Torre, A. Kadavallore, R. Murali, R. Soberman and J. Kaye**. Cedars Sinai Med. Ctr. and Massachusetts Gen. Hosp.

P827 **186.13** The RNA binding protein HuR is required for antigen-mediated activation and proliferation of $CD4^+$T cells. **J.S. Ellis, T. Taylor and U. Atasoy**. Univ. of Michigan.

P819 **186.14** Elucidation of long non-coding RNA Snhg7 functions in T cells. **M. Varney, J. McCall, S. Westfall, K. Blethen, I. Martinez and J.B. Barnett**. West Virginia Univ.

P823 **186.15** Lymphopenia and bone marrow T cell sequestration accompanying stroke are mediated by T cell S1P1 loss. **D.S. Wilkinson, C. Dechant, P. Chongsathidkiet, H. Wang, H. Kemeny, D. Laskowitz and P. Fecci**. Duke Univ. Med. Ctr.

P816 **186.16** Activation-dependent posttranscriptional regulation of CD40L is required for an optimal germinal center response. **B. Narayanan, D. Prado De Maio, K. Voskoboynik, J. La Porta, P. Xie and L.R. Covey**. Rutgers Univ.

P828 **186.17** Hypoxia-inducible factors (HIF) in $CD4^+$ T cells promote metabolism, switch cytokine secretion, and T cell help in humoral immunity. **S.H. Cho, A. Raybuck, E. Kemboi, V. Haase and M.R. Boothby**. Vanderbilt Univ. Med. Ctr.

187. REGULATORY MECHANISMS

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P829 **187.1** MAP kinase phosphatase (Mkp)-1 controls program death-ligand (PD-L)1 expression during sepsis. **S.G. Kirk, A.J. Batty, X. Wang, J. Li, W.M. White, W.E. Ackerman, L.D. Nelin, I. Buhimschi, M. Hafner and Y. Liu**. Nationwide Children's Hosp. and NIH.

P830 **187.2** Dysregulation of lipid metabolism during gram-negative sepsis in Mkp-1 deficient mice. **A.J. Batty, J. Li, X. Wang, W.E. Ackerman, S.G. Kirk, W.M. White, X. Wang, D. Anastasakis, L. Samavati, I. Buhimschi, L.D. Nelin, M. Hafner and Y. Liu**. Nationwide Children's Hosp., NIAMS, NIH and Ctr. for Molec. Med. and Genet.

P847 **187.3** Therapeutic effects of a phospholipase D1 inhibitor against polymicrobial sepsis. **Y-S. Bae, S.K. Lee, Y.S. Kim and H.Y. Lee**. Sungkyunkwan Univ., South Korea.

P844 **187.4** Serum amyloid A promotes LPS clearance and attenuates LPS-induced tissue injury. **R.D. Ye, N. Cheng, Y. Liang and X. Du**. Chinese Univ. of Hong Kong, Shenzhen, China and Univ. of Illinois, Chicago.

P835 **187.5** MyD88 mediates the pathogenesis of dermatitis in SHARPIN-deficient mice by regulating TNF production on the skin. **B.R. Sharma, R. Karki and T-D. Kanneganti**. St. Jude Childrens Res. Hosp.

P836 **187.6** The ssDNA exonucleases PLD3 and PLD4 are required to prevent lethal primary HLH-like disease in mice. **A.L. Gavin, D. Huang and D. Nemazee**. Scripps Res. Inst.

P846 **187.7** Key roles for the innate immune response to genotoxic stress in neurological disease. **J.R. Lukens, C.E. Bellinger, E.L. Frost, M.E. Shaw, A.C. Bolte and C.R. Lammert**. Univ. of Virginia.

P837 **187.8** MCMV-experienced ILC1 acquires an m12-dependent memory response. **T.E. O'Sullivan, O-E. Weizman, J.R. Carlyle and J.C-Y. Sun**. David Geffen Sch. of Med., Univ. of California, Los Angeles, Mem. Sloan Kettering Cancer Ctr. and Univ. of Toronto.

P840 **187.9** A role for allosteric disulfides in regulating the function of human killer cell receptor KIR2DL4. **S. Rajagopalan, G. Mastorakos and E.O. Long**. LIG, NIAID, NIH.

P850 **187.10** Suppression of Aiolos and Ikaros expression by lenalidomide reduces human ILC3−ILC1/NK cell transdifferentiation. **L. Mazzurana, M. Forkel, A. Rao, A. Van Acker, E. Kokkinou, T. Ichiya, S. Almer, C. Höög, D. Friberg and J. Mjösberg**. Karolinska Inst., Sweden, Karolinska Univ. Hosp., Sweden and Uppsala Univ., Sweden.

P848 **187.11** NF-κB-targeted intervention of acetaminophen-induced acute liver injury by benzyl indanone. **J.Y. Song, D-E. Jung, S-J. Jung, S-B. Han and Y. Kim**. Chungbuk Natl. Univ., South Korea and Chungnam Natl. Univ., South Korea.

P849 **187.12** Development of functional mannose binding lectin is delayed in extremely low birth weight infants. **M.M. Dean, G.H. Lopez, H.G. Liley, S.L. Heatley and R.M. Minchinton**. Australian Red Cross Blood Service, Australia, Mater Mothers' Hosp., Australia, South Australian Hlth. and Med. Res. Inst., Australia and Central Queensland Univ., Australia.

P851 **187.13** A host-associated antimicrobial agent exhibits both immunoprotective and immunotherapeutic effects. **M.E. Dawes, C. Xie and C.G. Chitko-McKown**. Western Univ. of Hlth. Sci., Col. of Vet. Med. and US-Meat Animal Res. Ctr., Clay Ctr., NE.

P854 **187.14** Alcohol effects on immune responses of classical pro-inflammatory macrophages. **Y. Hu and M. Yoshimura**. Louisiana State Univ.

P832 **187.15** JUUL E-vapor has less protective effect in a zebrafish model of heart failure compared to nicotine Salt, nicotine agonists, and first-generation ENDS. **X.K. Mai, S. Chow, J. Cameron and S.A. O'Barr**. Western Univ. of Hlth. Sci. Col. of Pharmacy and Western Univ. of Hlth. Sci. Col. of Optometry.

P839 **187.16** The role of the innate immune system in doxorubicin-induced cardiotoxicity. **A. Bhagat and E.S. Kleinerman**. Univ. of Texas MD Anderson Cancer Ctr.

P842 **187.17** IL-1R signaling enhances neutrophil extracellular traps formation and leads to increase lung permeability and hypoxemia in LPS/mechanical ventilation-induced acute lung injury mouse model. **N. Nosaka, C. Martinon, T.R. Crother, M. Arditi and K. Shimada**. Cedars-Sinai Med. Ctr.

P857 **187.18** Bisphenol-A leads to overexpression of estrogen receptors and diminishes protective chemokine responses in a zebrafish model. **D. Walser-Kuntz, T. Tieu, T. Scott and P. Khan**. Carleton Col.

P838 **187.19** Developmental and environmental regulation of lung macrophage immune response. **A. Yamamura, S.J. Lund, O. Lakhdari, M. Sakai, C.K. Glass and L.S. Prince**. Univ. of California, San Diego.

P833 **187.20** ABCG1 deficiency in alveolar macrophage promotes multiwall carbon nanotube-induced pulmonary granulomatous inflammation in mice. **E. Soliman, M. McPeek, A. Malur, D.A. Tokarz, G. Murray, K.M. Gowdy, C. Wingard, M. Fessler, B.P. Barna and M.J. Thomassen**. East Carolina Univ., North Carolina State Univ., Bellarmine Univ. and National Inst. of Envrn. Hlth. Sci.

P845 **187.21** Deciphering liver environmental signaling pathways for Kupffer cell identity. **M. Sakai, T.D. Troutman, J.S. Seidman, Z. Ouyang, N.J. Spann, Y. Abe, K. Ego, C.M. Bruni, J.C.M. Schlachetzki, A. Nott, H. Bennett, J. Chang, B.C.T. Vu, M. Pasillas, V.M. Link, L. Texari, S. Heinz and C.K. Glass**. Univ. of California, San Diego.

P852 **187.22** The cholesterol transporter ABCG1 modulates macrophage polarization in human monocyte-derived macrophages. **D. Sag, D. Unuvar Purcu and M. Altunay**. Izmir Biomedicine and Genome Ctr., Hlth. Sci. Inst. Dokuz Eylul Univ. and Izmir International Biomedicine and Genome Inst., Dokuz Eylul Univ.

P853 **187.23** Neuropilin-2 isoforms regulate distinct functions of tumor-associated macrophages in breast cancer. **A.C. Soloff, R.A. Stanton, N.M. Radio, M. Freilino-Glunt, C. Nasarre, A. Dimou, P. Nasarre, C.E. Denlinger, S. Oesterreich, A.V. Lee, M.T. Lotze, R. Dhupar and R. Gemmill**. Univ. of Pittsburgh, Med. Univ. of South Carolina, Thermo Fisher Scientific, Univ. of Colorado Sch. of Med. and UPMC Hillman Cancer Ctr.

P834 **187.24** Regulatory roles of suppressors of cytokine signaling 1 during type I vs type II macrophage polarization and phenotype determination. **C-E. Lee, H. Jeong and G-Y. Kim**. Sungkyunkwan Univ.

P855 **187.25** miR-222 stimulates M2b macrophage polarization in severely burned mice through the degradation of long noncoding RNA GAS5. **I. Ito, C.C. Finnerty, D.N. Herndon, M. Kobayashi and F. Suzuki**. Univ. of Texas Med. Br.

P841 **187.26** Functional characterization of a novel myeloid cell-specific lncRNA U90926. **S. Sabikunnahar, S. Varnum, J.J. Bivona, R. Cooper and D. Krementsov**. Univ. of Vermont.

P856 **187.27** Trim33 plays an indispensable role in the differentiation and functions of dendritic cells. **C.V. Rathinam**. Univ. of Maryland Sch. of Med.

P858 **187.28** Chronic viral infection induces metabolic reprograming of plasmacytoid dendritic cells. **T.T. Greene, Y. Jo and E. Zuniga**. Univ. of California, San Diego.

P831 **187.29** Loss of miR-146a skews the dendritic cell milieu in favor of CD8a+CD103+ cross-presenting migratory dendritic cells and reduces production of IL-27. **P.A. Flynn and E.F. Lind**. Oregon Hlth. & Sci. Univ.

P859 **187.30** Protective effect of a brown algae, *Sargassum horneri* on particulate matter-induced oxidative stress and inflammation in MLE-12 cells. **H.J. Kim, K.H.I.N.M. Herath, A. Kim, S.P. Mihindukulasooriya, M. Ko, Y. Jeon, Y. Jee and H.J. Kim**. Jeju Natl. Univ.

P860 **187.31** *Sargassum horneri* inhibits particulate matter-induced apoptotic cell death in splenocytes. **Y. Jee, A. Kim, K.H.I.N.M. Herath, H.J. Kim, S.P. Mihindukulasooriya, M-O. Ko and Y-J. Jeon**. Jeju Natl. Univ.

P843 **187.32** Clinical manifestations following intramuscular exposure of mice to a lethal dose of ricin. **A. Sapoznikov, R. Falach, Y. Gal, Y. Evgy, C. Kronman and T. Sabo**. Israel Inst. for Biological Res., Israel.

P861 **187.33** Myeloid CFTR loss-of-function causes persistent neutrophilic inflammation in cystic fibrosis. **G. Wang and H.P. Ng**. Louisiana State Univ. Hlth. Sci. Ctr.

P862 **187.34** NLRP12 regulates intestinal inflammation and tumorigenesis independent of gut microbiota. **S. Khan and H. Zaki**. Univ. of Texas Southwestern Med. Ctr.

P863 **187.35** Structure of human ferroportin (SLC40A1) inferred from mass spectrometry restraints. **C. Parry, G. Vazquez-meves, A. Ivanov, X. Lin, N. Kumari and S. Nekhai**. Howard Univ.

P864 **187.36** Dynamic interaction of PSGL-1 with the T cell receptor regulates the extent of T cell activation. **D.C. Otero, J. Ma and L. Bradley**. Sanford Burnham Prebys Med. Discovery Inst.

188. B CELLS AND THE CELLS THAT HELP

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P866 **188.1** Protein kinase CK2 drives plasma cell differentiation. **H. Wei, W. Yang, Z. Yan, H. Qin and E. Benveniste**. Univ. of Alabama at Birmingham.

P875 **188.2** IRF4 regulates the proliferative response during B cell differentiation in vivo. **D. Patterson, C. Scharer, T. Mi, S.L. Hicks, Q. Zhang and J.M. Boss**. Emory Univ. Sch. of Med. and Emory Univ. Sch. of Publ. Hlth.

P874 **188.3** B cell activation and differentiation employ mTORC1 rather than Xbp1 to initiate distinct segments of the unfolded protein response prior to antibody secretion. **B.M. Gaudette, D.D. Jones, J.R. Wilmore and D. Allman**. Perelman Sch. of Med., Univ. of Pennsylvania.

P1200 **188.4** E3 ubiquitin ligase Fbw7 regulates B cell survival and T cell-independent responses. **P. Ramezani-Rad, C.R. Leung, J.R. Apgar and R.C. Rickert**. Sanford Burnham Prebys Med. Discovery Inst.

P877 **188.5** IL-21-dependent Tbet+ B cells require Bcl6 and receive delayed help from non-Tfh T cells. **R.C. Levack, M. Popescu and G. Winslow**. Upstate Med. Univ.

P870 **188.6** Extracellular ST6Gal-1 calibrates B cell IgG production by cell non-autonomous extrinsic sialylation. **E.E. Irons, P.R. Punch and J.T.Y. Lau**. Roswell Park Cancer Inst.

P876 **188.7** IL-12 signaling drives the differentiation and function of a T_H1-derived T_{FH1}-like cell population. **M.D. Powell, K. Read, B. Sreekumar and K.J. Oestreich**. Virginia Polytechnic Inst. and State Univ. and Biomed. and Vet. Sci. Grad. Program, Virginia-Maryland Col. of Vet. Med.

P868 **188.8** Investigating transcriptional regulators of memory T follicular helper cells. **T. Deng, L. Shaw, B. Yu, Q.P. Nguyen, S.M. Hedrick and A.W. Goldrath**. Univ. of California, San Diego.

P869 **188.9** LSD1 epigenetically represses NF-κB target genes to regulate marginal zone B cell development. **R.R. Haines, C.D. Scharer and J. Boss**. Emory Univ.

P865 **188.10** B cell recruitment to the intestine critically depends on GATA3- and RORgt-mediated development of NKp46 negative innate lymphoid cells. **M. Zheng, K. Mao, D. Li, D. Fang, J. Lyu and J. Zhu**. NIAID, NIH.

Today, Sunday, May 12, is the last day to attend an Exhibitor Workshop.

P879 **188.11** The class II peptide editor, H2-M, affects the development and function of B-1 cells. **D. Ghosh, X. He, M.E. O'Mara, A.B. Kantor, D. Sengupta, Y. Yang, L.C. Eisenlohr, P.E. Jensen, L.A. Herzenberg and E.D. Mellins**. Stanford Univ. Sch. of Med., Univ. of Utah and Perelman Sch. of Med., Univ. of Pennsylvania.

P867 **188.12** MALAT1 is essential for A-NHEJ pathway choice during B cell immunoglobulin class switch recombination. **J. Zhao, Y. Hu and J. Lin**. Cleveland Clin. and Case Western Reserve Univ.

P871 **188.13** Immune complexes gener+X6293ate PD1^{int} CD4^{+} T cells which are Bcl6^{+}IFN-γ^{+} unlike exhausted PD1^{high} cells. **A.K. Chauhan**. Saint Louis Univ.

P872 **188.14** The E3 ligase VHL promotes the differentiation of follicular helper T cells through glycolytic-epigenetic pathways. **Y. Zhu, Y. Zhao, D. Aki and Y-C. Liu**. Sch. of Life Sci., Tsinghua Univ., China and Sch. of Med., Tsinghua Univ., China.

P873 **188.15** H3K27me3-specific demethylases modulate B cell development and differentiation. **A. Kania, C.D. Scharer, M.J. Price, R.R. Haines, L-E. Alexander-George and J. Boss**. Emory Univ.

P878 **188.16** The role of the von-Hippel Lindau gene in osteocytes on B lymphocyte maturation and activation. **B.J. Chicana and J.O. Manilay**. Univ. of California, Merced.

P1201 **188.17** Activation of aryl hydrocarbon receptor with structurally diverse ligands represses class switch to immunoglobulin A. **A.B. Costa, A.L. Hirsch and G.K. DeKrey**. Georgia Inst. of Technol. and Univ. of Northern Colorado.

P1202 **188.18** Production of qualitatively different antibodies by T-bet+ IgM memory cells and plasmablasts. **R.E. Lange, R. Levack, R. King and G. Winslow**. Syracuse Univ., Upstate Med. Univ. and Univ. of Alabama, Birmingham.

P1203 **188.19** Elucidating the nature of long-lived plasma cell precursors. **G.K. Manakkat Vijay, A.S. Chawla and H. Singh**. Cincinnati Children's Hosp. Med. Ctr.

189. CD8^{+} T CELL HOMEOSTASIS AND MEMORY

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P1206 **189.1** Microbiota-derived butyrate promotes cellular metabolism and memory potential of antigen-activated CD8^{+} T cells. **S. Bedoui, K. Binger, K. Kallies, S.J. Turner, M. McConville, T. Gebhardt and A. Bachem**. Univ. of Melbourne, Australia.

P1216 **189.2** Microbial exposure expands a Ly6C^{+} subpopulation of long lived naive CD8 T cells with a rapid effector function via type I intereferons. **M. Jergovic and J. Nikolich-Zugich**. Univ. of Arizona.

P1212 **189.3** PRMT5-mediated arginine methylation controls the strength of signaling via γc-family cytokines required for T cell maintenance. **M. Inoue, K. Okamoto and H. Takayanagi**. Univ. of Toyko, Japan.

P1213 **189.4** STAT1 restrains peripheral naive CD8^{+} T cell responsiveness to homeostatic cytokines by regulating mTORC1 signaling. **Y-C. Kye, C-H. Yun and J-H. Cho**. Acad. of Immunology and Microbiology, Inst. for Basic Sci., South Korea and Seoul Natl. Univ., South Korea.

P1204 **189.5** NFAT1 and NFAT2 differentially regulate CTL differentiation upon acute viral infection. **T. Xu, A. Keller and G.J. Martinez**. Rosalind Franklin Univ. of Med. and Sci.

P1211 **189.6** Themis integrates T cell receptor and cytokine signals in CD8^{+} T cells. **N.R.J. Gascoigne, J. Brzostek, X. Zhao, G. Fu, E.W. Chen and M. Mehta**. Natl. Univ. of Singapore, Singapore and Xiamen Univ., China.

P1210 **189.7** Identity of recirculating T cells in humans. **M. Buggert, S. Nguyen, S. Darko, A. Ransier, D. Douek, A. Bar-Or, N.K. Björkström, Y. Dori, M.G. Itkin and M.R. Betts**. Karolinska Inst., Sweden, Perelman Sch. of Med., Univ. of Pennsylvania, VRC, NIAID, NIH, Univ. of Pennsylvania, Karolinska Inst., Karolinska Univ. Hosp., Sweden and Children's Hosp. of Philadelphia, Penn Medicine, Hospital of the Univ. of Pennsylvania.

P1217 **189.8** STAT4 programs CD103^{-} tissue-resident memory cells during infection. **T. Bergsbaken, H. Fung, N. Wilson and M. Teryek**. Rutgers New Jersey Med. Sch.

P1205 **189.9** Quantifying the tissue-resident immune system. **S. Wijeyesinghe, L.K. Beura, J.M. Stolley, P.C. Rosato, M. Pierson and D. Masopust**. Univ. of Minnesota.

P1207 **189.10** Hypoxia and TGF-β1 induce tissue resident memory phenotype cells from human peripheral blood T cells in vitro. **F. Hasan, R. Shaw, J. Wang and C. Yee**. Univ. of Texas MD Anderson Cancer Ctr.

P1215 **189.11** TCR signal strength and antigen affinity independently modulate CD8^{+} memory T cell development. **S. Solouki, A. August and W. Huang**. Cornell Univ.

P1218 **189.12** Long-lived effector CD8^{+} T cells are transcriptionally and functionally distinct from effector memory cells. **H. Nguyen, C. Toma, K. Omilusik, A.W. Goldrath and J.J. Milner**. Univ. of California, San Diego.

