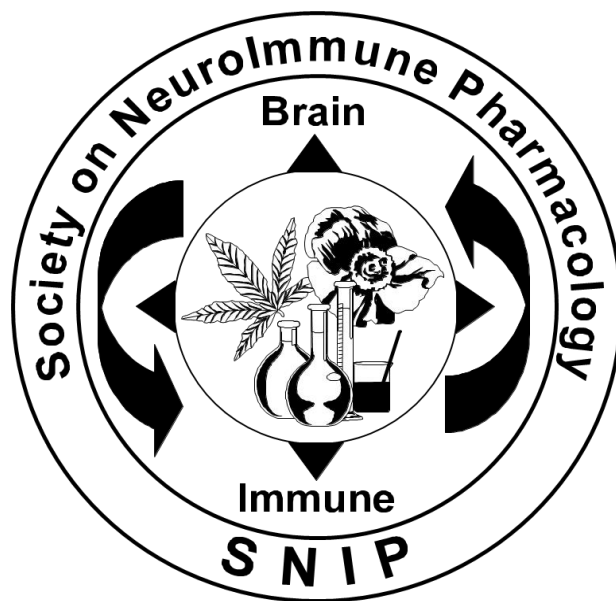


Society on NeuroImmune Pharmacology (SNIP)



## 23<sup>rd</sup> Scientific Conference

**Hotel DOUBLETREE BY HILTON  
PHILADELPHIA CENTER CITY**

**Philadelphia, PA, USA**

**March 29 - April 1, 2017**

**Previous Conferences:**1993 Toronto Hilton, Canada; 1994 Breakers, Palm Beach, FL; 1995 Bristol Court, San Diego, CA; 1996 Caribe Hilton, San Juan, PR; 1997 Opryland Hotel, Nashville TN; 1998 Scottsdale Princess, Scottsdale, AR; 2000 NIH Mazur Auditorium, Bethesda MD; 2001 Emory University, Atlanta, GA; 2002 Clearwater Beach Hilton, Clear Water, FL; 2004, La Fonda Hotel, Santa Fe, NM; 2005 Clearwater Beach Hilton, Clear Water, FL; 2006 La Fonda Hotel, Santa Fe, NM; 2007 City Center Marriott Hotel, Salt Lake City, UT; 2008 Francis Marion Hotel, Charleston, SC; 2009 Pearl Plaza Howard Johnson, Wuhan, China; 2010 Manhattan Beach Marriott, Manhattan Beach, CA; 2011 Hilton Clearwater Beach Resort, Clear Water Beach, FL; 2012 Hawaii Prince Hotel, Honolulu, HI; 2013 Conrad Hilton, San Juan, PR; 2014 Intercontinental New Orleans, LA.; 2015; Hyatt Regency, Miami, FL; 2016, Hotel Galaxy, Krakow, Poland.

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## Acknowledgements

The Society on NeuroImmune Pharmacology (SNIP) expresses its deep appreciation for the contributions made by so many individuals and institutions in support of this 23<sup>rd</sup> SNIP Scientific Conference in Philadelphia, PA, USA. The scientific program and symposia were developed by the Meetings Committee and Symposia Chairs in coordination with the Executive Committee. Other aspects of the conference agenda were organized by the Executive Committee and local organizing team. Special thanks go to the local hosts from the Department of Pharmacology & Physiology at Drexel University College of Medicine; Drs. Olimpia Meucci (Chair) and Peter Gaskill for their work in organizing the meeting on-site as well as the local symposium. We also thank Dr. Kamel Khalili, Chair of the Department of Neuroscience and Director of the Comprehensive NeuroAIDS Center at Temple University, for organizing the City-Wide NeuroAIDS Discussion Group as a satellite symposium. The society would also like to thank Mr. Kevin Tarn and Mr. Mitchell Patel for generating the flyer for the 23<sup>rd</sup> conference.

## Sponsors and Contributors

The Society on NeuroImmune Pharmacology (SNIP) sincerely thanks the following sponsors who have generously contributed to different activities during the 23<sup>rd</sup> Society of NeuroImmune Pharmacology Scientific Conference, 2017.