P1208 **189.13** Dividing and non-dividing subsets of CD8 memory T cells differentially experience the homeostatic cytokines in the organs. **K.H. Kim, U-H. Ha and Y.W. Jung**. Korea Univ., South Korea.

P1209 **189.14** Distinct lymph node entry efficiencies for CD8+ and CD4+ T cells are eliminated during malnourishment. **M.R. Gubbels Bupp, S. Goulmamine, D. Gibson, A. Little, S. Murphy, K. Patrick and T. Thoner**. Randolph-Macon Col.

P1214 **189.15** A single administration of Fc-fused recombinant human IL-7 induces expansions of T lymphocytes in healthy adult volunteers. **S. Kim, D-H. Choi, M.K. Heo, B.H. Lee, S-H. Yang, Y.C. Sung, H. Lee, E-C. Shin and S-H. Park**. KAIST, South Korea, NeoImmuneTech, Inc., Genexine, Inc., South Korea, Grad. Sch. of Convergence Sci. and Tech., Seoul Natl. Univ., South Korea and Grad. Sch. of Med. Sci. and Engin., KAIST, South Korea.

P1219 **189.16** DOCK8 differentially regulates STAT3 and STAT5 nuclear translocation to maintain T-cell immune tolerance. **S.S. Saha, A.K. Singh, A. Zielinska-Kwiatkowska, G. Bhise, J. Woods and M. Oukaa**. Seattle Children's Res. Inst.

P1220 **189.17** Expression of a core gene module of anergy governs maternal CD8+ T cell hypofunction after pregnancy. **P. Porrett, R. Xu and E.J. Wherry**. Perelman Sch. of Med., Univ. of Pennsylvania.

P1221 **189.18** Single cell multiomic analysis of chronically stimulated T cells displaying hallmarks of T-cell exhaustion. **M. Nakamoto, M. Corselli, I. Taylor and S. Saksena**. BD Biosciences and FlowJo, LLC.

Have you completed and dropped off your Exhibit Hall Passport? They are due today, Sunday, May 12, by 2 PM. Drawing at 3 PM!

190. MICROBIAL, PARASITIC, AND FUNGAL IMMUNOLOGY

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P1223 **190.1** Role of the microbiota in primary lung cancer initiation and progression. **U.D. Rose, M. Vetizou, S. Roy, B. Edwards, M. Peck, L. Smith, A. Robles, C. Harris, S. Difilippantonio and G. Trinchieri**. NCI, NIH and Leidos Biomed. Res., Inc.

P1227 **190.2** Type I interferon confers susceptibility to *Mycobacterium tuberculosis* infection within granulomas of SIV co-infected non-human primates. **J.Y. Phuah**. Univ. of Pittsburgh Grad. Sch. of Publ. Hlth.

P1228 **190.3** Characterization of a potential host-directed therapy against TB in non-human primates. **C.G. Winchell, P.A. Maiello and J.L. Flynn**. Univ. of Pittsburgh Sch. of Med.

P1233 **190.4** β-glucan priming enhances neutrophil Fcγ receptor-mediated antifungal activity during oral mucosal infection. **M. Swidergall, N.V. Solis, Z. Wang, Q.T. Phan, M.E. Marshall, M.S. Lionakis, E. Pearlman and S.G. Filler**. Univ. of California, Los Angeles, Univ. of California, Irvine and NIAID, NIH.

P1234 **190.5** The role of NKT cells in systemic methicillin-resistant *Staphylococcus aureus* infection. **S. Genardi, L. Cao, L. Visvabharathy, E. Berdyshev and C-R. Wang**. Feinberg Sch. of Med., Northwestern Univ. and National Jewish Hlth.

P1236 **190.6** Pathogen evasion of intracellular complement in macrophages enables systemic colonization and bacteremia. **M. Valeri, L.A. Knodler, J. Behnsen, P. Sharma, L. Chung, J. Cundiff, E. Sanchez-Lopez, W. Pandori, M. Lodoen, P. Martin, R. Edwards, M. Karin, J. Celli, K. Cadwell, S-P. Nuccio and M. Raffatellu**. University of California, San Diego, Washington State Univ., University of California, Irvine, New York Univ. Sch. of Med. and Univ. of California, San Diego.

P1238 **190.7** Characterization of a novel *Plasmodium* virulence factor. **M. Akkaya, A. Bansal, P. Sheehan, L. Miller and S.K. Pierce**. NIAID, NIH.

P1239 **190.8** 12/15-lipoxygenase supports inflammatory cytokine production and PMN recruitment during invasive aspergillosis. **J.J. Mackel, M. Jones and C. Steele**. Univ. of Alabama, Birmingham and Tulane Univ. Sch. of Med.

P1240 **190.9** Trehalose-6-phosphate synthase-deletion in *Cryptococcus neoformans* elicits rapid innate fungal clearance from the lungs with early neutrophil accumulation. **J. Xu, M. Reynolds, X. He, X. Gao, M. Ivey, J. Kolbe, R. Lopez, C. Mechler, J. Perfect and M.A. Olszewski**. Univ. of Michigan Med. Sch. and Duke Univ. Sch. of Med.

P1241 **190.10** Mechanistic investigations of granzyme A-mediated $\gamma_9\delta_2$ T cell TB protective effects. **V. Rasi, M. Xia, D.C. Wood, C.S. Eickhoff and D.F. Hoft**. Saint Louis Univ.

P1242 **190.11** Dynamics of antigen re-exposure to $CD8^+$ T cells during *Toxoplasma gondii* infection. **L. Shallberg, A.T. Phan, D.A. Christian and C.A. Hunter**. Univ. of Pennsylvania.

P1246 **190.12** Induction of a long non-coding RNA, lncRNA-Chr1:1226, by *Cryptosporidium* infection primes intestinal epithelial cells for IFN-γ-mediated host antimicrobial gene transcription. **X-M. Chen, S. Deng, A-Y. Gong, Y. Wang, S-T. Zhang, M. Li, J. Li and N.W. Mathy**. Creighton Univ.

P1248 **190.13** Circulating memory is sufficient for protective immunity to secondary infection with *Chlamydia*. **J.C. Labuda and S.J. McSorley**. Univ. of California Davis.

P1249 **190.14** Infiltrated monocyte and T-cell interaction drives immunopathology in the brain during cryptococcal meningoencephalitis. **J. Xu, M. Ivey, J. Koble, R. Lopez, C. Mechler, L. Neal, P. Williamson, B. Segal and M.A. Olszewski**. Univ. of Michigan Med. Sch. and NIAID.

P1250 **190.15** Lipid talk: endocannabinoids regulate mucosal inflammation following helminth infection. **M.B. Wiley, H. Batugedara, S. Bobardt, D. Argueta, A. Dillman, N.V. DiPatrizio and M.G. Nair**. Univ. of California, Riverside.

P1251 **190.16** *Candida albicans* secrete a small cysteine-rich protein Sel1 to trigger TLR2/4-dependent inflammatory response during invasive infection. **H. Xiao, W. Wang, Z. Deng, T. Li, H. Wu and J. Chen**. Institut Pasteur of Shanghai, China and Chinese Acad. of Sci., China.

P1252 **190.17** CBLB constrains inactivated vaccine-induced $CD8^+$ T cell responses and immunity against lethal fungal pneumonia. **S.G. Nanjappa, S. Mudalagiriyappa, J.S. Fites, M. Suresh and B.S. Klein**. Univ. of Illinois at Urbana-Champaign and Univ. of Wisconsin, Madison.

P1254 **190.18** Neonatal granulocytic myeloid-derived suppressor cells possess phagocytic properties during bacterial infection. **B.G. Seman, J.K. Vance, M.R. Witt and C.M. Robinson**. West Virginia Univ.

P1255 **190.19** Upregulation of neuronal VEGF in experimental cerebral malaria coincides with Dis. severity biomarkers in humans: a novel mechanism of pathophysiology. **C.E. Fain, S. Rana, M.A. Huggins, G.C. Sieck and A.J. Johnson**. Mayo Clinic Grad. Sch. of Biomedical Sci. and Univ. of Minnesota.

P1256 **190.20** Microbial activation of B-cells by pattern recognition receptors contributes to the proinflammatory and profibrotic milieu in patients with idiopathic pulmonary fibrosis. **M. Ali, H. Dasari, V. Van Keulen, A. Egan, T. Peikert and E.M. Carmona**. Thoracic Dis. Res. Unit, Mayo Clin.

P1257 **190.21** Long pentraxin 3 regulates IL-17A mediated immunity to primary and secondary *Leishmania major* infection. **G. Gupta, P. Jia, R. Sharma, R. Zayats, L. Shan, Z. Mou, T. Murooka, A. Soussi-Gounni, C.I. de Oliveira and J.E. Uzonna**. Univ. of Manitoba, Canada and Oswaldo Cruz Fndn., Brazil.

P1258 **190.22** TLR4 abrogates Th1 immune response against *L. infantum* infection through IRF1 and IFN-β-dependent mechanism preventing immunopathology. **L.A. Sacramento, L. Benevides, S. Maruyama, L. Tavares, K. Fukutani, F. Cunha, R. Almeida, J. Silva and V. Carregaro**. Ribeirão Preto Fac. of Med., Univ. of São Paulo, Brazil, Federal Univ. of São Carlos, Brazil and Federal Univ. of Sergipe, Brazil.

P1259 **190.23** Neutrophils transiently harbor *Mycobacterium tuberculosis* and represent a metabolically permissive niche for bacterial growth. **L. Huang and D. Russell**. Cornell Univ.

P1260 **190.24** Gamma delta and natural killer cells in splenocytes of young mice protect immunocompromised mice from death in *Plasmodium chabaudi* infection. **L.B. Richard, M.R. Smith, A.E. Murrray and M.M. Opata**. Appalachian State Univ.

P1261 **190.25** Pulmonary inflammation and Tie2/angiopoietin mediated vascular dysregulation during lethal *Orientia tsutsugamushi* infection. **B.J. Trent, Y. Liang, Y. Xing, M. Esqueda, W. Yang, N-H. Cho, H-I. Kim, Y-S. Kim, T.R. Shelite, J. Cai, J. Sung, D. Bouyer, P. Liu and L. Soong**. Univ. of Texas Med. Branch and Seoul Natl. Univ. Col. of Med.

P1262 **190.26** Agonizing 4-1BB potently promotes humoral immune memory response during experimental malaria. **R. Vijay, A.J. Sturtz and N.S. Butler**. Univ. of Iowa.

P1263 **190.27** Understanding mechanisms of disease tolerance during intestinal helminth infection. **M. Gentile, Y. Li, A. Robertson, G. Fontes, E. Kaufmann, N. Khan, H.M. Munter, M. Divangahi and I.L. King**. McGill Univ., Canada.

P1264 **190.28** STAT3 in T cells regulates protective capacity of hybrid type 1/follicular helper T cells in persistent mouse malaria infection. **R. Stephens, A.L. Dent and V.H. Carpio**. Univ. of Texas Med. Branch and Indiana Univ. Sch. of Med.

P1265 **190.29** Ephrin B receptor tyrosine kinase ligands modulate the germinal center reaction and control humoral immune responses to malaria. **A.C. Olatunde, P.N. Mimche, S.O. Seely, T.P. Stewart and T.J. Lamb**. Univ. of Utah Sch. of Med.

P1266 **190.30** Enterohepatic *Helicobacter* species differ in their effects on colonic inflammation and colitis-associated colon tumorigenesis in mice. **R.R. Alkarkoushi, I. Chatzistamou, Y. Hui, M. Nagarkatti, P. Nagarkatti and T.L. Testerman**. Univ. of South Carolina Sch. of Med.

P1267 **190.31** Mechanisms controlling Cryptococcus intracellular parasitism. **P. de Figueiredo, A. Pandey, S-L. Ding, Q-M. Qin, R. Gupta, G. Gomez, F. Lin, X. Feng, L.F. de Costa, S.P. Chaki, M. Katepalli, E. Case, E. Van Schaik, T. Sidiq, O. Khalaf, A. Arenas, K.S. Kobayashi, J.E. Samuel, G. Rivera, R.C. Alaniz, S-H. Sze, X. Qian, W.J. Brown, A. Rice-Ficht, W. Russell and T.A. Ficht**. Texas A&M Hlth. Sci. Ctr., Jilin Univ., China, Leidos Biomed. Res., Inc., Texas A&M Univ., Texas A&M Vet. Med., Cornell Univ., Texas A&M Univ. Hlth. Sci. Ctr. and Univ. of Texas Med. Branch.

P1268 **190.32** Protective role of secreted aspartyl proteinase in murine systemic candidiasis caused by non-albicans *Candida* species. **M. Shukla, S. Alam and S. Rohatgi**. Indian Inst. of Tech., Roorkee, India.

P1269 **190.33** Drug treatment of tuberculosis diminishes but does not abolish the protection against secondary *M. tuberculosis* challenge. **S.K.C. Ganchua, A.M. Cadena, F.F. Hopkins, S. Fortune and J.L. Flynn**. Univ. of Pittsburgh Sch. of Med. and Harvard Sch. of Publ. Hlth.

P1270 **190.34** Ruxolitinib, a selective JAK1/2 inhibitor, for the treatment of serious diseases caused by *Staphylococcus aureus* superantigens. **H. Carnes, B. Mehrkens, M. Stegman and G. Rajagopalan**. Edward Via Col. of Osteo. Med. and Virginia Polytechnic Inst. and State Univ.

P1271 **190.35** OmpV, an outer membrane protein that helps *Salmonella typhimurium* in cell adhesion. **D. kaur and A. Mukhopadhaya**. Indian Inst. of Sci. Educ. and Res., India.

P1272 **190.36** Pre-existing SIV infection decreases cytokine responses by T cells in lung during the early stages of *M. tuberculosis* co-infection. **E.C. Larson, M.A. Rodgers, A.L. Ellis, C.L. Ameel, T.M. Baranowski, A.J. Balgeman, P.A. Maiello, S.L. O'Connor and C.A. Scanga**. Univ. of Pittsburgh Sch. of Med. and Univ. of Wisconsin, Madison.

P1273 **190.37** Pathogenic mechanisms of endothelial damage in severe scrub typhus. **L. Soong, B. Trent, Y. Liang, D.W. Bouyer and J. Sun**. Univ. of Texas Med. Br.

P1276 **190.38** Interplay of Wnt β-catenin pathway and mTORC1 in pathogenesis of *Ehrlichia*-induced sepsis. **M.A. Haloul, A. El Andaloussi and N. Ismail**. Univ. of Illinois at Chicago.

P1277 **190.39** CD4+ T cell lineage commitment in *Mycobacterium tuberculosis* and *Schistosoma mansoni* co-infected individuals from Kisumu, Kenya. **T.A. McLaughlin, J. Khayumbi, J. Ongalo, B. Muchiri, J. Tonui, F. Hayara Odhiambo and C.L. Day**. Emory Univ. and Kenya Med. Res. Inst., Kenya.

P1278 **190.40** Renewal rates of CD4 and CD11b cells in mycobacterial granulomas. **M. Herbath, S. Marcus, Z. Fabry and M. Sandor**. Univ. of Wisconsin, Madison.

P1279 **190.41** Deciphering multicellular microenvironment of tuberculosis lung granulomas associated with bacterial control using high-throughput single-cell mRNA sequencing. **H.P. Gideon, T.K. Hughes, M.H. Wadesworth, S.M. Fortune, A.K. Shalek and J.L. Flynn**. Univ. of Pittsburgh Sch. of Med., Inst. of Med. Engin. and Sci., MIT, MIT and Harvard and Harvard Sch. of Publ. Hlth.

P1300 **190.42** Resistance to inflammasome-mediated nitric oxide production is involved in diffuse cutaneous *Leishmaniasis*. **G.F.S. Quirino, L.L. Santos, V.M. Borges and D.S. Zamboni**. Ribeirao Preto Med. Sch., Brazil and Oswaldo Cruz Fndn., Brazil.

P1301 **190.43** Alveolar macrophage maturation is required for efficient killing of GBS in the lung. **S.J. Lund, K.A. Patras, A. Yamamura, G. Hernandez, O. Lakhdari, V. Nizet and L.S. Prince**. Univ. of California, San Diego.

P1302 **190.44** Wnt4 controls early cDC1 commitment to suppress type 2 immunity. **L-Y. Hung, J.L. Johnson, Y. Ji, D.A. Christian, K.R. Herbine, C.F. Pastore and D.R. Herbert**. Univ. of Pennsylvania Sch. of Vet. Med. and Perelman Sch. of Med., Univ. of Pennsylvania.

P1303 **190.45** Ex vivo analysis of *Plasmodium falciparum*-specific B cell responses to natural malaria infection in children and adults. **C. Hopp, S. Andrews, M. Chambers, D.J. Leggat, B. Traore, S.K. Pierce, A.B. McDermott and P.D. Crompton**. NIAID, NIH and Univ. of Sci., Technique and Tech. of Bamako, Mali.

P1304 **190.46** Exploiting the molecular mimicry of Non-typeable *Haemophilus influenzae* with ketodeoxynonulosonic acid: confusing the bacterium in its own game. **S. Saha, A. Coady, B. Choudhury, X. Chen, S. Ram, V. Nizet and A. Varki**. Sch. of Med., Univ. of California, San Diego, Univ. of California, San Diego, Univ. of California, Davis and UMASS med.

P1305 **190.47** Probiotic exopolysaccharide protects mice from acute *Staphylococcus aureus* bloodstream infection, reducing bacterial burden and limiting inflammation. **W. Paik, F. Alonzo and K.L. Knight**. Loyola Univ. Chicago.

P1306 **190.48** Functional attributes of protective liver CD8 T cells segregate according to specificities induced by *Plasmodium berghei* liver stage antigens. **U. Krzych, N. Althubaiti, A. Pichugin and S.N. Zarling**. WRAIR and Catholic Univ. of America.

P1307 **190.49** Adhesion requirements of methicillin-resistant *Staphylococcus aureus* in bacterial pneumonia and influenza super-infection. **J.A. Grousd, A. Richardson, V. Cooper and J.F. Alcorn**. Univ. of Pittsburgh and Children's Hosp. of Pittsburgh.

P1309 **190.50** Transcriptional profile of CD8+Vα7.2+CD161+ MAITs reveals distinct gene expression compared to CD8 memory T cells. **C.S. Lindestam Arlehamn, M. Pomaznoy, J.G. Burel, R. Kuan, G. Seumois, P. Vijayanand, D.M. Lewinsohn, A. Sette and B. Peters**. La Jolla Inst. for Immunology and Oregon Hlth. & Sci. Univ.

P1310 **190.51** IFN-1 regulates inflammasome activation, HMGB1 translocation, and autophagy in hepatocytes during infection-induced acute liver injury. **S.S. Hussain, A. El Andaloussi, M. Kader, T. Tominello, B. Gordon, M. Scott and N. Ismail**. Univ. of Illinois-Chicago and Univ. of Pittsburgh.

P1314 **190.52** NK cells negatively regulate CD8 T cells to promote immune exhaustion and chronic *Toxoplasma gondii* infection. **J.P. Gigley, D.L. Ivanova and S.L. Denton**. Univ. of Wyoming.

P1316 **190.53** Anti-asialo GM1 treatment during secondary *Toxoplasma gondii* infection is lethal and depletes T cells. **S.L. Denton, D.L. Ivanova and J.P. Gigley**. Univ. of Wyoming.

P1275 **190.54** Production of IL-17A by different subsets of $\gamma\delta$ T cells in response to the commensal *Corynebacterium mastitidis* has distinct requirements for IL-1R and TCR recognition. **X. xu, A. St. Leger, W. Zhu, S.J. Bing, R. Horai, M. Mattapallil and R.R. Caspi**. NEI, NIH and Univ. of Pittsburgh.

P1322 **190.55** CCR5-mediated recruitment of NK cells to the kidney is a critical step for host defense to systemic *Candida albicans* infection. **S.W. Kang, V.G. Tran, N.Z.N. Nguyen, S. Lee, J. Kim, H.J. Kim, J.S. Lee, H.R. Cho and B. Kwon**. Ulsan Univ. Hosp., Sch. of Med., Republic of Korea and Sch. of Biological Sci., Univ. of Ulsan, Republic of Korea.

P1323 **190.56** *Mycobacterium tuberculosis* surface antibody breadth responses in high endemic setting: a potential to confirm disease states using ELISA, Addis Ababa, Ethiopia. **A.G. Yeshanew, T. Wondemagegn, M. Negash, M. Genetu, M. Zewdie, L. Wassie and W. Admasu**. St. Paul Hosp. Millennium Med. Col., Univ. of Gondar, Ethiopia and Armuer Hansen Res. Inst., Ethiopia.