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President, Ponce Research  
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promote diversity and inclusion”*

THE MIAMI CENTER FOR AIDS RESEARCH



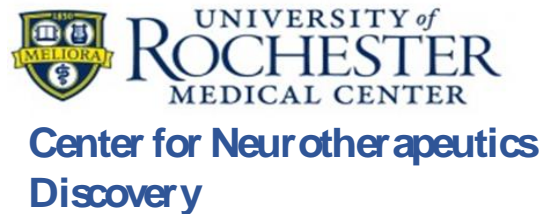
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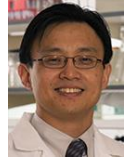
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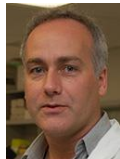
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## **Annual Society Awards**

Each year the Society recognizes a few of its members who have exemplified unique qualities of leadership, service and/or scholarship on behalf of the Society and its mission. The following awards are bestowed annually.

### **Herman Friedman Founders Award**

*For Visionary Contributions in the Establishment and Continued Development of the Society*

This award is named in honor of Herman Friedman, PhD, a man who promoted the study of drugs of abuse, infections, and immunity, promoted meetings among scientists based on this theme, and was a founding member of the Society. He passed away in 2007. This award recognizes individuals whose contribution to SNIP was visionary and served as a key to the founding of the Society and/or its continued development and perpetuation.

### **Distinguished Services Award**

*For Extraordinary Service to Society and to the Accomplishment of its Mission*

The Distinguished Services Award recognizes an individual whose efforts and commitment to the society has been both consistent and exemplary over protracted years of service.

### **Outstanding Service and Support Award**

*For Extraordinary Service to Society and to the Accomplishment of its Mission*

This award is given in recognition of individuals who are not necessarily investigators or members, but who have provided extraordinary service in facilitating the operation of Society initiatives. Examples would include individuals who often work “behind the scenes” to facilitate the Society by work on its publications, fundraising, and/or in the organization or conduct of meetings and symposia.

### **Lifetime Achievement Award**

*For Outstanding Lifetime Contribution to the Advancement of the Mission of the Society*

The Lifetime Achievement Award recognizes an individual who has contributed a sustained and extraordinary effort throughout their career on behalf of the society and its goals.

### **Wybran Award**

*For Extraordinary Contributions that Help to Integrate the Fields of Neuroimmunology, Drugs Of Abuse, and Immunity to Infection*

Joseph Wybran, MD, was trained in Immunology and worked for some time in the USA before returning to his Brussels home. He was a seminal contributor through the 1970s and into the 1980s to the integration of the fields of neuroimmunology, drugs of abuse and immunity to infection. As a measure of the impact that his science had on the field of neuroimmune pharmacology, his seminal paper published in the Journal of Immunology 1979 regarding the ability of endogenous and exogenous opioids to modulate T cell rosette formation in a naloxone reversible way was the most cited research article through the early 1980s. He was killed, presumably, by terrorists reacting to his leadership and participation in Jewish causes. He was shot in his car in



the parking lot of his work, October 3, 1989 in Brussels. Sadly, this tragedy occurred at the peak of Joe's career. The Wybran Award was created to memorialize Joe's scientific prestige in the area of neuroimmune pharmacology. It is meant, most particularly, to serve as a remembrance of his leading contributions that underpin SNIP. The Wybran Award is the highest honor bestowed by SNIP in recognition of the very best scientific contributions that have resulted in the preservation and expansion of the field of Neuroimmune Pharmacology.

## **Early Career Investigator Travel Award Winners 2017**

To promote interest in the field of Neuroimmune Pharmacology and recognize the excellent work being done by Early Career Investigators in this field, the Society provides Early Career Investigator Travel Awards (ECITA) to graduate students and post-doctorate trainees (within 5 years of Ph.D.) working with a SNIP member and seeking funds to attend the annual conference. For the 2017 SNIP Scientific Conference, 41 graduate students and 22 post-doctoral fellows were given travel awards. All awardees received a registration waiver, 35 were awarded a full travel award of \$750 and 13 were awarded a certificate of excellence. Candidates receiving past SNIP support or representing the 3<sup>rd</sup> trainee from a mentor received only registration waiver or certificate of excellence. The top 6 graduate students and the top 6 post-doctorate fellows were selected by the ECITA committee to give a talk at the Early Career Investigator Symposium. Six speakers were also selected by the Diversity and Inclusion SNIP Committee (DISC) to give a talk at the DISC Symposium. Special thanks to the ECITA and DISC committees, and the SNIP leadership for their service and support.

### **Pre-doctoral Awardees**

<b>Awardee</b>	<b>Mentor</b>	<b>Affiliation</b>
Liao, K	Buch, S	University of Nebraska Medical Center
McLaurin, KA	Mactutus, CF	University of South Carolina
Borgmann, K	Ghorpade, A	University of North Texas Health Science Center
Ojha, CR	El-Hage, N	Florida international university
Tiwari, Sneham	Nair, M	Florida International University
Zhou, RH	Ho, Wenzhe and and Li, JL	Temple/Wuhan University, China
Lutton, EM	Ramirez, SH	Lewis Katz School of Medicine
Zhao, RZ	Huang, YH	University of Nebraska Medical Center
Zhang, L	Roy, S	University of Minnesota
Hill, JD	Persidsky, Y	Lewis Katz School of Medicine, Temple University
Jaureguiberry-Bravo, M	Berman, JW	Albert Einstein College of Medicine
Joshi, C.R	Ghorpade, A	University of North Texas Health Science Center
Nookala, Anantha Ram	Kumar, A	University of Missouri-Kansas City
Wallace, JW	Al-Harhi, LA	Rush University Medical Center
Wenzel, ED	Mocchetti, I	Georgetown University
Strauss, MJ	Zhu, J	University of South Carolina

Lapierre, J	El-Hage, N	Florida International University
Cannella, L.A	Ramirez, SH	Lewis Katz School of Medicine Temple University
Hermes, D.J	Fitting, S	University of North Carolina Chapel Hill
Ohene-Nyako, M	Napier, T. C	Rush University
Guo, Le	Ho, Wenzhe	Temple University School of Medicine
Martinez-Orengo, N	Noel, R	Ponce Health Sciences University
Patters, BJ	Kumar, S	University of Tennessee Health Science Center
Singal, M.S.C	SETH, P	National Brain Research Centre, India
Xu, Xiqiu	Ho, Wenzhe and Zhou, Li	Wuhan University, China
Ranjit, S	Kumar, S	University of Tennessee Health Science center
Veilleux, CA	Eugenin, EA	Rutgers University
Grlickova-Duzevik, E	Cao, L	University of Maine
Lakpa, L	Geiger, J. D. and Chen, X	University of North Dakota
Arabatzis, TJ	Cao, L	University of New England
Rodriguez-Santiago, RE	Rivera-Amill, V	Ponce Health Sciences University
Deaver, JA	Toborek, M and Eum, SY	University of Miami
Lambo, R	Noel, R	Ponce Health Sciences University
Edara, VVC	Ghorpade, A	University of North Texas Health Science Center
Cranston, MN	Mactutus, CF	University of South Carolina
Coelho, MC	Cosentino, MC	University of Insubria
Balog, EM	Mactutus, CF	University of South Carolina
Gong, Y	Kumar, S	University of Tennessee Health Science Center
Garcia-Justiniano, J	Rivera-Amill, V	Ponce Health Sciences University
Abdalla, F	Anil , K and Bhat, H	University of Missouri Kansas City
Dutta, R	Unwalla, H	Florida International University

### **Post-doctoral Awardees**

<b>Awardee</b>	<b>Mentor</b>	<b>Affiliation</b>
Campbell, LA	Harvey, BK	National Institute on Drug Abuse
Lutgen, V	Al-Harathi, L	Rush University Medical Center
Meng, J	Roy, S	University of Miami
Rodriguez, M	El-Hage, N	Florida International University
		University of North Texas Health Science Center
Pandey, R	Ghorpade, A	University of Miami
Sharma, U	Roy, S	University of Tennessee Health Science Center
Midde, NM	Kumar, S	University of Miami
Bertrand, L	Toborek M	University of Miami
Skowronska, M	Toborek, M	University of Miami
Luo, F	Ho, WZ and Hou, W	Wuhan University
		New Jersey Medical School-Rutgers University
Malik, S	Eugenin, EA	University of Nebraska Medical Center
Sil, S	Buch, S	University of Nebraska Medical Center
Cantres-Rosario, YM	Melendez, LM	University of Puerto Rico

Nikkhah-Moshaie, Roozbeh	Nair, M	Florida International University
Avila, Diana	Toborek M	University of Miami
Chivero, ET	Buch, S	University of Nebraska Medical Center
Leda, AR	Toborek, M	University of Miami Miller
Moidunny, S	Roy, S.	University of Miami
Cho, HJ	Toborek, M	University of Miami
Khan, Nabab	Geiger, J	University of North Dakota
Parikh, NU	Mahajan, S	University at Buffalo
Wang, Yang	Wang, Jing	Zhengzhou University, China

**ECITA Awardees are expected to attend all sessions of the conference to be eligible for travel award support.**

## PLENARY SPEAKERS



Dr. David Sulzer, Ph.D., Professor, Departments of Psychiatry, Neurology, and Pharmacology, Columbia University Medical Center, NY, USA