P1324 **190.57** The *Mycobacterium tuberculosis* PE11 induces L-arginine-polyamine biosynthesis pathway and mediate bacillary survival in macrophages. **N.R. Rameshwaram, P. Singh and S. Mukhopadhyay**. Centre for DNA Fingerprinting & Diagnostics, India.

P1325 **190.58** Eosinophils in tick transmitted ehrlichial infection. **T.B. Saito and D.H. Walker**. Univ. of Texas Med. Br.

P1326 **190.59** Isolation of a 31 kDa protein in *Angiostrongylus cantonensis* from Hawaii and its comparative diagnostic efficacy to the 31 kDa protein from Thailand and crude antigen from Hawaii. **S.I. Jarvi, K.A. Snook, K. Cannoles, S. Quarta, P. Eamsobhana, L. Shepherd, Y. Tagami, L. Kaluna, K. Howe, S. Jacquier, C. Niebuhr and D. Bicakci**. Univ. of Hawaii, Hilo, Mahidol Univ. and USDA, APHIS.

P1327 **190.60** Polyfunctional $CD4^+$ T cells specific for *Trypanosoma cruzi* can be restored after in vitro treatment with IL-7 and IL-27. **M.A. Natale, T. Minning, M.G. Alvarez, B. Lococo, M.C. Albareda, G. Bertocchi, R. Tarleton and S. Laucella**. Natl. Inst. of Parasitology, Argentina, CTEGD, Univ. of Georgia and Eva Peron Hosp., Argentina.

P1328 **190.61** Abstract: Demonstration of TLR response in *O. mykiss* by the bacterial 23S rRNA motif. **K. Head, K.S. Kobayashi, M.F. Criscitiello and S. Vijayan**. Texas A&M Univ. and Texas A&M Hlth. Sci. Ctr.

P1229 **190.62** Indoleamine 2,3-dioxygenase during acute toxoplasmosis and the hyporesponsiveness of splenocytes. **C.M. Ufermann, S. Eller, A. Domröse, K. Spekker-Bosker and W. Däubener**. Heinrich-Heine Univ., Dusseldorf, Germany.

P1274 **190.63** mTORC1-mediated macrophage polarization into M1 contributes to *Ehrlichia*-induced sepsis. **A. El Andaloussi, M.A. Haloul, M. Kader, T. Tominello, J.Z. Wells and N. Ismail**. Univ. of Illinois at Chicago and Univ. of Pittsburgh.

P1230 **190.64** Porphyromonas gingivalis promotes colorectal cancer development by regulating NLRP3 inflammasome signaling. **Z. wang, X. Wang and Y. Jia**. Stomatological Hosp. of Sun yat-sen Univ., China.

P1231 **190.65** Gene expression profiling of TRIM family in individuals with latent versus active tuberculosis and reveals potential biomarkers for diagnosis. **C. Li**. Beijing Chest Hosp., Capital Med. Univ., China.

P1232 **190.66** *Mycobacterium tuberculosis* enhances macrophage P-glycoprotein (MDR-1) expression and activity to promote intracellular survival. **M. Rajaram, Q. Wu, A. Hossfeld, A. Gerberick, N. Saljoughian, C. Tiwari, C. Tiwari and C. Tiwari**. Ohio State Univ.

P1308 **190.67** The increased permeability and inflammatory response of porcine intestinal epithelial cells caused by *Escherichia coli* and *Salmonella enterica Typhimurium* infections are mitigated by bovine colostrum. **M. Blais, M. Bouchard, V. Touchette, C. Asselin and M. Lessard**. Agr. and Agri-Food Canada, Canada and Univ. of Sherbrooke.

P1235 **190.68** Adherence of local isolates of Candida species to vaginal epithelial cells of apparently healthy and HIV-infected women in Nigeria, and pro-inflammatory cytokines response in a mouse model. **F.E. Emele and E.C. Anieto**. Nnamdi Azikiwe Univ., Nigeria.

P1312 **190.69** Aging impairs the cellular immune response to acute *C. difficile* infection. **L. Abernathy Close, M. Dieterle and V. Young**. Univ. of Michigan.

P1311 **190.70** Identification and characterization of *Escherichia coli* genes associated with grazing resistance to the social amoeba *Dictyostelium discoideum*. **M. Snyder, M. Perez-Vazquez, D. Johnson and D.A. Rasko**. Towson Univ. and Univ. of Maryland Sch. of Med.

P1313 **190.71** Mosaic response of T cells to commensal bacteria derived polysaccharide. **C.A. Alvarez, M.B. Jones and B.A. Cobb**. Case Western Reserve Univ. Sch. of Med.

P1315 **190.72** NKp46+ NK cells regulate brain CD4+ T cells to promote chronic *Toxoplasma gondii* infection. **J.P. Gigley, D.L. Ivanova and S.L. Denton**. Univ. of Wyoming.

P1317 **190.73** The IL-12- and IL-23-dependent NK-cell response is essential for protective immunity against secondary *Toxoplasma gondii* infection. **S.L. Denton, D.L. Ivanova, T. Mundhenke and J.P. Gigley**. Univ. of Wyoming.

P1318 **190.74** Innate and adaptive immune interactions in *Coccidioides* infection. **K.K. Hoyer and A. Diep**. Univ. of California, Merced.

P1319 **190.75** ICOS expression is not required for memory T cell formation or maintenance, but does promote Tfh cell differentiation and the humoral response after secondary *Plasmodium chabaudi chabaudi* AS infection. **L.E. Latham, D.J. Wikenheiser and J.S. Stumhofer**. Univ. of Arkansas for Med. Sci. and Univ. of Pittsburgh.

P1222 **190.76** The role of neutrophils in *Pseudomonas aeruginosa chronic suppurative otitis media.* **K.M. Khomtchouk, A. Kouhi and P. Santa Maria**. Stanford Univ. Sch. of Med.

P1320 **190.77** Incorporation of genetic diversity provides protection from cerebral malaria in *Mus musculus*. **D. Cornwall and B.D. Evavold**. Univ. of Utah and Univ. of Utah, Dept. of Pathology.

P1321 **190.78** Host resistance to pulmonary *Mycobacterium tuberculosis* infection requires CD153 expression. **T.W. Foreman, M. Sallin, K.D. Kauffman, C. Riou, E. Du Bruyn, S. Sakai, S. Hoft, C. Nelson, T. Myers, P. Gardina, A. Sher, R. Moore, T. Wilder-Kofie, I.N. Moore, A. Sette, C.S. Lindestam Arlehamn, R. Wilkinson and D.L. Barber**. NIAID, NIH, NEI, NIH, Univ. of Cape Town, South Africa and La Jolla Inst. for Allergy and Immunology.

P1237 **190.79** Tuberculosis boosts HIV-1 production by macrophages through IL-10/STAT3 dependent tunneling nanotube formation. **G. Lugo, S. Souriant, L. Balboa, M. Dupont, K. Pingris, D. Kviatcovsky, C. Cougoule, C. Lastrucci, A. Bah, R. Gasser, R. Poincloux, B. Raynaud-Messina, T. Al Saati, S. Inwentarz, S. Poggi, E.J. Moraña, P. González-Montaner, M. Corti, B. Lagane, I. Vergne, C. Allers, D. Kaushal, M. Kuroda, M. Sasiain, O. Neyrolles, I. Maridonneau-Parini and C. Verollet**. Inst. de Pharmacologie et de Biol. Structurale, France, Inst. of Exptl. Med.-CONICET, Argentina, institut de pharmacologie et de biologie structurale (IPBS), Ctr. for Genomic Regulation, Ctr. de Physiopathologie de Toulouse Purpan, France, INSERM/ UPS/ENVT, Inst. de Tisioneumonologia ű Raúl F. Vaccarezza Ć, Argentina, Division de SIDA, Hospital de Infecciosas Dr. F.J. Muñiz, Argentina, Tulane Natl. Primate Res. Ctr. and Univ. of California, Davis.

P1243 **190.80** Infection of the spleen by *Chlamydia muridarum* following per-vaginal inoculation causes splenomegaly and is essential for its dissemination into the gastrointestinal tract. **N. Shillova, S.E. Howe and V.H. Konjufca**. Southern Illinois Univ. Carbondale.

P1244 **190.81** Role of the protein CagA from *Helicobacter pylori* in the modifications of the human B lymphocyte cytoskeleton. **R. Cervantes, Z. Piedra-Quintero, C. Sandoval-Montes, M. Amieva, J. Torres-López, L. Santos-Argumedo and J.L. Maravillas-Montero**. UNAM, Mexico, The Ohio State Univ., ENCB, IPN, Mexico, Stanford Univ., IMSS, Mexico and CINVESTAV-IPN, Mexico.

P1245 **190.82** B7x expression on the bronchial epithelium delays CD4 T cell priming after *Mycobacterium tuberculosis* infection. **S. Sakai, K.D. Kauffman, O. Kamenyeva, X. Zang and D.L. Barber**. NIAID, NIH and Albert Einstein Col. of Med.

P1247 **190.83** Induction of inflammatory responses in splenocytes by exosomes released from intestinal epithelial cells following *Cryptosporidium parvum* infection. **X-M. Chen, Y. Wang, Y. Shen, H. Liu, J. Yin, S-T. Zhang, A-Y. Gong, X. Chen, S. Chen, N.W. Mathy and J. Cao**. Creighton Univ. and Chinese Ctr. for Dis. Control and Prevention, China.

P1224 **190.84** TcdB-specific plasma cell and memory B cell responses in recurring *Clostridiodes difficile* infection-associated disease. **S. Amadou Amani, T. Shadid, J.D. Ballard and M. Lang**. Univ. of Oklahoma Hlth. Sci. Ctr.

P1253 **190.85** *Moringa oleifera* treatment induces T-cell activation in *Plasmodium chabaudi* infection. **J. Pilotos, N.C. Mowa and M.M. Opata**. Appalachian State Univ.

P1225 **190.86** *Mycobacterium tuberculosis* extracellular vesicles induce the formation of granuloma-like structures in an in vitro model. **I. Wong-Baeza, V.G. García Paredes, M. Silva-Miranda, B.P. Ruiz-Sánchez, J. Castañeda-Casimiro, A. Hernández-Solis, R. Cicero-Sabido, J. Serafín-López, S. Estrada-Parra and I. Estrada-García**. Instituto Politécnico Nacional, Mexico, Universidad Nacional Autónoma de México, México and Hospital General de México "Dr. Eduardo Liceaga", Mexico.

P1226 **190.87** Lymphotoxin β receptor: a crucial role in *Toxoplasma gondii* infection. **A. Wichert, U. Sorg, D. Degrandi and K. Pfeffer**. Heinrich-Heine Univ., Duesseldorf, Germany.

191. GUT MICROBIOTA AFFECTS ON HOST IMMUNITY

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P1329 **191.1** The gut microbiome can contribute to colon tumor susceptibility via an effect on $CD8^+$ T cell responses. **A.I-W. Yu, S. Ho, J. Chen, C. Koumpouras, L. Zhao, P.D. Schloss, K.A. Eaton and G.Y. Chen**. Univ. of Michigan and Univ. of Michigan Med. Sch.

P1330 **191.2** The role of oral pathobionts in the pathogenesis of gastrointestinal inflammation. **N. Kamada**. Univ. of Michigan.

P1331 **191.3** Sensing fungal dysbiosis by gut-resident $CX3CR1^+$ mononuclear phagocytes aggravates allergic airway disease. **X. Li, I. Leonardi, A. Semon, I. Doron, I.H. Gao, G.G. Putzel, Y. Kim, H. Kabata, D. Artis, W.D. Fiers, A.E. Ramer-Tait and I. ILIEV**. Weill Cornell Med. Col. and Univ. of Nebraska, Lincoln.

P1332 **191.4** Microbiota-derived butyrate limits the autoimmune response by promoting follicular regulatory T cells. **D. Takahashi, N. Hoshina, J.M. Clarke and K. Hase**. Keio Univ. Fac. of Pharmacy, Japan and CSIRO Food and Nutritional Sci., Australia.

P1333 **191.5** Toll-like receptor 2/IL-1β signaling is required for sensing and responding to a commensal bacterium at the ocular surface. **W. Zhu, A. St. Leger, F. Almaghrabi, X. Xu and R. Caspi**. NIH.

P1334 **191.6** Increased duration of antibiotic treatment progressively alters gut microbiota and revokes protection from ocular autoimmunity. **R.S. Salvador, R. Horai, Y. Jittayasothorn, J. Tang, C. O'Huigin, V. Thovarai, W. Yuan and R. Caspi**. NEI, NIH and NCI, NIH.

P1335 **191.7** Metabolic targeting of microbiota-reactive CD4 T memory cells as an immunotherapy for inflammatory bowel disease. **Q. Zhao, L.W. Duck and C.O. Elson**. Univ. of Alabama, Birmingham, Sch. of Med.

P1336 **191.8** Control of mucosal barrier functions and gut microbiome homeostasis by DUSP6 in colitis. **C-Y. Kao, C-S. Chang, Y-C. Liao, C-T. Huang, J-W. Ruan, C-M. Lin, T-H. Tan and Y-C. Liao**. Natl. Hlth. Res. Inst., Taiwan, Taiwan and Natl. Cheng Kung Univ., Taiwan.

P1337 **191.9** Functional characterization of the enteric animal virome. **S. Dallari, T. Heaney, A. Rosas and K. Cadwell**. New York Univ. Sch. of Med.

P1338 **191.10** Effect of sodium butyrate supplementation on the gut microbiome during colorectal cancer. **H.R.D. Alrafas, B.P. Busbee, P. Nagarkatti and M. Nagarkatti**. Univ. of South Carolina Sch. of Med.

P1339 **191.11** CD160-HVEM signaling in intestinal epithelial cells modulates gut microbial homeostasis. **G-Y. Seo, J-W. Shui, Z. Mikulski, Q. Wang, D. Takahashi, D.A. Giles, H. Iwaya, A. Sethi, P-H. Kim, H. Cheroutre and M. Kronenberg**. La Jolla Inst. for Immunology and Kangwon Natl. Univ.m, South Korea.

P1341 **191.12** Cytokine mediated control of microbiota and inflammation in atherosclerosis. **E. Koltsova, I. Peshkova, A. Dzutsev, T. Aghayaev, S. Hazen, G. Trinchieri and A. Fatkhullina**. Fox Chase Cancer Ctr., NCI, NIH and Cleveland Clin.

P1342 **191.13** Zinc supplementation modulates T helper 17 cells via the gut microbiome. **S.R. Gordon and S. Vaishnava**. Brown Univ.

P1343 **191.14** Oral administration of *Lactococcus lactis* displayed influenza neuraminidase and ectodomain of matrix protein 2 induce strong mucosal and systemic immune responses in chickens. **A. Lahiri and A.I. Mallick**. Indian Inst. of Sci. Educ. and Res. Kolkata, India.

P1344 **191.15** Microbiota metabolites SCFA stimulate epithelial migration to promote wound healing through MFGE8 and PAK1. **A.J. Bilotta, C. Ma, X. Huang, W. Yang, S. Yao and Y. Cong**. Univ. of Texas Med. Br.

P1340 **191.16** Intestinal IL-17R signaling controls liver inflammation by constraining microbiome-induced TLR9 signaling and IL-18 production. **P. Castillo, P. Kumar, T.W. Hand and J.K. Kolls**. Univ. of Pittsburgh Sch. of Med. and Stony Brook Univ.

P1345 **191.17** Bacteria in human intestine contribute to mucosal immune function in utero. **E. Rackaityte, J. Halkias, E.M. Fukui, V. Mendoza, E.D. Crawford, K. Fujimura, T. Burt and SusanV. Lynch**. Univ. of California, San Francisco and Chan Zuckerberg Biohub.

P1346 **191.18** Short- and long-term impact of prebiotic supplementation during infancy on immune activity in Wistar rats. **M.P. Jeffrey, S.T. Clarke, N. Krysa, S.P.J. Brooks, M.L. Kalmokoff, J. Green, F. Matias and J.M. Green-Johnson**. Univ. of Ontario Inst. of Technol., Canada, Univ. of Alberta, Canada, Hlth. Canada, Canada and Agr. and Agri-Food Canada, Canada.

192. IMMUNITY DURING INTESTINAL DISEASE

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P1347 **192.1** IL-17 receptor and IL-22 receptor signaling in *Citrrobacter rodentium* infection. **Y. Matsunaga, A. Wanek, K. Song, C. Flemington, T. Clark, J. Bitoun and J. Kolls**. Tulane Univ. Sch. of Med.

P1348 **192.2** Osteopontin promotes survival of intestinal intraepithelial lymphocytes and protects against colitis. **A. Nazmi, M.J. Greer, K.L. Hoek, M.B. Piazuelo, H-H. Weitkamp and D. Olivares-Villagomez**. Vanderbilt Univ. Med. Ctr.

P1349 **192.3** Ulcerative colitis-associated *E. coli* pathobionts potentiate colitis in susceptible hosts. **H. Yang, H.C. Mirsepasi-Lauridsen, C. Struve, J.M. Allaire, E. Bosman, A. Sivignon, W. Vogl, C. Ma, G. Reid, X. Li, A.M. Petersen, K. Jacobson, S. Gouin, N. Barnich, H. Yu, K.A. Krogfelt and B.A. Vallance**. Univ. of British Columbia, Canada, Statens Serum Inst., Denmark, Clermont Univ., France., Lerner Res. Inst., Hvidovre Univ. Hosp., Denmark and LUNAM Univ., France.

P1350 **192.4** Enhancement of gut barrier function by microbial metabolite, urolithin A via AhR-Nrf2 dependent pathways in IBD. **V.R. Jala, R. Singh, S. Chandrashekarappa, S.R. Bodduluri, B.V. Becca, B. Hegde, N. Kotla, A.A. Hiwale, T. Saiyed, P. Patel, M. Vijay-Kumar, M. Langille, G.M. Douglas, G. Dryden, X. Cheng, E. Rouchka, S.J. Waigel, H. Alatassi, H-G. Zhang, B. Haribabu and P.K. Vemula**. Univ. of Louisville, Univ. of Louisville., Inst. for Stem Cell Biol. and Regenerative Med., India, Centre for Cellular and Molec. Platforms, India, The Univ. of Toledo Col. of Med. and Life Sci. and Dalhousie Univ., Canada.

P1352 **192.5** Identification of novel loci controlling IBD susceptibility utilizing the genetic diversity of wild-derived mice. **K.G. Lahue, J. Crothers, B. Lavoie, Q. Fang, G. Mawe and D. Krementsov**. Univ. of Vermont.

P1353 **192.6** Gut IgA abundance in adult life can protect from DSS colitis even if maternal IgA received in early life is inadequate. **S. Gupta, S. Basu, V. Bal, S. Rath and A. George**. Natl. Inst. of Immunology, India and Weill Cornell Med.

P1355 **192.7** Targeting gut inflammation inhibits alcohol-induced liver disease. **Z. Deng, S. Chu, X. Gu and M. Liu**. Univ. of Louisville.

P1356 **192.8** Lingo3 interacts with TFF2 to control mucosal integrity, type 1 inflammation, and colitic tissue repair. **K. Zullo, Y. Ji, Y. Wei, K. Herbine, N. Maloney, R. Cohen, C. Pastore, M. Somsouk, S. Srivatsa, L-Y. Hung, M. Kohanski, N. Cohen and D. Herbert**. Univ. of Pennsylvania Sch. of Vet. Med., Univ. of California, San Francisco and Perelman Sch. of Med., Univ. of Pennsylvania.

P1357 **192.9** Persistent IL-1b signaling aggravates murine enteropathogen, *Citrobacter rodentium* infection in mice. **B. Yeoh, P. Saha, R.M. Golonka and M. Vijay-Kumar**. Univ. of Toledo Col. of Med. and Life Sci.

P1358 **192.10** Maternal immunoglobulin A protects against the development of necrotizing enterocolitis in preterm infants. **T.W. Hand, K. Gopalakrishna, B.R. Macadangdang, M. Rogers, J.T. Tometich, J. Ji, B.A. Firek, R. Baker, A.H.P. Burr, C. Ma, M. Good and M. Morowitz**. Univ. of Pittsburgh, David Geffen Sch. of Med., UCLA, Univ. of Pittsburgh Sch. of Med., Sch. of Med., Tsinghua Univ., China and Washington Univ., St. Louis.

P1359 **192.11** Gut antibody deficiency in CD19$^{-/-}$ mice results in a spontaneous Celiac-like sprue. **A.D. Mohammed and J.L. Kubinak**. Univ. of South Carolina Sch. of Med.

P1360 **192.12** Indole-3-carbinol prevents murine colitis development via an IL-22-dependent mechanism that regulates anti-microbial peptides and mucus production. **P.B. Busbee, H. Alrafas, N. Dopkins, M. Nagarkatti and P.S. Nagarkatti**. Univ. of South Carolina Sch. of Med.

P1363 **192.13** Mast cells in patients with hereditary α-tryptasemia promote HLA-DR expression and a Th2-polarizing microenvironment in the gastrointestinal tract. **J.F. Shirley, J. Drourr, W.T. Edwards, K. Tuna, L.K. Ryan, A. Alli, Y. Tang and S.C. Glover**. Univ. of Florida.

P1361 **192.14** Depletion of embryonic macrophages impairs vascular development in the murine neonatal small intestine and increases mortality in an experimental model of necrotizing enterocolitis. **E. Managlia, X. Yan and I.G. De Plaen**. Ann and Robert H. Lurie Childrens Hosp. of Chicago.

P1362 **192.15** Intestinal epithelial cells differentiated from iPS cells suppressed bacterial translocation in an organ model of alcohol-induced intestinal epithelial dysfunction. **I. Ito, S. Jacob, S. Suzuki, M. Kobayashi and F. Suzuki**. Univ. of Texas Med. Br. and Univ. of North Texas Hlth. Sci. Ctr.

P1351 **192.16** Chronic immune barrier dysregulation among women with a history of violence victimization. **A. Kohlmeier, L.B. Haddad, T.Z-R. Li, K.A. Brookmeyer, J.M. Baker, C.Y. Chen, E.N. Kersh, M.M. Herbst-Kralovetz, M. Hogben, I. Ofotokun and J.E. Kohlmeier**. CDC, Emory Univ. Sch. of Med. and Univ. of Arizona.

P1354 **192.17** Mapping the generation and fate of Tregs associated with recovery of autoimmune disease. **D.J. Lee and F. Muhammad**. Univ. of Oklahoma Hlth. Sci. Ct.

P1364 **192.18** IFNγand poly(I:C) primed MSCs enhances the therapeutic effects on DSS induced colitis via enhancing indoleamine 2, 3-dioxygenase and inducing regulatory T cell phenotype. **J-Y. Lim, D-B. Ryu, S-E. Lee, G. Park and C-K. Min**. Col. of Med., The Catholic Univ. of Korea, South Korea.

P1365 **192.19** Optimizing steroid administration in murine models of *Citrobacter rodentium*-induced acute phase colitis. **S.T. Clarke, T. Shelton, V. Boras, H. Brumer, C.Q. Wang, D.W. Abbott, X. Xing, R.R.E. Uwiera and G.D. Inglis**. Lethbridge Res. and Develop. Ctr., Canada, Univ. of British Columbia, Canada and Univ. of Alberta, Canada.

P1366 **192.20** Synergy between T-dependent antibodies and IL-10 limits susceptibility to inflammatory bowel disease. **A.E. Landuyt, B.J. Klocke, T.R. Schoeb and C.L. Maynard**. Univ. of Alabama at Birmingham.

P1367 **192.21** Short-term antibiotic treatment immediately after weaning prevents spontaneous ileocolitis. **C.L. De Ciantis, J.C. Jeschke, M.A. Hadiono, J. Ziegelbauer, S. Singh, M. Suchi, N.H. Salzman and C.B. Williams**. Med. Col. of Wisconsin.

193. ADVANCES IN THERAPEUTIC APPROACHES FOR NEUROIMMUNOLOGIC DISEASES

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P1369 **193.1** AS101 ameliorates experimental autoimmune uveitis by regulating Th1 and Th17 responses and inducing Treg cells. **S.J. Bing, I. Shemesh, W.P. Chong, Y. Jittayasothorn, P.B. Silver, B. Sredni and R.R. Caspi**. NEI, NIH, Bar-Ilan Univ., Israel and Sun Yat-sen Univ., China.

P1377 **193.2** *Lactobacillus reuteri* reduces the severity of experimental autoimmune encephalomyelitis in mice by modulating gut microbiota. **Y. Liu, B. He, T.K. Hoang, X. Tian, C.M. Taylor, E.E. Blanchard, M. Luo, M.B. Bhattacharjee, J. Freeborn, S. Park, J. Couturier, J.W. Lindsey, D.Q. Tran and J.M. Rhoads**. Univ. of Texas Hlth. Sci. Ctr., Houston McGovern Med. Sch., Univ. of Texas MD Anderson Cancer Ctr. and Louisiana State Univ. Sch. of Med.

P1379 **193.3** GMCSF-neuroantigen vaccines engender FOXP3$^+$ regulatory T cell responses through low-efficiency self-antigen recognition events integrated through diminished CD40L-CD40 signaling. **C.D. Moorman and M.D. Mannie**. East Carolina Univ.

P1503 **193.4** The cytoplasmic domain of CTLA-4 control autoimmunity via inducing regulatory T cells. **G-R. Kim, S. Lim, J-U. Lee and J-M. Choi**. Hanyang Univ.

P1502 **193.5** Alcohol consumption leads to sex-specific amelioration of disability in a mouse model of multiple sclerosis. **B. Caslin, A. Karmakar, C. Maguire, K. Helmsdoerfer, K. Mohler, S. Kirwin, D. Wylie and E. Melamed**. Univ. of Texas, Austin.

P1371 **193.6** The effect of Chinese herbal medicine compound, CS029, in suppression of dendritic cells and its therapeutic application in experimental autoimmune encephalomyelitis. **Y-C. Song and H-R. Yen**. China Med. Univ., Taiwan.

P1374 **193.7** Non-redundant requirement for CXCR3 signaling for effective treatment of CNS autoimmunity with type I interferon. **J. Chen, W.P. Chong, W. Wang, C. Li, I. Gery and R.R. Caspi**. Sun Yat-sen Univ., China and NEI, NIH.

P1370 **193.8** Identification of markers of relapse in a relapsing-remitting mouse model of multiple sclerosis. **C.A. Chase and T. Forsthuber**. Univ. of Texas, San A.

P1368 **193.9** Efficacies of anti-CD20 antibody and atacicept are differentially impacted by B cell maturation antigen in neuro-autoimmunity. **G. Kumar, R.M. Ko and R.C. Axtell**. Oklahoma Med. Res. Fndn.

P1501 **193.10** Human neural stem cells induce central nervous system specific regulatory T cells from the ex Treg pool and promote repair in models of multiple sclerosis. **S.A. Greilach, L.L. McIntyre, J. Hasselmann, S. Othy, Q. Nguyen, K. Kessenbrock, M.D. Cahalan, M. Blurton-Jones, T. Lane and C.M. Walsh**. Univ. of California, Irvine and Univ. of Utah, Sch. of Med.

P1373 **193.11** Neuroantigen-specific regulatory CD8+ T cell responses as a therapy for relapsing autoimmune demyelinating disease. **A.A. Brate, F.R. Itani, L.L. Pewe, J.T. Harty and N.J. Karandikar**. Carver Col. of Med. Univ. of Iowa.

P1378 **193.12** IL-22 and Reg3γ overexpression affects experimental autoimmune encephalomyelitis severity. **A. Eken, M.F. Yetkin, F.Z. Okus, M. Cakir, M.O. Karayigit, S. Erdem, Y. Haliloglu, M. Oukka, H. Donmez Altuntas, M. Mirza and H. Canatan**. Erciyes Univ., Cumhuriyet Univ. and Univ. of Washington Sch. of Med.

P1500 **193.13** The aryl hydrocarbon receptor as a regulator of CNS autoimmunity. **J. Kenison-White, A. Jhaveri, S. Tezza, D. Nowakowska, D. Sherr and F.J. Quintana**. Boston Univ. Sch. of Med., AnTolRx, Inc. and Brigham and Women's Hosp., Harvard Med. Sch.

P1372 **193.14** Myelin basic protein specific TCR-engineered regulatory T cells from multiple sclerosis patients are suppressive to MBP-specific T effector cells. **A. de Paula Alves Sousa, Y.C. Kim, S. Jacobson and D.W. Scott**. Uniformed Serv. Univ. of the Hlth. Sci. and NINDS, NIH.

P1375 **193.15** Deficiency in B cell maturation antigen reveals gender differences in experimental autoimmune encephalomyelitis. **G. Kumar, R.M. Ko and R.C. Axtell**. Oklahoma Med. Res. Fndn.

P1376 **193.16** Photobiomodulation therapy regulates the production of IL-10 and IFN-γ by peripheral blood mononuclear cells and CD4+ T cells isolated from subjects with multiple sclerosis. **M. Tolentino, C.C. Cho and J-A. Lyons**. Univ. of Wisconsin, Milwaukee.

194. NOVEL TUMOR TARGETS AND THERAPIES

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P1514 **194.1** JAML-CAR—a mechanism of T cell antitumor immunity. **J.M. McGraw, D. Witherden and W.L. Havran**. Scripps Res. Inst.

P1516 **194.2** Butyrophilin 3A1 is a dynamic T cell regulator in ovarian cancer. **K.K. Payne, R. Chaurio Gonzalez, J. Perez Sanz, C.M. Anadon Galindo, S. Biswas, J.A. Mine, A. Perales-Puchalt, E. Tsiganov, T.L. Costich, C.M. Harro, A.K. Marrs, J. Lajoie, K-P. Li, M. Ophir, U. Eskiocak, M. Schmidt, D.I. Gabrilovich and J.R. Conejo-Garcia**. Moffitt Cancer Ctr. and Res. Inst., Wistar Inst. and Compass Therapeutics.

P1524 **194.3** Combination of anti-CD40 and anti-PD1 revert M2 polarization to limit tumor growth in a genetically engineered bladder cancer mouse model. **G. Verdeil, M. Leblond, C. Imbratta and D.E. Speiser**. Univ. of Lausanne, Switzerland.

P1526 **194.4** Inhibition of NK cell-MHCI interactions disrupts immune homeostasis by activation of the IFNγ/IL15 axis resulting in augmentation of anti-tumor immunity. **A.K. Panda and E.M. Shevach**. NIAID, NIH.

P1528 **194.5** T cell intrinsic mechanisms of resistance to PD-1 checkpoint blockade. **M. Krogsgaard, D. Moogk, L. Wang, K. Li, Z. Yuan, J. Weber, I. Osman and C. Zhu**. New York Univ. Sch. of Med., Georgia Inst. of Tech., NYU Med. Ctr. and New York Univ. Med. Ctr.

P1530 **194.6** Virus-specific memory T cells populate tumors and can be repurposed as a tumor immunotherapy. **P. Rosato, S. Wijeyesinghe, M. Stolley, C. Nelson, R.L. Davis, L.S. Manlove, C.A. Pennell, B.R. Blazar, C.C. Chen, M.A. Geller, V. Vezys and D. Masopust**. Univ. of Minnesota.

P1531 **194.7** Low-dose neoadjuvant chemotherapy dominates Ki67$^-$ quiescent tumor dormancy for an effective immunotherapy of breast cancer. **H. Aqbi, C. Coleman, M. Idowu and M. Manjili**. Virginia Commonwealth Univ.

P1533 **194.8** Type I interferon suppresses tumor growth through activating the STAT3-granzyme B pathway in tumor-infiltrating cytotoxic T lymphocytes. **C. Lu, J.D. Klement, M.L. Ibrahim, P.S. Redd, G. Zhou and K. Liu**. Augusta Univ.

P1504 **194.9** The dark side of IL-1: role in prostate cancer progression. **O.O. Udartseva and S.O. Gollnick**. Roswell Park Cancer Inst.

P1505 **194.10** Increased activated platelet binding to T cells in lung cancer patients is correlated with history of thrombosis. **C.K. Meikle, A. Meisler, P. Garg, C.A. Kelly, J.A. Jeffries, T. Gao, C.M. Bird, J.C. Willey and R.G. Worth**. Univ. of Toledo.

P1506 **194.11** Preclinical development of natural compound emodin as an agent to halt breast cancer metastasis. **D. Fan, Q. Liu and J. Hodge**. Univ. of South Carolina.

P1507 **194.12** RELT stains prominently in B cell lymphomas and binds proteins associated with leukemia. **J.K. Cusick, Y. Alhomsy, G. Talbott, C. Sumida, D. Aghaians, N. Hejazi and A. Jacobs**. California Univ. of Sci. and Med., California Northstate Univ. and Univ. of Hawaii, Hilo.

P1508 **194.13** The significance of spontaneously immortalized B lymphocytes from patients with AIDS-related non-Hodgkin's lymphoma and HIV-infected individuals. **K. Zhuang, Y. Zhang, L. Zhou, X. Qi, X. Xu, F. Meng, Z. Xu, J. Liu, L. Shao, Y. Xiong, H. Ke and X. Gui**. Wuhan Univ., China.

P1509 **194.14** Gemcitabine promotes tumor cell-derived inflammatory responses leading to immunosuppression. **C. Ding and J. Yan**. Univ. of L.ville.

P1510 **194.15** Tumor exosome mediated immune regulation in colorectal cancer. **S. Subramanian, X. Zhao and C. Yaun**. Univ. of Minnesota.

P1511 **194.16** Immune characteristics in PBMC of patients with hepatitis B virus-associated early-stage hepatocellular carcinoma revealed by mass cytometry. **W. Wang, B. Xu, L. Qiao, J. Yin, A. Dou, D. Lin, Y. Zang and D. Chen**. Beijing Youan Hosp., China.

P1512 **194.17** Epigenetic mediated immune exhaustion persists after successful tuberculosis therapy. **A.R. DiNardo, K. Rajapakshe, T. Nishiguchi, G. Mtetwa, G. Maphalala, G. Makedonas, C. Coarfa and A.M. Mandalakas**. Baylor Col. of Med., Baylor-Swaziland Children's Fndn., Swaziland and Swaziland Ministry of Hlth., Swaziland.

P1513 **194.18** Antitumor effect of metformin: what about Burkett's lymphoma? **X. Wan, G. Zhang, S. Huang, Z. Liu, L. Liu, Z. Lu and C. Tang**. Chinese Acad. of Sci., China.

P1515 **194.19** miRNA signature derived from GBM plasma exosomes as a diagnostic biomarker. **L.M. Cumba Garcia, P. Chanana, A.J. Johnson and I.F. Parney**. Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin., Rochester, Minnesota.

P1517 **194.20** Human intrinsic immunity factor SLFN11 promotes cell death upon DNA damages through cleavage of distinct type II tRNAs and inhibition of proteins syntheses related to DNA damage responses and repairs. **M. Li, E. Kao, D. Malone, X. Gao, J.Y.J. Wang and M. David**. Univ. of California, San Diego.

P1518 **194.21** High-dimension flow cytometry reveals comprehensive deviations in immunophenotypes associated with non-response to melanoma immunotherapies. **D.M. Woods, A. Laino, A. Winters, J. Alexandre, J. Weber and P. Chattopadhyay**. New York Univ. Med. Ctr.

P1519 **194.22** The natural human IgG1 mAb Pritumumab targets cell surface expressed vimentin and inhibits tumor growth. **M.C. Glassy, I. Babic, R. Mukthavaram, P. Jiang, N. Nomura, E. Glassy and S. Kesari**. Univ. of Calif., San Diego, Moores Cancer Ctr., John Wayne Cancer Inst. and Pathology, Inc.

P1520 **194.23** The role of nano-particulate carbon black in lung cancer development. **C-Y. Chang, R. You and F. Kheradmand**. Baylor Col. of Med.

P1521 **194.24** CD146 contributes the metastatic properties and antitumor immunity of human colon adenocarcinoma cells. **K. Kato, Y. Shimizu and T. Yamazaki**. Toyo Univ., Japan.

P1522 **194.25** IFN-γ inhibit ALDH^{br} breast cancer cells in murine 4T1 tumor model. **G. Shi, X. Zhuang, Y. Wu and R. Heller**. Old Dominion Univ. Res. Fndn., Affiliated Hosp. of Jiangsu Univ., China and Sch. of Preclinical Med., Wannan Med. Col., China.

P1523 **194.26** Complete workflows allow comprehensive tumor microenvironment analysis and culture of cell subsets of limited tumor patient samples. **C. Evaristo, R. Siemer, E. Criado-Moronati, A. Baranska, P. Gert, D. Agorku, O. Hardt, D. Vorholt, A. Singh, C. Dose, B. Heemskerk and A. Richter**. Miltenyi Biotec, Germany.

P1525 **194.27** Therapeutic induction of tertiary lymphoid structures in melanoma using STING agonists. **M. Chelvanambi, J.L. Taylor, R.J. Fecek and W.J. Storkus**. Univ. of Pittsburgh and Univ. of Pittsburgh Sch. of Med.

P1527 **194.28** Intratumoral delivery of RIG-I agonist induces robust anti-tumor immune responses. **X. Jiang, O. Fedorova, M. Linehan, H. Dong, A.M. Pyle and A. Iwasaki**. Yale Univ. Sch. of Med.

P1529 **194.29** Deep characterization of tumor microenvironments using single cell multi-omics analysis. **L. Montesclaros, S.C. Boutet, S.E.B. Taylor, M.J.T. Stubbington, V. Giangarra, J.K. Lau, J. Sapida, S. Ziraldo, K.A. Pfeiffer, G. Zheng, A.M. Barrio, J.Y. Lee, S. Marrs, K. Wu and T.S. Mikkelsen**. 10x Genomics.

P1532 **194.30** Histotripsy initiates local and systemic immunological response and reduces tumor burden in breast cancer. **A.D. Hendricks, J. Howell, R. Schmieley, S. Kozlov, A. Simon, S.L. Coutermarsh-Ott, E. Vlaisavljevich and I.C. Allen**. Virginia Tech and Virginia-Maryland Col. of Vet. Med.

P1534 **194.31** Irreversible electroporation stimulates a pro-inflammatory tumor microenvironment in pancreatic cancer. **R.M. Brock, N.B. White, V.M. Ringel-Scaia, S.L. Coutermarsh-Ott, K. Eden, J. Coutri, N. Manuchehrabadi, R.V.C. Davalos and I.C. Allen**. Virginia Polytechnic Inst. and State Univ., Virginia-Maryland Col. of Vet. Med. and Res. and Develop., Angiodynamics.

P1535 **194.32** Connecting blood and intratumoral Treg activity in predicting future relapse in breast cancer. **L. Wang**. Beckman Res. Inst., City of Hope.

P1536 **194.33** Detection and quantification of circulating tumor cells in PBMCs or blood using flow cytometry. **M. Lei, P. Ye, A. Wang, N. Li and X. Wang**. ACEA Biosciences.

P1537 **194.34** SUMOylation of ROR-γt inhibits IL-17 expression and colon cancer via HDAC2. **V.K. Poojary**. Baylor Inst. for Immunology Res.

P1538 **194.35** Targeting the tumor microenvironment with the monoclonal antibody Tocilizumab, reduces IgM secretion in Waldenström macroglobulinemia. **W. Han, S.J. Matissek, D. Jackson, B. Sklavanitis and S.F. Elsawa**. Univ. of New Hampshire and Northern Illinois Univ.

P1539 **194.36** Weighted gene co-expression network analysis of CXCL13, CXCR5, and associated genes in multiple myeloma. **O.O. Adebayo, C.D. Young, K. Carey, C.D. Dill, S.K.K. Nunez, T.L. Griffen, S. Jain and J.W. Lillard**. Morehouse Sch. of Med.

P1540 **194.37** Hypoxia-inducible factor-1α is upregulated in natural killer cells by interleukin-2 and hypoxia via PI3K/mTOR signaling pathway. **E.R. Cluff, J. Nolan, C. Collins, A. Varadaraj and N. Rajasekaran**. Northern Arizona Univ.

P1541 **194.38** Immune cell phenotype and cytokine secretion in mouse breast cancer responding to anti-CD47 antibody treatment. **C.K. wen, J. Elia, L. Loter, T. Rafizadeh, W. Jiang, H. Zhang and X. Yang**. BioLegend, Inc.

P1542 **194.39** Enhancing the immune microenvironment by targeting a vascular three prime exonuclease. **S. Anand and C. Espinosa-Diez**. Oregon Hlth. & Sci. Univ.

P1543 **194.40** Quantification of a spectrum of adhesion molecules in metastatic cancer patient samples using a multiplex bead-based immunoassay panel. **A. Zhao, J. Lehmann, B. Sun, W. Jiang and S. Ji**. BioLegend, Inc.

P1544 **194.41** TNF superfamily cytokines overcome immune evasion in medulloblastoma. **R. Wechsler-Reya, A. Garancher, H. Suzuki, S. Haricharan, M. Beigi Masihi, J.M. Rusert, P.S. Norris, F. Carrette, M.M. Romero, S.A. Morrissy, P. Skowron, F.M.G. Cavalli, H. Farooq, V. Ramaswamy, S.J.M. Jones, R.A. Moore, A.J. Mungall, Y. Ma, N. Thiessen, Y. Li, A. Morcavallo, L. Qi, J.J. Henderson, J.R. Crawford, M.L. Levy, J.M. Olson, Y-J. Cho, A. Deshpande, X-N. Li, L. Chesler, M.A. Marra, O.J. Becher, L.M. Bradley, C.F. Ware and M.D. Taylor**. NCI-Designated Cancer Ctr., Sanford Burnham Prebys Med. Discovery Inst., Hosp. For Sick Children, Canada, Lester & Sue Smith Breast Ctr., Baylor Col. of Med., Infectious and Inflammatory Dis. Ctr., Sanford Burnham Prebys Med. Discovery Inst., Northwestern Univ., Canada's Michael Smith Genome Sci. Centre, Canada, Inst. of Cancer Res., United Kingdom, Texas Children's Hosp., Baylor Col. of Med., Oregon Hlth. & Sci. Univ., Rady Children's Hosp. and Fred Hutchinson Cancer Res. Ctr.

P1545 **194.42** Identification and characterization of a unique KLRG1-expressing subset of CD4+FOXP3+ Tregs in non-small cell lung cancer. **D.O. Adeegbe, D. Noyes, J. Semidey-Hurtado and W. Gamal**. Moffitt Cancer Ctr. and Res. Inst.

P1546 **194.43** Therapeutic targeting of the immunosuppressive axis in ovarian cancer using dietary supplements. **D. Bollino and T.J. Webb**. Univ. of Maryland.

P1547 **194.44** The NOD-like receptor NLRP12 plays a critical role in hepatic inflammation and cancer. **H. Zaki and S.M.N. Udden**. Univ. of Texas Southwestern Med. Ctr.

P1548 **194.45** Inhibition of PI3K promotes anti-tumor immune responses to mantle cell lymphoma. **S.C. Shissler and T.J. Webb**. Univ. of Maryland, Sch. of Med.

195. CO-INHIBITORY AND CO-STIMULATORY SIGNALS IN TUMOR THERAPY

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P1552 **195.1** Humanized PD-1/PD-L1 mice facilitate the direct functional comparison of immune checkpoint inhibitors in vivo. **W.J. Barham, S.M. Harrington, X. Liu and H. Dong**. Mayo Clin.

P1554 **195.2** CD39$^+$CD8$^+$ T cells exhibit a distinct phenotype among tumor-infiltrating tumor-antigen-specific CD8$^+$ T cells. **Y. Lee, J. Park, S-H. Park and E-C. Shin**. Korea Advanced Inst. of Sci. and Technol., South Korea.

P1560 **195.3** Multidimensional single T cell analysis reveals altered T cell biology upon treatment of murine tumor with checkpoint blockade immunotherapy. **S. Rao, A. Kornberg, S. Lin, K. Gharib, L. Koganti, J.A. Garcia-Vilas Garcia, K. Masuda and A. Han**. Columbia Univ. Med. Ctr.

P1550 **195.4** Human CD96 correlates to NK cell exhaustion and predicts the prognosis of human hepatocellular carcinoma. **C. Sun, H. Sun, H. Wei, R. Sun and Z. Tian**. Univ. of Science and Technology of China, China.

P1565 **195.5** Surface and cytoplasmic tumor cell PD-L1 differentially mediate virulence in ovarian cancer and melanoma through mTOR activation. **H.G. Hambright, H.B. Gupta, A.S. Padron, R. Vadlamudi, Y. Chen, P.A. Osmulski and T.J. Curiel**. Univ. of Texas Hlth. Sci. Ctr., San Antonio.

P1561 **195.6** B cells produce IL-27 to upregulate PD-L1 expression and promote breast cancer development. **H. Yan, S. Viswanadhapalli, D. Chupp, M. Fernandez, S. Wu, J. Wang, J. Moroney, J. Taylor, J. Im, C. Rivera, Y. Luo, J. Liu, G. Sareddy, P. Casali, R. Vadlamudi and Z. Xu**. Univ. of Texas Hlth. Sci. Ctr. San Antonio.

P1602 **195.7** Precisely timed histone deacetylase inhibition creates a highly proliferative intratumoral CD8 T cell population and sensitizes tumors to checkpoint blockade. **T.R. McCaw, M. Liu, M. Li, D. Starenki, S. Cooper, R. Arend, A. Forero, D. Buchsbaum and T.D. Randall**. Univ. of Alabama at Birmingham and HudsonAlpha Inst. for Biotech.

P1549 **195.8** HHLA2 expression in human clear cell renal cell carcinoma is significantly associated with patient's prognosis and promotes cancer progression. **L. Chen and J. Jiang**. Soochow Univ., Taiwan.

P1551 **195.9** IL-6, IL-8 drive LAG3/PD1 immune suppression on effector and naïve, peripheral blood CD8+ T cells in cancer patients. **A. Somasundaram, A. Cillo, L. Oliveri, J. Herman, J. Kirkwood, R.L. Ferris, T.C. Bruno and D. Vignali**. Univ. of Pittsburgh Sch. of Med. and Univ. Pittsburgh Med. Ctr. Hillman Cancer Ctr.

P1553 **195.10** Immune checkpoint inhibitors reverse T-cell functional suppression in the bone marrow of a subset of AML patients. **E.F. Lind, A.J. Lamble, Y. Kosaka, T. Laderas, L. Brady, F. Huang, B.J. Druker, J.W. Tyner and S. McWeeney**. Oregon Hlth. & Sci. Univ., Seattle Children's Hosp., Janssen Res. and Develop. and Howard Hughes Med. Inst.

P1555 **195.11** A novel TNFR2 antibody induces T cell co-stimulation and promotes durable anti-tumor immunity. **J.F. Sampson, R.B. Fulton, V.B. Kurella, J.M. Richards, A.J. Camblin, C.S. Wong, A. Koshkaryev, J.E. Lulo, J.A. Qiu, S. Kumar, L. Luus, Y. Jiao, J. Suchy, S. Grabow, V. Paragas, M. Razlog, L. Xi, M. Muda, D.C. Drummond, E.M. Tam and A. Raue**. Merrimack Pharmaceuticals.

P1556 **195.12** A pan-allele class I MHC prediction tool in mice enables tumor immunology studies. **C.I. DeVette, M. Andreatta, A. Welm, M. Nielsen and W.H. Hildebrand**. Univ. of Oklahoma Hlth. Sci. Ctr., Univ. Nacional de San Martín, Argentina, Univ. of Utah and Tech. Univ. of DenM., Kgs. Lyngby, Denmark.

P1557 **195.13** Δ42PD-1 inhibitor acts as a PD-1-independent immunotherapy against human hepatocellular carcinoma. **Z. Tan, M.S. Chiu, C.W. Yan, X. Yang, Y.C. Wong, K. Man, A.S-L. Cheng and Z. Chen**. Univ. of Hong Kong and Chinese Univ. of Hong Kong.

P1558 **195.14** PD-1 expressions on monocytes from patients with hepatocellular carcinoma differs depending on the progression of the cancer. **H. Ohama, A. Asai, Y. Tsuchimoto, S. Fukunishi and K. Higuchi**. Osaka Med. Col., Japan.

P1559 **195.15** GITR agonism triggers antitumor immune responses through IL-21–expressing follicular helper T cells. **C-H. Koh, I-K. Kim, T-S. Kang, K-S. Shin, I. Jeon, B. Song, J-M. Lee, J. Im, Y. Kang and C-Y. Kang**. Col. of Pharmacy, Seoul Natl. Univ., South Korea and Grad. Sch. of Convergence Sci. and Technol., Seoul Natl. Univ., South Korea.

P1562 **195.16** Adipocyte PD-L1 modulates PD-1/PD-L1 checkpoint blockade cancer immunotherapy efficacy. **B. Wu, X. Sun, H.B. Gupta, T.J. Curiel and R. Li**. George Washington Univ. and Univ. of Texas Hlth. Sci. Ctr., San Antonio.

P1563 **195.17** Cell-intrinsic programmed death ligand-1 inhibits cytotoxic chemo, promotes DNA damage repair, and enhances ATM/ATR signaling following exposure to DNA damaging agents in bladder, melanoma, and ovarian cancer cells. **A.V. Kornepati, D. Zhang, H.G. Hambright, S.C. Kari, Y. Deng, C.A. Clark, H.B. Gupta, R. Chakravarty, Y. Hu, R. Li and T.J. Curiel**. Univ. of Texas Hlth. Sci. Ctr., San Antonio and George Washington Univ.

P1564 **195.18** PD-1 checkpoint therapy promotes pro-survival phenotype in regulatory T cells in a model of claudin-low breast cancer. **S.C. Vick, C.M. Perou and J.S. Serody**. Univ. of North Carolina, Chapel Hill.

P1566 **195.19** B7H3 regulates tumor-mediated Th1 type immune responses. **J.S. Lee, M.E. Kim and J.H. Cho**. Chosun Univ., South Korea.

P1567 **195.20** All-trans retinoic acid downregulates NKp30 ligand B7-H6 on tumor cells transcriptionally and posttranscriptionally. **G. Cao, R. Sun and Z. Tian**. Univ. of Sci. and Technol. of China, China.

P1568 **195.21** CD73-dependent tumor resistance to agonistic anti-4-1BB therapy through TGF-β. **S. Chen, J. Fan, M. Zhang, L. Qin, D. Dominguez, A. Long and B. Zhang**. Feinberg Sch. of Med., Northwestern Univ. and Zhengzhou Univ., China.

P1569 **195.22** Viral infection induces the upregulation of MHC-1 expression in infected cancer cells. **S.H. Kim and Y.W. Jung**. Korea Univ., South Korea.

P1570 **195.23** Adrenergic stress impairs $CD8^+$T-cell activation and effector function, limiting anti-tumor immune responses: an in vivo analysis. **G. Qiao, M. Chen, M.J. Bucsek, H. Mohammadpour, C.R. MacDonald, H.M. Campbell, B.L. Hylander and E.A. Repasky**. Roswell Park Cancer Inst.

P1571 **195.24** Precocious expression and engagement of mature αβ TCR in $CD4^-CD8^-$ T cell progenitors can drive NOTCH1 mutation and T-ALL transformation. **K.G. Laffey, R.J. Stiles, M. Ludescher, T.R. Davis, S.S. Khwaja, R.J. Bram, P.J. Wettstein, V. Ramachandran, C.E. Johnson, R.D. Hammer, C-R. Shyu, D. Gil and A.G. Schrum**. Univ. of Missouri and Mayo Clin.

P1572 **195.25** MyD88 dimerization inhibitors for targeting diffuse large B cell lymphomas. **G.A. Snyder, L. Brown, C. Faupel, S. Taylor, M. Sherman, R. Beadenkopf, J. Montague, K. Saikh and Y. Wang**. Inst. of Human Virology, United States Army Med. Res. Inst. of Infectious Dis. and China Pharmaceutical Univ., China.

P1573 **195.26** Repression of osteopontin by IRF8 regulates a novel immunosuppressive checkpoint. **J.D. Klement, A.V. Paschall, P.S. Redd, M.L. Ibrahim, C. Lu, D. Yang, E. Celis, S.I. Abrams, K. Ozato and K. Liu**. Augusta Univ., Roswell Park Cancer Inst. and NICHD, NIH.

P1574 **195.27** The TNFR1/mTNFα signaling axis initiates tumor-promoting inflammation and is associated with poor outcome in neuroblastoma. **J.A. Tomolonis, H. Ngai, A. Courtney and L.S. Metelitsa**. Baylor Col. of Med.

P1575 **195.28** Examining the role of mouse Ly-6A as immune checkpoint inhibitor. **B.D. Capozzoli, F. Mallon and A.K. Bamezai**. Villanova Univ. and Univ. of Pennsylvania.

P1576 **195.29** Tumor-intrinsic PD-L1 regulates tumor initiating cell virulence and stemness genes, and TCF1$^+$ stem-like T cells through Raptor in ovarian cancer, which correlates with survival in high grade serous ovarian cancer. **H.B. Gupta, C.E. Murray, J. Deng, T.A.S. Mohammad, X. Zhang, B. Wu, C.A. Clark, G. Sareddy, Y. Chen, R. Vadlamudi, R. Li and T.J. Curiel**. Univ. of Texas Hlth. Sci. Ctr., San Antonio and George Washington Univ.

P1577 **195.30** Host genetic background affects response to immune checkpoint inhibitors in a B16 melanoma model using diversity outbred mice. **J. Hackett, C. McCarthy, M. Muniz, A. Malysa, W. Wiesend and H. Gibson**. Wayne State Univ. and Beaumont Hosp.

P1578 **195.31** Monitoring PD-1 signaling in tumor infiltrating lymphocytes. **X. Bu, V.R. Juneja, K.M. Mahoney, C.G. Renolds, K.A. Mcguire, S. Maleri, P. Hua, B. Zhu, S.R. Klein, E. Greenfield, P. Armand, J. Ritz, A. Sharpe and G.J. Freeman**. Dana-Farber Cancer Inst., Harvard-MIT Div. of Hlth. Sci. and Technol., Harvard Med. Sch., Dept. of Immunology, Harvard Med. Sch. and Harvard Med. Sch. and Brigham and Women's Hosp.

P1579 **195.32** TSLP modulates anti-tumor Th2 immunity to melanoma via regulation of the PD-L2/PD-1 axis. **J-F. Lai, L. Thompson and S.F. Ziegler**. Benaroya Res. Inst. and Juno Therapeutics.

P1600 **195.33** The role of the PDL1-PD1 axis in modulating macrophage responses in the tumor microenvironment. **F. Momen-Heravi**. Columbia Univ. Med. Ctr.

P1601 **195.34** PD1 blockade modulates Ca^{2+} fluxes in T cells of head and neck cancer patients. **V.S. Gawali, A.A. Chimote, M. Chirra, E. Janssen, T. Wise-Draper and L. Conforti**. Univ. of Cincinnati Col. of Med. and Cincinnati Children's Hosp. Med. Ctr.

P1603 **195.35** Regulation of PD-L1 expression in stimulated antigen specific CD8+ T cells by immunoglobulin 4. **P.M. Daftarian and W. Ouerkaxi**. MBL International.

196. CELLULAR AND MOLECULAR MECHANISMS OF VACCINES FOR ENHANCING PROTECTIVE IMMUNE RESPONSES

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P1617 **196.1** Randomized controlled phase 2a study results using anti IL-33 in food allergy. **C. Liu, S. Chinthrajah, A. Long, S-C. Lyu, M. Londei and K.C. Nadeau**. Stanford Univ. and AnaptysBio.

P1622 **196.2** Regulatory cell therapy for Sjögren's syndrome with *E. coli* colonization factor antigen I fimbriae. **A. Akgul, A.S. Nelson, M. Maddaloni, C. Hoffman, B. Ella, J.R. Abbott, C. Nguyen and D.W. Pascual**. Univ. of Florida.

P1618 **196.3** Combined PD-1 and LAG-3 blockade together with HLA-A*0201 epitopes immunotherapy restore the function of CD8$^+$ T_{RM} cells and reduce UV-B induced recurrent ocular herpes in HSV-1 infected "Humanized" HLA transgenic mice. **L. Benmohamed, P-G.A. Coulon, R. Srivastava and S. Roy**. Univ. of California, Irvine.

P1611 **196.4** Oral R848 reduces host susceptibility to enteric and systemic *L. monocytogenes* challenge. **N. Kayraklioglu, B.H. Horuluoglu, M. Elango, A. Turan and D.M. Klinman**. NCI, NIH.

P1608 **196.5** The damage-associated molecular pattern molecule cyclophilin A exerts mucosal adjuvanticity following intranasal immunization in mice. **A. Sen Chaudhuri and Z. Xiang**. Hong Kong Polytechnic Univ., China.

P1628 **196.6** CD40 ligand multi-trimer antigen fusion protein (MagaVax) as a vaccine design for high-level CD8+ T cell responses. **R.S. Kornbluth, C. Adase, V.S. Hamilton and S. Studer**. Multimeric Biotherapeutics, Inc.

P1607 **196.7** Designing pathogen-like particles to augment vaccine potency through the induction of broadened and synergistic innate immune responses. **R. Toy, P. Pradhan, M.C. Keenum, N. Jhita, E. Blanchard, A. Atalis, N. Narang, C. Chukwu, G. Cortes, M.S. Suthar, P. Santangelo, D. Shayakhmetov and K. Roy**. Georgia Inst. of Technol. and Emory Univ. Sch. of Med.

P1624 **196.8** Transduction of retinoic acid-inducible gene 1 by Ebola virus-like particles enhances antigen-presentation. **O. Martinez, M.K.E. Ngu, P. Warneke and B. burmeister**. Winona State Univ.

P1626 **196.9** Per oral inoculation with live or killed *Chlamydia muridarum* induces protection against per-vaginal *C. muridarum* challenge. **N. Shillova, S.E. Howe and V.H. Konjufca**. Southern Illinois Univ.

P1610 **196.10** PLGA-encapsulated *Chlamydia* recombinant MOMP enhances serum and mucosal Th1 antibodies including memory and effector T-cells via subcutaneous prime-boost as compared to the intramuscular priming route immunization of mice. **R. Sahu, R. Verma, S. Dixit, S. Duncan, A. Ipinmoroti, S.R. Singh and V.A. Dennis**. Alabama State Univ.

P1625 **196.11** CD4 T Cells modulate the protective vs. pathologic response of CD8 T cells during viral infection. **E. Luna**. Arizona State Univ.

P1627 **196.12** Differences in T cell responses to Bordetella pertussis in adults as a function of whole cell versus acellular childhood vaccination. **R.F. da Silva Antunes, M. Babor, M. Pomaznoy, N. Khalil, M. Cortese, A.J. Mentzer, G. Seumois, C.D. Petro, L.A. Purcell, P. Vijayanand, S. Crotty, B. Pulendran, B. Peters and A. Sette**. La Jolla Inst. for Immunology, Stanford Univ. Sch. of Med., Wellcome Centre for Human Genet., Regeneron Pharmaceuticals, Inc. and Regeneron Pharmaceuticals Inc.

P1613 **196.13** Prophylactic immunization prevents antiviral T cell subversion by a rat hepatitis C-like virus. **A. Hartlage, S. Srinivasa Murthy, A. Kumar, S. Trivedi, P. Dravid, H. Sharma, C.M. Walker and A. Kapoor**. Nationwide Children's Hosp.

P1606 **196.14** Unraveling the mechanism of type-1 immunity induction by defective viral genome-derived oligonucleotides. **D.G. Fisher and C.B. Lopez**. Univ. of Pennsylvania.

P1620 **196.15** The adjuvant effects of MF59 on antigen-specific regulatory and effector T cells. **P-H. Lin and H-C. Yang**. Natl. Taiwan Univ. Col. of Med., Taiwan.

P1609 **196.16** Effects of high-affinity engineered class II-restricted full-length and single-chain CAR-format T cell receptors specific for a naturally occurring *Listeria monocytogenes* epitope on T cell activation and specificity. **D. Johnson, S. Myers, W. Magoffin, T. Orton, C.M. Tellez-Frietas, K. Christensen and K.S. Weber**. Brigham Young Univ.

P1623 **196.17** Antigen-specific CD8 T cell response following genital chlamydial challenge is a predictive biomarker of vaccine efficacy in protection against reproductive tract pathology. **A.K. Murthy, K. Warda, L. Moy, T. Musunuri, N. Bui, E. Wright-McAfee, K.H. Ramsey and W. Li**. Midwestern Univ.

P1605 **196.18** Differential infection of dendritic cell subsets by virus-based vaccine platforms. **C. Chiale and M.D. Robek**. Albany Med. Col.

P1604 **196.19** NKT cells induce IgG1 class switch against *C. difficile* carbohydrate antigens and enhance immunity against a live pathogen challenge. **M.L. Lang, G.A. Lang, S.A. Amani, B. Shrestha, T. Shadid, A.F. Gillaspy and J.D. Ballard**. Univ. of Oklahoma Hlth. Sci. Ctr.

P1621 **196.20** Targeting antigen to lymph node lymphatic endothelial cells under steady-state to promote archiving and memory. **C.D. Maulloo, D.S. Wilson, J.A. Hubbell and M.A. Swartz**. Univ. of Chicago.

P1615 **196.21** Enhancement of antigen-specific responses following protein vaccination by albumin-Flt3L expanded dendritic cells: potential implications. **D. Esquivel, B.K. Lam, B. Lee, M. Tan, T.C. Wu and C-F. Hung**. Johns Hopkins Univ. Sch. of Med.

P1616 **196.22** Controlling germinal center affinity maturation to rare or hidden epitopes with antibodies. **M. Meyer-Hermann**. Helmholtz Ctr. for Infection Res., Germany.

P1619 **196.23** Proteogenomic characterization of the specific antibody repertoire induced by gold nanoparticles of differing shape and bioMolec. surface: toward the development of nanoparticle-based vaccines. **A. Pérez-Potti, V. Giannone, S. Lara, P. Bigini, K.A. Dawson and Y. Yan**. Centre for BioNano Interactions, Ireland, Uppsala Biomedicinska Centrum, Sweden and Mario Negri Inst., Italy.

P1614 **196.24** Avian IgY antibodies recognize novel Dengue NS1 epitopes with the ability to neutralize Dengue 2 virus infection in vitro and in vivo. **K.L. O'Donnell, D. Espinosa, M.L. Nilles, E. Harris and D. Bradley**. Univ. of North Dakota and Univ. of California, Berkeley.

P1612 **196.25** Evaluation of the safety profile of ssRNA adjuvant derived from the IGR IRES region of CrPV. **H. Park, H-J. Kim, H.L. Ko, H.W. Kwak, D-H. Won, D-B. Hwang, Y-S. Shin, J-W. Yun and J-H. Nam**. Catholic Univ. of Korea, South Korea.

P1629 **196.26** The inoculation of α-galactosylceramide and HPV18-E1 protein promote a cytokines profile involved in the generation of central memory CD8 + T cells. **A. Amador, A.D. Gonzalez-Telona and M. Lizano**. Instituto Nacional de Cancerología, Mexico.

P1630 **196.27** Glycolipid-peptide vaccination induces liver-resident memory $CD8^+$ T cells that protect against malaria. **L. Holz, Y.C. Chua, R.J. Anderson, S. Draper, B. Compton, J. Li, L. Kedzierski, Z. Wang, T. Osmond, K. Farrand, P.J. Bertolino, D. Bowen, A. Cozijnsen, V. Mollard, G. McFadden, I. Caminschi, M. Lahoud, K. Kedzierska, S.J. Turner, D. Godfrey, I. Hermans, G. Painter and W.R. Heath**. Univ. Melbourne, Australia, Victoria Univ. of Wellington, Wellington, New Zealand, Monash Univ., Australia, Malaghan Inst. of Med. Res., New Zealand and Centenary Inst. of Cancer Med. and Cell Biol.

P1631 **196.28** A macrophage cell-therapeutic approach against multi-drug resistant infectious peritonitis. **R. Tacke, J. Sun, S. Uchiyama, A. Polovina, J. Luker, V. Nizet and D. Nguyen**. Cellular Approaches and Univ. of California, San Diego.

P1632 **196.29** Immunization with *Leishmania major* centrin knock-out (*LmCen*$^{-/-}$) parasites induces skin resident memory T cells that plays a role in protection against wild type infection (*LmWT*). **N. Ismail, S. Karmakar, P. Bhattacharya, R. Dey and H.L. Nakhasi**. Ctr. for Drug Evaluation and Res., FDA.

P1633 **196.30** Raising endogenous anti-HMGB1 IgM antibody for athero-protection in the Apoe$^{-/-}$ mouse model of atherosclerosis. **A. Hariharasubramanian, R. Elangovan, A. Shankar, M. Giacobazzi, A. Broski, A. Panicker, S. Shin, A. Chen and G. Zheng**. Univ. of Illinois-Chicago.

197. HOW VIRUSES OVERRIDE THE IMMUNE SYSTEM

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P1636 **197.1** Alveolar macrophage dysfunction and increased PD-1 expression during chronic SIV infection of rhesus macaques. **R. Hunegnaw, Z. Mushtaq, G. Enyindah-Asonye, T. Hoang and M. Robert-Guroff**. NIH.

P1662 **197.2** HIV-induced production of CCL2 may promote rapid seeding of the latent HIV reservoir. **T.A. Packard, E. Herzig, X. Luo, J.H. Egedal, Z.W. Grimmett, K.J. Hasenkrug, N. Roan and W.C. Greene**. Gladstone Inst. of Virology and Immunology, Aarhus Univ., NIAID, NIH and Univ. of California, San Francisco.

P1651 **197.3** Stochastic HIV gene expression is a novel mechanism for HIV persistence. **R.A. Matus Nicodemos, D. Douek and R. Koup**. VRC, NIAID, NIH.

P1635 **197.4** NLRX1 facilitates HIV-1 infection of CD4 T cells by promoting oxidative phosphorylation. **H. Guo, Q. Wang, L. Wang, E. Rampanelli, X. Chen, S. Chanda, L. Su and J.P. Ting**. Univ. of North Carolina, Chapel Hill, Univ. of Amsterdam, The Netherlands and Sanford Burnham Prebys Med. Discovery Inst.

P1652 **197.5** Sphingosine kinase 2 mediates LCMV-induced $CD4^+$ T cell suppression and instigates viral persistence while preventing immunopathology. **C.J. Studstill, C.J. Pritzl, Y-J. Seo, D.Y. Kim, C.Z. Xia, J.J. Wolf, M. Vijayan and B. Hahm**. Univ. of Missouri, Columbia and Chung-Ang Univ.

P1634 **197.6** A Brazilian Zika virus isolate suppresses type I interferon to establish a sustained infection in immunocompetent mice. **R.D. Pardy and M.J. Richer**. McGill Univ., Canada.

P1661 **197.7** Impaired T cell activation resulting from IL-33 induced myeloid derived suppressor cells and IL-10 secreting Tregs is a major determinant of susceptibility to HSV1 infection of the central nervous system. **R. Chandran, S. Mendonca and EM. Cantin**. City of Hope Beckman Res. Inst.

P1656 **197.8** Vaccinia virus E5 is a dominant inhibitor of the cytosolic DNA sensor cGAS. **N. Yang, Y. Wang, S. Shuman and L. Deng**. Memorial Sloan Kettering Cancer Ctr.

P1647 **197.9** Age-dependent susceptibility to virus infection is governed by host genetics. **V.D. Menachery, E.T. McAnarney and M.T. Ferris**. Univ. of Texas Med. Br., Galveston and Univ. of North C.ina, Chapel Hill.

P1653 **197.10** High dimensional analysis of the GI tract as a long-term reservoir for chronic viral infection. **B.L. Macleod, R. Dickson, K. Hezaveh, H.J. Elsaesser, C.J. Guidos and D.G. Brooks**. Princess Margaret Hosp., Canada and Hosp. For Sick Children, Canada.

P1655 **197.11** New role of Epstein-Barr virus in pathogenesis of acute and chronic lymphocytic leukemia. **V. Laurynenka, M. Carter, S. Parameswaran, X. Chen, L.C. Kottyan, M.T. Weirauch and J.B. Harley**. Cincinnati Children's Hosp. Med. Ctr.

P1657 **197.12** Adiposity augments toxicity of mouse cytomegalovirus. **Z. Wang, C. Dunai, C. Le and W.J. Murphy**. Univ. of California, Davis.

P1663 **197.13** Axl promotes ZIKV entry and modulates antiviral state of human Sertoli cells. **D.P. Strange, B. Jiyarom, N. Pourhabibi Zarandi, X. Xie, H. Sadri-Ardekani, P-Y. Shi and S. Verma**. Univ. of Hawaii, Manoa, Wake Forest Sch. of Med. and Univ. of Texas Med. Br.

P1637 **197.14** Quantifying virus escape from T cells in the latent HIV reservoir. **J.A. Warren, S. Zhou, Y. Xu, M. Moeser, J. Kirchherr, J. Sung, N. Roan, A. Adimora, J. Kuruc, C. Gay, D. Margolis, N. Archin, R. Swanstrom and N. Goonetilleke**. Univ. of North Carolina, Chapel Hill and Univ. of California, San Francisco.

P1648 **197.15** A PML-synonymous mutation in MuPyV results in viral escape from a neutralizing monoclonal antibody. **M.D. Lauver, H. Ren, D. Goetschius, S. Hafenstein and A. Lukacher**. Penn State Col. of Med. and Pennsylvania State Univ.

P1649 **197.16** Evasion of humoral immunity by hepatitis E virus. **Z. Feng**. The Res. Inst. at Nationwide Children's Hosp.

P1654 **197.17** HIV-1 envelope glycan composition influences virus-host interaction. **C.E. Hioe, M. Jan, R. Feyznezhad, V. Itri, X. Liu and C. Upadhyay**. Icahn Sch. of Med., Mount Sinai.

P1659 **197.18** Immunosignatures as a prognostic tool for LCMV disease duration in mice. **A. Tanveer, R. Antia, S. Johnston, P. Stafford and J.N. Blattman**. Arizona State Univ. and Emory Univ.

P1646 **197.19** Daidzein and its analogs reactivate HIV replication from latently infected CD4 T cells. **L. Liu, J. Liang, X. Lu and Z. Chen**. Univ. of Hong Kong.

P1658 **197.20** Whole genome evolutionary fingerprinting suggests novel primate gene functions in evolutionary arms races. **B.V. Tsu, B. Murrell, M. Daugherty and J. Wertheim**. Univ. of California, San Diego, Karolinska Inst., Sweden and Sch. of Med., Univ. of California, San Diego.

P1638 **197.21** Interaction between HIV-1 integrase and viral RNA drives proper virion morphogenesis and is necessary for successful infection. **J.L. Elliott, J.E. Eschbach, D.Q. Lawson, M. Puray-Chavez, D. Townsend, W. Li, P. Koneru, A.N. Engelman, M. Kvaratskhelia and S.B. Kutluay**. Washington Univ. Sch. of Med., Harvard Med. Sch. and Univ. of Colorado Sch. of Med.

P1639 **197.22** Longitudinal analysis reveals a dynamic antibody repertoire response to Zika virus infection in convalescent human. **F. Gao, X. Lin, L. He, R. Wang, H. Wang, X. Shi, F. Zhang, C. Yin, L. Zhang, J. Zhu and L. Yu**. Tsinghua University Sch. of Med., China, Scripps Res. Inst. and Eighth People's Hosp., Guangzhou Med. Univ., China.

P1650 **197.23** Filovirus glycoprotein glycosylation analysis and effects on immunogenicity. **B. Martinez and S. Bradfute**. Univ. of New Mexico.

P1660 **197.24** In vivo effects of $\alpha 4\beta 7$ blockade on size of viral reservoirs in SIV-infected rhesus macaques. **H. XU**. Tulane Natl. Primate Res. Ctr.

P1664 **197.25** West-Nile virus replicon particles infect 293T cells expressing DC-SIGNR. **O. Martinez, H. Kunkel and A. Ludwig**. Winona State Univ.

P1665 **197.26** Structural and functional insights of the capsid protein from Zika virus. **H. Song, Z. Shang, J. Qi and G.F. Gao**. Chinese Acad. of Sci., China.

198. IMMUNE RESPONSE TO RESPIRATORY VIRUSES

Poster Session

SUN. 2:30 PM—EXHIBIT/POSTER HALL

P1675 **198.1** A potently neutralizing site III-specific human antibody prevents human metapneumovirus replication in vivo. **J. Mousa, D. Diaz, J. Crabtree, A. Pena-Briseno, Y. Bar-Peled and R.A. Tripp**. Univ. of Georgia.

P1670 **198.2** Uncharted territory: the $CD4^+$ T cell response to human metapneumovirus. **K.D. Lamens, M.C. Rogers, J.T. Tometich, T.W. Hand and J.V. Williams**. Univ. of Connecticut, Sch. of Med., Vanderbilt Univ. Sch. of Med. and Univ. of Pittsburgh Sch. of Med.

P1669 **198.3** Respiratory syncytial virus strains differentially activate the inflammasome eliciting a pathogenic Th17 response. **K. Waldstein, K.A. Weiss, S. Hartwig, H. Quick, B. Poudel, P. Gurung and S.M. Varga**. Univ. of Iowa.

P1679 **198.4** Relative timing of type I interferon response and virus replication determines disease outcome during respiratory virus infection. **R. Channappanavar, A. Fehr, J. Zheng, J. Abrahante, M. Mack, D. Meyerholz and S. Perlman**. The Univ. of Tennessee Hlth. Sci. Ctr., Univ. of Kansas, Carver Col. of Med., Univ. of Iowa, Univ. of Minnesota, Univ. of Regensburg, Bavaria and Univ. of Iowa.

P1671 **198.5** Can age-associated B cells contribute to anti-viral immunity? **O.A. Kugler-Umana, Y. Kuang, W. Zhang, P. Devarajan, J. Xia and S.L. Swain**. Univ. of Massachusetts Med. Sch.

P1667 **198.6** Eosinophils undergo temporally regulated phenotypic and physiologic changes during influenza A virus infection. **A. Samarasinghe, M. Tiwary and K. LeMessurier**. Univ. of Tennessee Hlth. Sci. Ctr.

P1678 **198.7** Lung-draining lymph-node-resident memory CD8 T cells mediate local protective immunity. **S.M. Anthony, N. Van Braeckel-Budimir, S. Moioffer, S.M. Hartwig, S.M. Varga, V.P. Badovinac and J.T. Harty**. Carver Col. of Med., Univ. of Iowa.

P1674 **198.8** Improved level and longevity of protective immune responses in measles virus with efficient replication in blood and lymphoid tissue. **W-H.W. Lin, R.J. Adams and D.E. Griffin**. Johns Hopkins Univ. Bloomberg Sch. of Publ. Hlth. and Johns Hopkins Univ. Sch. of Med.

P1673 **198.9** The role of exchange proteins directly activated by cAMP in respiratory syncytial virus-induced pulmonary pathogenesis. **E-J. Choi, J. Ren, W. Wu, R.P. Garofalo and X. Bao**. Univ. of Texas Med. Br.

P1676 **198.10** Immunoprotection versus immunopathology by type I and III interferon against human metapneumovirus. **Y. Zhang, J. Xu, M. Miranda-Katz, H.E. Rich, M.L. Manni, S. Tollefson, S.N. Sarkar, J.F. Alcorn and J. Williams**. Univ. of Pittsburgh Sch. of Med., Tsinghua Univ. Sch. of Med., China, Children's Hosp. of Pittsburgh, Univ. Pittsburgh Med. Ctr. and Vanderbilt Univ.

P1672 **198.11** Respiratory syncytial virus disease severity is associated with distinct $CD8^+$ T cell profiles. **D. Siefker, L. Vu, D. You, A. McBride, R. Taylor, T.L. Jones, J.P. DeVincenzo and S. Cormier**. Louisiana State Univ., Univ. of Tennessee Hlth. Sci. Ctr. and Le Bonheur Children's Hosp.

P1668 **198.12** Differential gene expression profile analysis of RIG-I- versus type I IFN-stimulated primary human nasal epithelial cells and protection from influenza virus replication. **E. Hartmann, V. von Lilien Waldau, J.P. Stümpel, J. Ludwig, M. Schlee, C. Coch and G. Hartmann**. Clin. for Otorhinolaryngology, Head and Neck Surgery, Univ. of Bonn, Germany and Univ. of Bonn, Germany.

P1677 **198.13** Unveiling the functional role of hsa-miR-4634 in the innate immunity against respiratory pneumovirus infection. **I.K. Uche and M.A. Guerrero-Plata**. Louisiana State Univ.

P1666 **198.14** The influence of the lung virome on pulmonary B cells. **F. Aihara, M.P. Breen, F. Feng, R. Fearns, J.P. Mizgerd and T.B. Kepler**. Boston Univ. Sch. of Med.

MONDAY MORNING

MAY 13

199. MAJOR SYMPOSIUM G: IMMUNE RESPONSES TO EMERGING VIRAL INFECTIONS

Major Symposium

MON. 8:00 AM—BALLROOM 20D

CHAIRS: *J. CROWE, JR., S. CHERRY*

8:00 Human B cell responses to emerging viral infections. **J. Crowe, Jr.** Vanderbilt Univ.

8:35 Using functional genomics to reveal new facets of antiviral immunity. **S. Cherry.** Univ. Pennsylvania.

9:10 Breaking and entering: viral infections of host barrier surfaces. **C.B. Coyne.** Univ. of Pittsburgh.

9:45 Broad and potent neutralization of Ebola and Lassa: insights from structural biology. **E.O. Saphire.** Scripps Res. Inst.

10:20 Immune determinants of severe influenza virus infection. **A. Garcia-Sastre.** Icahn Sch. of Med., Mount Sinai.

10:55 Adaptive immune response to Dengue and Zika: protection or pathogenesis? **S. Shresta.** La Jolla Inst. for Immunology.

200. MAJOR SYMPOSIUM H: REGULATING IMMUNE CELL METABOLISM TO REGULATE IMMUNE RESPONSES

Major Symposium

MON. 8:00 AM—BALLROOM 20BC

CHAIRS: *J.D. POWELL, L. MOREL*

8:00 mTOR links TCR engagement with metabolic reprogramming to regulate T cell activation, differentiation, and function. **J.D. Powell.** Johns Hopkins Univ.

8:42 Metabolic regulation of autoimmunity in lupus. **L. Morel.** Univ. of Florida.

9:24 Itaconate immunology - from one cell to many. **M.N. Artyomov.** Washington Univ. Sch. of Med. in St. Louis.

10:06 Improving immunotherapy of cancer through metabolic reprogramming. **G.M. Delgoffe.** Univ. of Pittsburgh.

10:48 Non-canonical autophagy mediates the immunometabolic program. **J. Martinez.** NIEHS, NIH.

201. THE INTERNATIONAL SOCIETY FOR NEUROIMMUNOLOGY (ISNI) SYMPOSIUM: FRONTIERS IN NEUROIMMUNOLOGY – SOMETHING FOR EVERYONE

Guest Society Symposium

MON. 8:00 AM—ROOM 30AB

CHAIRS: *A. BAR-OR, N. ARBOUR*

8:00 Innate immune mechanisms of synapse remodeling during brain development and learning. **A. Molofsky.** Univ. California, San Francisco.

8:40 Regulation of CNS inflammation by astrocytes. **F. Quintana.** Harvard Univ.

9:20 How CNS microenvironments shape CNS cell/immune cell crosstalk. **J. Goverman.** Univ. of Washington.

202. ANTIGEN PROCESSING AND PRESENTATION II

Block Symposium

MON. 8:00 AM—ROOM 26AB

CHAIRS: *L. SANTAMBROGIO, K. HASTINGS*

8:00 Getting in the groove: editing of MHC-I antigen repertoires by molecular chaperones is governed by a network of protein dynamics. **N. Sgourakis, A. McShan, K. Natarajan, J. Jiang, J. Park, S. Overall, J.S. Toor, V. Kumirov, D. Flores-Solis, M. Badstubner, E.L. Kovrigin, C.R. Bagshaw, J. Pallesen, E. Procko and D.H. Margulies**. Univ. of California, Santa Cruz, NAIAD, NIH, Univ. of Illinois, Urbana-Champaign, Marquette Univ. and Indiana Univ. **(177.31)**

8:15 Molecular mechanisms underlying the glycation induced-impairment of antigen processing and presentation in diabetic (T2DM) patients and *ob*/*ob* mice. **L. Santambrogio, C. Clement, M.P. Negroni, P. Nanaware, K. Morozova and L. Stern**. Albert Einstein Col. of Med. and Univ. of Massachusetts Med. Sch. **(177.21)**

8:30 Parkinson's disease-related proteins PINK1 and Parkin are major regulators of the immune system. **D. Matheoud, T. Cannon, A. Voisin, A-M. Penttinen, L. Ramet, A. Fahmy, C. Ducrot, A. Laplante, M-J. Bourque, L. Zhu, A. Le Campion, H. McBride, S. Gruenheid, L-E. Trudeau and M. Desjardins**. Ctr. de Recherche du Ctr. Hosp., Canada, McGill Univ., Canada and Université de Montréal, Canada. **(177.27)**

8:45 The human NK cell receptor KIR2DS4 detects a conserved bacterial epitope presented by HLA-C. **E.O. Long and M.J.W. Sim**. Natl. Inst. of Allergy and Infectious Dis. **(177.24)**

9:00 *Wdfy4*-deficiency reveals a critical role for cross-presentation in anti-viral and anti-tumor responses. **D.J. Theisen, J.T. Davidson, C.G. Briseño, M. Gargaro, E.J. Lauron, Q. Wang, P. Desai, V. Durai, P. Bagadia, J.R. Brickner, W.L. Beatty, H.W. Virgin, W.E. Gillanders, N. Mossamaparast, M.S. Diamond, .D. Sibley, W. Yokoyama, R.D. Schreiber, T.L. Murphy and K.M. Murphy**. Washington Univ. in St. Louis, Univ. of Perugia, Vir Biotechnology and HHMI. **(177.23)**

9:15 Investigating a role for HLA-DO in the development of CD4 memory cells. **N. Song, R.A. Welsh and S. Sadegh-Nasseri**. Johns Hopkins Univ. **(177.25)**

9:30 The non-classical MHC-II molecule H2-O (DO) is required for efficient recovery from influenza A infection. **L. Stern and M.M. Jurewicz**. Univ. of Massachusetts Med. Sch. **(177.28)**

203. T CELL REGULATION AND FUNCTION

Block Symposium

MON. 8:00 AM—ROOM 33ABC

CHAIRS: *C. KEMPER, S. JAMESON*

8:00 Metabolic shift induced by systemic activation of T cells in PD-1-deficient mice perturbs brain monoamines and emotional behavior. **M. Miyajima, B. Zhang, M. Guerrini, Y. Sugiura and S. Fagarasan**. RIKEN, Japan, Keio Univ. Sch. of Med., Japan and Ctr. for Integrative Med. Sci., RIKEN. **(56.2)**

8:15 Antigen presentation by CD301b+ dermal dendritic cells dictates CD4+ T cell fate. **N. Tatsumi, A. Iwasaki and Y. Kumamoto**. Rutgers New Jersey Med. Sch. and HHMI. **(56.9)**

8:30 You are what you eat: CD46 regulated amino acid usage dictates T cell function. **E.E. West, S. Freeley, M.M. Kaminski, S. Veenbergen, D-Y. Lee, L. St. John-Williams, J.W. Thompson, D.R. Green, S. Scholl-Buergi, D. Karall, M. Huemer and C. Kemper**. NHLBI, NIH, Kings Col. London, United Kingdom, St. Jude Children's Res. Hosp., Erasmus Univ. Med. Ctr., The Netherlands, Duke Univ., Med. Univ. of Innsbruck, Austria and Univ. Children's Hosp., Zurich, Switzerland. **(56.10)**

8:45 Rapid activation of brain resident memory T cells following neurological insults. **K. Ayasoufi, S. Namen, E. Goddery, Z. Tritz, C.E. Fain, L. Yokanovich, F. Jin and A.J. Johnson**. Mayo Clin., Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin., Rochester, Minnesota. **(56.20)**

9:00 The costimulatory molecule ICOS promotes establishment of resident memory $CD8^+$ T cells. **C. Peng, H. Borges da Silva, H. Wang and S. Jameson**. Univ. of Minnesota. **(56.13)**

9:15 Secondary stimulation of CD4 T cells generates an exhaustion phenotype. **G.S. Wolf and N.J. Singh**. Univ. of Maryland, Baltimore. **(56.14)**

9:30 PD-1 regulates response to bystander activation of memory CD8 T cells. **C. Le, C. Dunai, L.T. Khuat and W.J. Murphy**. Univ. of California, Davis. **(56.17)**

9:45 Lung-migratory dendritic cells traffic into the spleen after influenza virus infection. **M.M. Jenkins, H. Bachus, B. Leon-Ruiz and A. Ballesteros-Tato**. Univ. of Alabama at Birmingham, Sch. of Med. **(56.18)**

204. B CELL IMMUNITY

Block Symposium

MON. 8:00 AM—ROOM 31ABC

CHAIRS: *P. CASALI, L. JUSTEMENT*

8:00 The *bona fide* structure of IgM pentamer and its binding mode with AIM/CD5L molecule. **T. Miyazaki, E. Hiramoto and S. Arai**. Univ. of Tokyo, Japan. **(123.3)**

8:15 APRIL signaling in human antibody secreting cells promotes cellular response via p38 and differential immediate early gene regulation. **S.J. Stephenson, M.A. Care, G.M. Doody and R.M. Tooze**. Univ. of Leeds, United Kingdom. **(123.7)**

8:30 CD28 regulates autophagy to enhance plasma cells survival. **P. Peng, C. Chavel, A. Utley, L. Carlson and K.P. Lee**. Roswell Park Cancer Inst. **(123.11)**

8:45 Integrative analysis of human memory B cell coding and non-coding transcriptomes. **J.B. Moroney, A. Vasudev, J.R. Taylor, H. Zan, A. Pertsemlidis and P. Casali**. Univ. of Texas Long Sch. of Med., UTHealth, San Antonio. **(123.14)**

9:00 TET enzymes augment AID expression via 5hmC modifications at the *Aicda* superenhancer. **C-W.J. Lio, V. Shukla, D. Samaniego-Castruita, E. Gonzalez Avalos, A. Chakraborty, X. Yue, D.G. Schatz and A. Rao**. La Jolla Inst. for Immunology and Yale Univ. Sch. of Med. **(123.15)**

9:15 Effects of antiorthostatic suspension, tetanus toxoid, and CpG on the bone marrow antibody repertoire in C57BL/6 mice. **T.A. Rettig, N.C. Nishiyama, M.J. Pecaut and S.K. Chapes**. Loma Linda Univ. and Kansas State Univ. **(123.6)**

9:30 Physiological V(D)J recombination is mediated by RAG scanning of loop-extruded chromatin. **Y. Zhang, X. Zhang, Z. Liang, Z. Ba, E. Dring, J. Zurita, A.P. Aiden, E.L. Aiden and F.W. Alt**. Western Michigan Univ. Homer Skryker Sch. of Med., Boston Children's Hosp. and Baylor Col. of Med. **(123.18)**

9:45 Tumor necrosis factor receptor associated factor 3 regulates B cell antigen receptor signaling. **A.L. Whillock and G.A. Bishop**. Univ. of Iowa Carver Col. of Med. **(123.2)**

REMINDER

205. MUCOSAL IMMUNITY DURING INFECTION

Block Symposium

MON. 8:00 AM—ROOM 25ABC

CHAIRS: *M. ABT, J. MIZGERD*

8:00 Identification and characterization of lung commensal bacteria that modulate immune response in tuberculosis. **L. Bernard, A. Colom, M. Cescato, C. Cougoule, P. Guilloton, N. Ghebrendrias, F. Capilla, A. Alloy, A. Remot, M. Thomas, P. Langella, O. Neyrolles and G. Lugo-Villarino**. Institut de Pharmacologie et de Biologie Structurale, France, Centre de Physiopathologie de Toulouse Purpan, France and INRA, France. **(66.2)**

8:15 Inducible epithelial resistance protects against acute viral infection and subsequent $CD8^+$T cell dependent lethal immunopathology. **S. Wali, J.R. Flores, D. Goldblatt, M. Tuvim, B.F. Dickey and S.E. Evans**. Univ. of Texas MD Anderson Cancer Ctr. **(66.3)**

8:30 $CD4^+$ resident memory T cells dominate immunosurveillance and orchestrate local recall responses. **L.K. Beura, N.J. Fares-Frederickson, E.M. Steinert, M.C. Scott, E.A. Thompson, K.A. Fraser, J.M. Schenkel, V. Vezys and D. Masopust**. Univ. of Minnesota, Feinberg Sch. of Med., Northwestern Univ., Ctr. for Immunology, Univ. of Minnesota and Bluebird Bio. **(66.21)**

8:45 T-cell derived acetylcholine aids host defenses during enteric bacterial infection with *Citrobacter rodentium*. **V.T. Ramirez, I. Brust-Mascher, M.B. Gardner, J.A. Sladek, M.G. Gareau and C. Reardon**. Univ. of California, Davis, Sch. of Vet. Med. **(66.16)**

9:00 Unrelated respiratory infections compromise established cellular immunity by promoting apoptosis of pre-existing lung-resident memory CD8 T cells. **S.L. Hayward, Z.R.T. Li, J.L. Lobby, J.O.P. Eggert and J.E. Kohlmeier**. Emory Univ. Sch. of Med. **(66.17)**

9:15 Acetylcholine and cholinergic lymphocytes in the immune response to influenza. **J.A. Phillips, A. Horkowitz and R. Feuer**. San Diego State Univ. **(66.20)**

9:30 Repeated respiratory bacterial exposures elicit lung-resident memory B cells in the absence of organized tertiary lymphoid tissue. **K.A. Barker, N.M. Smith, A.T. Shenoy, I.M.C. Martin, M.R. Jones, L.J. Quinton and J.P. Mizgerd**. Boston Univ. Sch. of Med. **(66.22)**

9:45 Host immunity modulates efficacy of fecal microbiota transplantation treatment of *Clostridium difficile* infection. **M.C. Abt, E4.G. Pamer, E.R. Littmann, I. Zarin and R.A. Carter**. Perelman Sch. of Med., Univ. of Pennsylvania and Mem. Sloan Kettering Cancer Ctr. **(66.8)**

206. TECHNOLOGICAL INNOVATIONS I

Block Symposium

MON. 8:00 AM—ROOM 32AB

CHAIRS: *Y. SYKULEV, A.M. BURKHARDT*

8:00 Pressure enabled drug delivery of anti-CEA CAR-T cells increases intra-hepatic CAR-T tumor penetration and therapeutic index in a murine model of liver metastasis. **J.C. Hardaway, L.F. Chai, M. Lopes, B. Rabinowitz, P. Guha, D. Jaroch, B. Cox, R. Knight, J. Zeldis, N.J. Espat and S.C. Katz**. Roger Williams Med. Ctr., TriSalus Life Sci., Inc. and Sorrento Therapeutics, Inc. **(130.1)**

8:15 Use of modified peptides for live tracking of peptide-MHCII complexes during antigen-specific T cell-dendritic cell interactions. **J.A. Al Souz, M. Akkaya, R. Kamdar, O. Kamenyeva, J. Kabat, E.M. Shevach and B. Akkaya**. NIAID, NIH and Univ. of Maryland, Baltimore County. **(130.2)**

8:30 Comprehensive benchmarking of T-cell epitope prediction tools. **S. Paul and B. Peters**. La Jolla Inst. for Allergy and Immunology. **(130.3)**

8:45 High throughput pMHC-I multimer library production using chaperone-mediated peptide exchange. **S. Overall, J.S. Toor, M. Yarmarkovich, S. Hao, S. Nguyen, A. Sada-Japp, M.R. Betts, J.M. Maris, P. Smibert and N.G. Sgourakis**. Univ. of California, Santa Cruz, Children's Hosp. of Philadelphia, New York Genome Ctr. and Inst. for Immunology, Perelman Sch. of Med., Univ. of Pennsylvania. **(130.4)**

9:00 Imaging cancer immunology: tracking immune cells in vivo with magnetic particle imaging. **J. Gaudet, J. Mansfield and P. Goodwill**. Magnetic Insight. **(130.7)**

9:15 Development of sialoglycan recognizing probes with defined specificities: towards exploring the dynamic mammalian sialoglycome. **S. Srivastava, A. Verhagen, B. Wasik, H. Yu, A. Sasmal, B. Bensing, N. Khan, Z. Khedri, S. Diaz, P. Sullam, N. Varki, X. Chen, C. Parrish and A. Varki**. Sch. of Med., Univ. of California, San Diego, Col. of Vet. Med., Cornell Univ., Univ. of California, Davis and Sch. of Med., Univ. of California, San Francisco. **(130.5)**

9:30 Genome-wide CRISPR wcreens in primary human T cells reveal key regulators of immune function. **E. Shifrut, J. Carnevale, A. Ashworth and A. Marson**. Univ. of California, San Francisco. **(130.6)**

9:45 20,000 layers under the model: Bayesian neural networks improve the robustness of human PBMC classifications using immunologist-encoded bias. **M.A. Velazquez-palafox, I.J. Taylor, J. Spidlen, J. Lai, R. Halpert and M. Stadnisky**. Flowjo and BD Biosciences. **(130.29)**

207. TRANSLATIONAL ADVANCES IN TISSUE SPECIFIC AUTOIMMUNITY

Block Symposium

MON. 8:00 AM—ROOM 30CDE

CHAIRS: *L. SOLT, R. AXTELL*

8:00 Genetic and pharmacological modulation of RORα regulates T_H17-driven inflammatory disorders. **L.A. Solt, R. Wang, M. Amir, S. Chaudhari, S. Campbell, M.B. Bassette, A. Eliason, M.S. Sundrud and T. Kamenecka**. Scripps Res. Inst. **(68.11)**

8:15 IFN-β induces IL-6 production by B cells to promote T_H17-mediated neuroinflammation. **A.M. Agasing, S. Gawde, N. Siebert, K. Ruprecht, F. Paul and R.C. Axtell**. Oklahoma Med. Res. Fndn. and Charité – Universitätsmedizin Berlin, Germany. **(68.12)**

8:30 Human CD39 overexpression or APT102 recombinant apyrase administration enhances Treg and Tr1 cell immunity in inflammatory bowel disease. **M. Vuerich, R.J. Robles, S. Mukherjee, A. Xie, R. Harshe, A.C. Moss, S.C. Robson and M.S. Longhi**. Beth Israel Deaconess Med. Ctr. **(68.13)**

8:45 Anti-CD4/CD8 antibody therapy induces Foxo1 transcriptional activity promoting T cell egress from inflamed tissue during type 1 diabetes. **M.P. Clark, C. Kroger, A. Martin and R. Tisch**. Univ. of North Carolina, Chapel Hill. **(68.14)**

9:00 Lipid nanoparticle-mediated delivery of enhanced costimulation blockade to prevent type 1 diabetes. **Y. Zhang, J. Wang, X. Calderon-Colon, O.N. Tiburzi, M. Iglesias Lozano, J.B. Patrone and G. Raimondi**. Johns Hopkins Univ. **(68.15)**

9:15 ST8Sia6 generated α2,8-disialic acids mitigate hyperglycemia in multiple low dose streptozocin-induced diabetes. **P. Belmonte, M. Shapiro, S. McCue, M. Rajcula and V. Smith Shapiro**. Mayo Clin. **(68.16)**

9:30 Alpha-synuclein acts as an alarmin to promote dendritic cell activation and proinflammatory immune response. **M.M. Alam, D. Yang, A.L. Trivett, X-Q. Li and J.J. Oppenheim**. NCI, NIH. **(68.17)**

9:45 Restoring the balance in autoimmunity: the promise of IL-2 mutein. **L. Khoryati, M. Nguyet Pham, M. Sherve, S. Kumari, M. Bogdani, D.J. Campbell and M. Gavin**. Benaroya Res. Inst. **(68.20)**

208. COMBINATION THERAPIES FOR IMMUNO-ONCOLOGY

Block Symposium

MON. 8:00 AM—ROOM 29ABCD

CHAIRS: *E. STONE, C. FLORES*

8:00 Inhibition of SHP-1 expands the repertoire of anti-tumor T cells available to respond to checkpoint blockade therapy. **J. Snook, A. Soedel and M.A. Williams**. Univ. of Utah. **(136.1)**

8:15 Enhanced antitumor effects by combining IL-12 gene electrotransfer with anti-PD1 in preclinical metastatic cancer model. **G. Shi, C. Lundberg, M. Scott, C. Edelblute and R. Heller**. Old Dominion Univ. **(136.2)**

8:30 CD122-selective IL-2 complexes synergize with anti-PD-L1 in B16 melanoma to treat PD-L1^{KO} tumors, possibly through inducing $CD8^+TCF\text{-}1^+Tim3^-PD\text{-}1^+CXCR5^+$ stem-like T cells. **X. Zhang, J.M. Drerup, J. Mendez, A.S. Padron, Y. Deng, H.B. Gupta and T.J. Curiel**. First Affiliated Hosp., Sun Yat-sen Univ., China and UTHealth, San Antonio. **(136.3)**

8:45 Increasing intratumoral dendritic cells to potentiate anti-tumor effects of Newcastle disease virus-based immunotherapy. **J. Svensson-Arvelund, S. Cuadrado-Castano, L. Hammerich, M. Yellin, H. Marsh, B.D. Brown, A. García-Sastre and J. Brody**. Icahn Sch. of Med., Mount Sinai and Celldex Therapeut. **(136.4)**

9:00 Immunodominant and cryptic tumor neoantigen-specific immune responses activated by an armed oncolytic virus expressing a PD-L1 inhibitor . **G. Wang**. Univ. of Southern California. **(136.5)**

9:15 Influenza vaccination administered in the tumor induces an inflamed tumor microenvironment and reduces tumor growth. **J.H. Newman, B. Chesson, N. Herzog, P. Bommareddy, S. Aspromonte, R. Pepe, R. Estupinian, M. Aboelatta, S. Buddhadev, J. Schenkel, P. Thomas, J. Rudra, A. Silk and A. Zloza**. Rutgers Cancer Inst. of New Jersey, Univ. of Texas MD Anderson Cancer Ctr., Massachusetts Inst. of Technol., St. Jude Children's Res. Hosp., Washington Univ., St. Louis, Harvard Med. Sch. and Rush Univ. Med. Ctr. **(136.6)**

9:30 Activation of human immune cells with cowpea mosaic virus. **M.M. Albakri, V. Beiss, S.N. Fiering, N.F. Steinmetz and S.F. Sieg**. Case Western Reserve Univ., Univ. of California, San Diego and Dartmouth Geisel Sch. of Med. **(136.7)**

9:45 Cold . . . is not so cold: CD4+ T cells are active but suppressed in colorectal cancer. **J.M. Jessup**. Inova Schar Cancer Inst. **(136.8)**

209. NATIONAL INSTITUTE OF ARTHRITIS AND MUSCULOSKELETAL AND SKIN DISEASES (NIAMS) SYMPOSIUM: SINGLE CELL DECONSTRUCTION OF RHEUMATOID SYNOVIUM AND LUPUS KIDNEY BY THE RA/SLE ACCELERATING MEDICINES PARTNERSHIP (AMP) NETWORK

NIH-Sponsored Session

MON. 10:15 AM—ROOM 26AB

CHAIRS: *J. ANOLIK, M. BRENNER*

10:15 AMP approach and what we have learned about RA synovial pathotypes. **J. Anolik.** Univ. of Rochester.

10:39 The immune landscape in the RA synovium. **S. Raychaudhuri.** Brigham and Women's Hosp.

11:03 The stromal cell landscape in the RA synovium from single cell analysis. **M. Brenner.** Brigham and Women's Hosp.

11:27 New insights into renal resident cells from the AMP Lupus Nephritis cohort. **C. Putterman.** Albert Einstein Col. of Med.

11:41 The immune cell landscape in lupus nephritis kidneys. **P. Hoover.** Broad Inst.

210. BASIC AUTOIMMUNITY: ROLE OF MICROBES

Block Symposium

MON. 10:15 AM—ROOM 32AB

CHAIRS: *P. KENDALL, A. MANGALAM*

10:15 Aberrant MDA5 signaling and IFN-β synthesis elicit protection from coxsackievirus-accelerated type 1 diabetes. **S.I. Blum, A.R. Burg, Y-G. Chen and H.M. Tse**. Univ. of Alabama, Birmingham and Med. Col. of Wisconsin. **(178.7)**

10:30 A single infection with a malaria parasite protects mice from lethal autoimmune glomerulonephritis. **L. Amo, H.K. Kole, B. Scott, I.N. Moore, C-F. Qi, J. Wu, H. Wang and S. Bolland**. NIAID, NIH and Comparative Med. Branch, Infectious Dis. Pathogenesis Section, NIAID, NIH. **(178.2)**

10:45 Dysbiosis reprograms the differentiation of thymus-derived regulatory T cells. **K. Wang, B-H. Yang and W. Fu**. Univ. of California, San Diego. **(178.16)**

11:00 Induction of regulatory B cells by bacterial DNA in the gut microbiota at early age is beneficial in lupus-prone mice. **Q. Mu, B. Swartwout, X. Cabana-Puig, J. Grieco, T.E. Cecere and X.M. Luo**. Virginia Tech. **(178.11)**

11:15 B cells, bugs, bowels, and bones: Bruton's tyrosine kinase deficiency alters gut B lymphocyte populations and IgA recognition of commensal bacteria in autoimmune arthritis. **R. Bonami, C. Thurman, L. Nyhoff, B. Barron and P.L. Kendall**. Vanderbilt Univ. Med. Ctr. **(178.17)**

11:30 Interactions between the host genome and the gut microbiome determine susceptibility to CNS autoimmune disease. **T.L. Montgomery, Q. Fang, A. Künster, H. Busch, C. Teuscher and D. Krementsov**. Univ. of Vermont and Univ. of Lübeck, Germany. **(178.3)**

11:45 Linking diet, gut microbiota and autoimmunity: a phytoestrogen diet alters the gut microbiota and influences experimental autoimmune encephalomyelitis (EAE). **S.N. Freedman, S. Shahi, K. Zarei, A. Gupta, N. Guseva, A. Bossler, K.L. Legge and A.K. Mangalam**. Carver Col. of Med. Univ. of Iowa and Dept. of Pathology, Univ. of Iowa. **(178.13)**

12:00 IL-17A control CNS inflammatory disease by regulating Treg cells through modulation of gut microbiota in HLA class-II transgenic mice model of multiple sclerosis (MS). **S.K. Shahi, S.N. Freedman, A.C. Murra, K. Zarei, N.V. Guseva, K.G. Corley, A. Bossler, N.J. Karandikar and A.K. Mangalam**. Carver Col. of Med., Univ. of Iowa. **(178.14)**

211. T CELL RECEPTOR SIGNALING

Block Symposium

MON. 10:15 AM—ROOM 31ABC

CHAIRS: *A. SNOW, T-H. TAN*

10:15 GTPase-activating protein (RASAL1) associates with ZAP-70 of the TCR and negatively regulates T cell proliferation and anti-tumor immunity. **C.E. Rudd, Y.R. Thaker, M. Raab and K. Strebhardt**. Univ. de Montreal, Canada, Univ. of Essex, United Kingdom, J.W. Goethe Univ., Germany and W.T. Goethe Univ., Germany. **(184.4)**

10:30 Signaling from individual opioid receptors differentially modulates the functional and phenotypic potential of resting and activated human CD8+ T cells. **C. Mazahery, S. Valadkhan and A.D. Levine**. Case Western Reserve Univ. **(60.8)**

10:45 CCDC134 facilitates T cell activation and inflammatory responses by regulating T cell receptor signaling. **J. Huang, T. Zhang, B. Yu, S. Yin and X. Qiu**. Sch. of Basic Med. Sci., Peking Univ. Hlth. Sci. Ctr., China. **(186.5)**

11:00 JNK inhibition by transforming growth factor-β type I receptor (TGF-β RI) in T cells. **R. Jacks and M. Iwashima**. Loyola Univ. Chicago. **(184.9)**

11:15 T-cell signaling in Th17-mediated inflammation. **T-H. Tan and H-C. Chuang**. Natl. Hlth. Res. Inst., Taiwan. **(124.7)**

11:30 Molec. background of Orai1 accumulation in the immunological synapse. **Or. Vörös, G. Panyi and P. Hajdu**. Fac. of Med., Univ. of Debrecen, Hungary and Fac. of Dentistry, Univ. of Debrecen, Hungary. **(184.3)**

11:45 TMEM16F regulates bystander TCR-CD3 membrane binding at the immunological synapse. **A. Connolly, R. Panès, A. Bellemare-Pelletier and E. Gagnon**. Univ. of Montreal, Canada. **(184.7)**

12:00 FOXP3, CD48, and autophagy confer the protection of CD4 and CD8 human T cells from T cell receptor restimulation-induced cell death. **K. Voss, N.M. Lott, C. Lake, B.M. Bauman, B. Dorjbal, C.R. Luthers, S. Arjunaraja, C.L. Dalgard and A.L. Snow**. Uniformed Serv. Univ. of the Hlth. Sci. **(184.5)**

212. REGULATORY MECHANISMS

Block Symposium

MON. 10:15 AM—ROOM 30AB

CHAIRS: *J. LUKENS, E. ZUNIGA*

10:15 Dysregulation of lipid metabolism during gram-negative sepsis in Mkp-1 deficient mice. **A.J. Batty, J. Li, X. Wang, W.E. Ackerman, S.G. Kirk, W.M. White, X. Wang, D. Anastasakis, L. Samavati, I. Buhimschi, L.D. Nelin, M. Hafner and Y. Liu**. Nationwide Children's Hosp., NIH, NIAMS, NIH and Ctr. for Molec. Med. and Genet. **(187.2)**

10:30 The ssDNA exonucleases PLD3 and PLD4 are required to prevent lethal primary HLH-like disease in mice. **A.L. Gavin, D. Huang and D. Nemazee**. Scripps Res. Inst. **(187.6)**

10:45 Key roles for the innate immune response to genotoxic stress in neurological disease. **J.R. Lukens, C.E. Bellinger, E.L. Frost, M.E. Shaw, A.C. Bolte and C.R. Lammert**. Univ. of Virginia. **(187.7)**

11:00 Deciphering liver environmental signaling pathways for Kupffer cell identity. **M. Sakai, T.D. Troutman, J.S. Seidman, Z. Ouyang, N.J. Spann, Y. Abe, K. Ego, C.M. Bruni, J.C.M. Schlachetzki, A. Nott, H. Bennett, J. Chang, B.C.T. Vu, M. Pasillas, V.M. Link, L. Texari, S. Heinz and C.K. Glass**. Univ. of California, San Diego. **(187.21)**

11:15 Loss of miR-146a skews the dendritic cell milieu in favor of CD8a+CD103+ cross-presenting migratory dendritic cells and reduces production of IL-27. **P.A. Flynn and E.F. Lind**. Oregon Hlth. & Sci. Univ. **(187.29)**

11:30 Chronic viral infection induces metabolic reprograming of plasmacytoid dendritic cells. **T.T. Greene, Y. Jo and E. Zuniga**. Univ. of California, San Diego. **(187.28)**

11:45 MCMV-experienced ILC1 acquires an m12-dependent memory response. **T.E. O'Sullivan, O-E. Weizman, J.R. Carlyle and J.C-Y. Sun**. David Geffen Sch. of Med., Univ. of California, Los Angeles, Mem. Sloan Kettering Cancer Ctr. and Univ. of Toronto. **(187.8)**

12:00 A role for allosteric disulfides in regulating the function of human killer cell receptor KIR2DL4. **S. Rajagopalan, G. Mastorakos and E.O. Long**. LIG, NIAID, NIH. **(187.9)**

213. CELLULAR AND MOLECULAR MECHANISMS OF VACCINES FOR ENHANCING PROTECTIVE IMMUNE RESPONSES

Block Symposium

MON. 10:15 AM—ROOM 25ABC

CHAIRS: *D.W. PASCUAL, V.H. KONJUFCA*

10:15 Regulatory cell therapy for Sjögren's syndrome with *E. coli* colonization factor antigen I fimbriae. **A. Akgul, A.S. Nelson, M. Maddaloni, C. Hoffman, B. Ella, J.R. Abbott, C. Nguyen and D.W. Pascual**. Univ. of Florida. **(196.2)**

10:30 CD40 ligand multi-trimer antigen fusion protein (MagaVax) as a vaccine design for high-level CD8+ T cell responses. **R.S. Kornbluth, C. Adase, V.S. Hamilton and S. Studer**. Multimeric Biotherapeutics, Inc. **(196.6)**

10:45 Designing pathogen-like particles to augment vaccine potency through the induction of broadened and synergistic innate immune responses. **R. Toy, P. Pradhan, M.C. Keenum, N. Jhita, E. Blanchard, A. Atalis, N. Narang, C. Chukwu, G. Cortes, M.S. Suthar, P. Santangelo, D. Shayakhmetov and K. Roy**. Georgia Inst. of Technol. and Emory Univ. Sch. of Med. **(196.7)**

11:00 Per oral inoculation with live or killed *Chlamydia muridarum* induces protection against per-vaginal *C. muridarum* challenge. **N. Shillova, S.E. Howe and V.H. Konjufca**. Southern Illinois Univ. **(196.9)**

11:15 CD4 T Cells modulate the protective vs. pathologic response of CD8 T cells during viral infection. **E. Luna**. Arizona State Univ. **(196.11)**

11:30 Differential infection of dendritic cell subsets by virus-based vaccine platforms. **C. Chiale and M.D. Robek**. Albany Med. Col. **(196.18)**

11:45 NKT cells induce IgG1 class switch against *C. difficile* carbohydrate antigens and enhance immunity against a live pathogen challenge. **M.L. Lang, G.A. Lang, S.A. Amani, B. Shrestha, T. Shadid, A.F. Gillaspy and J.D. Ballard**. Univ. of Oklahoma Hlth. Sci. Ctr. **(196.19)**

12:00 Targeting antigen to lymph node lymphatic endothelial cells under steady-state to promote archiving and memory. **C.D. Maulloo, D.S. Wilson, J.A. Hubbell and M.A. Swartz**. Univ. of Chicago. **(196.20)**

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Invited and Guest Symposia Speakers

Ablasser, A., IFM Therapeutics, LLC – 1, 5, 7 (41)
Anderson, A., Aximmune; Compass Therapeutics; Potenza Therapeutics; Tizona Therapeutics; Zumutor – 5; 9; 9; 9; 9 (107)
August, A., 3M Corporation – 3 (31, 88)
Bhattacharya, D., Forty Seven, Inc.; Sana Biotechnology – 1; 1, 5 (142)
Butts, C., Biogen, Inc. – 4 (31, 49)
Cherry, S., Merck – 3 (199)
Collin, M., Genovis AB; Hansa Medical AB – 1, 5; 1, 2, 3, 5 (97, 151, 161)
Conejo-Garcia, J., Anixa Biosciences; Compass Therapeutics – 1, 3, 5, 6, 9; 1, 3, 5, 6, 9 (199)
Copper, M., Altor BioScience a NantWorks Company – 3 (160)
Crampton, S., Atyr Pharma – 1, 4 (49)
Crowe, J., Compuvax; GigaGen; IDBiologics; Meissa Vaccines; Moderma; Novavax; Pfizer; Sanofi; Takeda – 9; 9; 6; 9; 3; 5; 5; 3, 5; 5 (199)
Delgoffe, G., Bluebird Biok; Pfizer; Pieris Pharmaceuticals; TCR2; TTMS, Inc.; Western Oncolytics – 3; 3; 5; 3; 2, 3; 5 (200)
Farber, D., Bristol Myers Squibb – 3 (25)
Goldrath, A., Pandion – 1, 5 (142)
Hafler, D., Bristol-Myers Squibb; Compass Therapeutics; EMD Serono; Genentech; JDRF; Novartis Pharmaceuticals; Proclara Bioscience; Sanofi Genzyme; Versant Venture – 3; 5; 5; 3, 9; 10; 5; 9; 5; 5 (16)
Harris, C., Admirx Inc.; GSK; Gyroscope Therapeutics; Iontas; Rapharma; Roche – 5, 9; 5; 5; 3; 3; 9 (100)
Hartmann, G., Rigontec GmbH – 1, 5 (41)
Hildebrand, W., Pure MHC LLC; Pure Protein LLC; Pure Transplant LLC – 1, 2, 5, 6, 7; 1, 2, 5, 6, 7; 1, 2, 5, 6, 7 (97, 153)
Hornung, V., Inflazome – 9 (41)
James, S., Merck Pharmaceuticals – 6 (30)
Kim, B., AbbVie; Concert; Incyte; Kiniksa; Locus Biosciences; Menlo; Nuogen Pharma; Pfizer; Regeneron; Sanofi; Theravance – 5; 5; 5; 5; 1; 5; 6; 5; 5; 5; 5 (141)
Locksley, R., Genentech – 9 (141)
Maude, S., Kite Pharma; Novartis Pharmaceuticals – 5; 5 (107)
Mohanakumar, T., NIH – 3 (33)
Morel, L., Janssen – 5 (200)
Nagler, C., ClostraBio, Inc. – 1, 3 (98)
Pickl, W., Astra Zeneca; Biomay AG; EFIS; Novartis; Pfizer – 5; 1; 7; 5; 5 (151)

Powell, J., AbbVie; Bluebird; BMS; Corvus; Dracen: Millipore-Sigma; Quadriga; Sityrx – 3; 3; 3; 1, 3, 5; 1, 3, 5; 5; 3, 5; 1, 5 (200)
Quintana, F., AnTolRx. Inc.; Kyn Therapeutics; Synlogics – 1, 5, 6. 7; 9; 3 – (47, 201)
Rast, J., NovAb, Inc. – 1 (26)
Reed, E., Immucor – 3 (153)
Riddell, S., Juno – a Celgene company; Lyell Immunopharma – 1, 3, 5; 1, 3, 5 (107)
Roers, A., Celgene – 3 (41)
Rosenberg, S., Kite Pharma – 3 (174)
Sauer, K., Torque Therapeutics – 1, 4 (49, 97)
Smider, V., Indapta Therapeutics; NIH; Taurus Biosciences – 1, 9; 3; 1, 7 (26)
Snyder, M., NIM NIGMS R25 GM058264; R25 GM110070; HHMI – 3; 3; 3 (30)
Sokol, C., Adeo Health Sciences – 1, 9 (141)
Turk, M., Celdara Medical, LLC – 1, 6 (17)

Authors

Acuff, N., BioLegend—4 (52.20, 64.15)
Adams, J., Arena Pharmaceuticals—4 (119.31)
Adase, C., Multimeric Biotherapeutics, Inc.—4 (196.6)
Agorku, D., Miltenyi Biotec—4 (134.15, 194.26)
Ahearn, J., Exagen Diagnostics—2 (182.8)
Ahmad, G., Torque Therapeutics—4 (71.10)
Allen, I., Angiodynamics—3 (194.31)
Alm, K., Phase Holographic Imaging—4 (131.14)
Alvarez, C., Boehringer Ingelheim—3 (190.71)
An, W., BioLegend, Inc.—4 (184.6)
Anderson, A., Compass Therapeutics; Potenza Therapeutics; Tizona Therapeutics; Zumutor Biologics—9; 9; 9; 9 (137.15)
Andresen, T., Torque Therapeutics—4; 4 (71.10, 136.20)
Antonchuk, J., STEMCELL Technologies Inc.—4 (71.3)
Ashworth, A., AstraZeneca—3 (130.6)
Austin, C., Genentech Inc.—4 (132.4)
Bagwell, C., Fluidigm—5 (131.2)
Bailey, C., NanoString Technologies—4 (131.26)
Bailey, M., NanoString Technologies—4 (131.26)
Bansal, N., BD Biosciences—4 (131.35)
Bansal-Pakala, P., Janssen Pharmaceutical Companies of Johnson & Johnson—4 (57.9)
Bao, J., Akadeum Life Sciences—4 (131.1)
Baracho, G., BD Biosciences—4 (131.35)
Baranov, V., Fluidigm—1, 4 (131.2)
Baranska, A., Miltenyi Biotec—4 (194.26)
Bardwell, P., Torque Therapeutics—4 (136.20)
Barrio, A., 10x Genomics—4 (131.13, 131.4, 194.29)
Barski, A., Datirium, LLC—6 (125.13)
Barsoumian, H., RadScopal Trademark—6 (136.11)
Bhandari, R., Celdara Medical LLC—3 (182.37)
Blanchette, C., Genentech Inc.—4 (132.4)
Bonissone, S., Digital Proteomics—4 (123.16, 131.23)
Boutet, S., 10x Genomics; OneTraction Inc; Fluidigm—4; 7; 10 (131.4, 194.29)
Bradford, J., Thermo Fisher Scientific—4 (131.41)
Brauner, J., Miltenyi Biotec—4 (134.15)
Brehm, M., The Jackson Laboratory—3, 5 (126.37)
Brieschke, B., Molecular Templates—4 (70.21)
Bristol, N., Protein Fluidics—4 (51.20)
Brix, L., Immudex—4, 7 (131.13, 131.4)
Brown, B., iRepertoire—4 (131.24, 131.25, 131.28, 131.6)
Browning, J., F. Hoffmann-La Roche Ltd; Lupus Research Alliance—3; 5 (182.49)
Budhu, S., Agenus—2 (136.23, 137.3)
Byrne-Steele, M., iRepertoire Inc.—4; 4 (131.6, 131.24, 131.25, 131.28)
Calderon, V., Thermo Fisher Scientific—4 (130.16)
Cali, J., Promega Corporation—4 (52.19)
Camblin, A., Merrimack Pharmaceuticals—4 (195.11)
Campbell, J., ChemoCentryx, Inc—1, 4 (133.7)
Campesato, L.F., Merck—5 (137.3)
Cao, Y., Genentech Inc.—4 (132.4)
Carambula, R., CEL-SCI Corporation—1 (133.4)
Carr, D., Rational Vaccines Inc.—5, 9 (75.19)
Caruso, S., Torque Therapeutics—4 (136.20)
Chan, L., Nexcelom Bioscience—4 (130.8)
Chan, S., Genentech Inc.—4 (132.4)
Chan, T., An2H; AstraZeneca; Bristol-Myers Squibb; Eisai; Gritstone Oncology; Illumina; Personal Genome Diagnostics; Pfizer—3; 3; 3; 3; 6; 3; 2; 3 (137.11)
Chanan-Khan, A., Affimed Therapeutics, AG—3 (71.12)
Chang, D-K., Torque Therapeutics—4 (71.10)
Charo, I., ChemoCentryx, Inc—4 (133.7)
Chen, P., STEMCELL Technologies Inc.—4 (71.3)
Chhina, V., ChemoCentryx, Inc—4 (133.7)
Chi, E., Janssen Pharmaceutical Companies of Johnson & Johnson—4 (57.9)
Chiba, K., Mitsubishi Tanabe Pharma Corporation—4 (132.1)
Cho, B., Protein Fluidics—4 (51.20)
Chow, K., BioLegend—4 (130.24, 130.25)
Christopher, R., Arena Pharmaceuticals—10 (119.31)
Chronopoulou, E., BioLegend, Inc.—4 (184.6)
Chu, S., Molecular Templates—4 (70.21)
Ciemielewski, J., CEL-SCI Corporation—1 (133.4)
Cobb, B., Boehringer Ingelheim—3 (190.71)
Cooper, L., CellChorus; Ziopharm Oncology—6; 4, 6 (134.2)
Cornelison, G., Molecular Templates—4 (70.21)
Cortez, M.A., RadScopal Trademark—6 (136.11)
Covey, T., Acerta Pharma B.V.—4 (136.19)
Cox, B., CoPharm Global Consulting; TriSalus Life Sciences, Inc.—5; 5 (71.1, 130.1)
Crawford, J., Genentech—4 (133.3)
Criado-Moronati, E., Miltenyi Biotec—4 (194.26)
Cromwell, E., Protein Fluidics—6 (51.20)
Crosby, C., Arena Pharmaceuticals—4 (119.31)
Daftarian, P., JSR Life Sciences; MBL International—4; 4 (195.35)
Dai, B., Genentech inc.—4 (132.4)
Dang, T., ChemoCentryx, Inc—4 (133.7)
Darou, S., BioSpherix—4 (131.14)
Darwish, M., Genentech Inc.—4 (132.4)
Davalos, R., Angiodynamics—3 (194.31)
Davidson, B., Luminex Corporation—4 (131.5)
Dekker, J., Molecular Templates—4 (70.21)
Deng, L., Imvaq therapeutics—3, 6, 9 (197.8)
Depinet, M., iRepertoire—4 (131.24, 131.25, 131.28)

Dervieux, T., Exagen Diagnostics—4, 7 (182.8)
DiAntonio, A., Disarm Therapeutics—9 (64.1)
Divekar, A., BioLegend—4 (52.20, 64.15)
Dose, C., Miltenyi Biotec—4 (130.31, 134.15, 194.26)
Druker, B., Aileron Therapeutics, Vivid Biosciences; Aptose, Blueprint, Third Coast Therapeutics, GRAIL, Beta Cat; Burroughs Wellcome Fund; Cepheid; Gilead; Monojul; Novartis, Bristol-Meyers Squibb, Pfizer; OHSU, Dana Farber Cancer Institute—9; 1; 7; 9; 9; 5; 3; 2 (195.10)
Drummond, D., Merrimack Pharmaceuticals—4 (195.11)
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Eaves, A., STEMCELL Technologies Inc.—6; 6 (71.3, 130.14)
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Edgcomb, S., BPS Bioscience—4 (71.19)
Eidenschenk, C., Genentech—4 (133.3)
Eisenhower, M., iRepertoire—4 (131.25, 131.28)
Eisinger, D., Myriad RBM—4 (130.22)
Elia, J., BioLegend, Inc.—4 (184.6)
Elliott, N., Nanostring Technologies—4 (131.26)
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