Dr. Sulzer is a Professor of Psychiatry, Neurology, and Pharmacology at Columbia University Medical Center and the New York Psychiatric Institute. His lab conducts research devoted to understanding the synapses of the basal ganglia, particularly in investigating how synapses of the cortex, striatum, and dopamine neurons are selected to underlie learning and decision making; and elucidating the causes of diseases that produce disorders of the basal ganglia, including Parkinson's, Huntington's, drug dependence, autism and schizophrenia. Sulzer has authored over 150 publications that have been cited over 25,000 times in the field of dopamine and basal ganglia synaptic physiology and disease, and has introduced multiple new therapeutic directions. His awards include the McKnight, the NARSAD Distinguished Investigator Award, and plenary talks for many international conferences. He founded the Gordon Conference on Parkinson's Disease, and the new journal Nature NPG Parkinson's Disease.



Dr. Paul Kenny, Ph.D., Ward-Coleman Professor and Chair of the Arthur M. Fishberg Department of Neuroscience, Mount Sinai School of Medicine, NY, USA

Dr. Kenny is the Ward-Coleman Professor and Chairman of the Department of Neuroscience and Director of the Drug Discovery Institute at the Icahn School of Medicine at Mount Sinai in New York. He received a degree in biochemistry from Trinity College Dublin and his Ph.D. in psychopharmacology from King's College London. He completed his post-doctoral training in neuropharmacology at The Scripps Research Institute in La Jolla, California. Research in Dr. Kenny's laboratory is focused on the molecular neurobiology of drug addiction, obesity and schizophrenia. Dr. Kenny is also involved in efforts to develop novel small molecule therapeutic agents for the treatment of drug addiction and other psychiatric indications, and is the co-founder of Eolas Therapeutics, Inc. Dr. Kenny is a handling editor for the Journal of Neuroscience and a member of the National Advisory Council on Alcohol Abuse and Alcoholism (NIAAA). Dr. Kenny has won numerous awards for his research, including the Jacob P. Waletzky Memorial Award, Society for Neuroscience and the Tom Connor Distinguished Investigator Award, Neuroscience.



Dr. Astrid Cardona, Ph.D., Associate Professor of Immunology, University of Texas at San Antonio, TX, USA

Dr. Astrid Cardona is an Associate Professor of immunology at the University of Texas at San Antonio. After receiving her Ph.D. in Microbiology and Immunology in 2002 at the University of Texas Health Science Center at San Antonio she continued her post-postdoctoral training at the Cleveland Clinic in the Department of Neurosciences at the Lerner Research Institute. During her trajectory at the Cleveland Clinic she received a post-doctoral fellowship from the National Multiple Sclerosis

Society and then she became a Research Associate and also held a Project Staff Position. In 2009 she joined The University of Texas at San Antonio, where she is currently a faculty member of the Department of Biology and a member of the South Texas Center for Emerging Infectious Diseases.

Dr. Cardona's research laboratory is focused in neuroinflammation and she is the principal investigator in research projects aimed to understand the damage that occurs to the brain during chronic diseases such as Multiple Sclerosis, Diabetic retinopathy and Neurocysticercosis. Dr. Cardona discovered a key neuronal-microglial communication signal mediated by the chemokine fractalkine and has developed several new models to confirm the neuroprotective effects of fractalkine and its mechanisms of action. Her research has been supported by the National Institutes of Health, the National Multiple Sclerosis Society and the San Antonio Area Foundation.



Dr. Serena Spudich, M.D., Professor of Neurology; Division Chief, Neurological Infections & Global Neurology, Yale University, CT, USA

Serena is Professor of Neurology and Chief, Division of Neurological Infections and Global Neurology at Yale. She earned her medical degree from UCSF, pursued residency training in internal medicine at UW, neurology at Harvard, and fellowships in neuroID and neuroHIV at Harvard and UCSF. Her clinical and translational research explores HIV in the nervous system, focusing on effects of acute HIV infection, antiretroviral treatment, and HIV cure strategies on HIV pathogenesis and persistence in the central nervous system. She collaborates with colleagues of multiple disciplines in clinical studies in urban centers in the United States and in international settings, exploring questions of CNS inflammation, injury, and compartmentalization of HIV. She was the first neuroscientist elected to the AIDS Clinical Trials Group (ACTG) HIV Reservoirs and Eradication Transformative Science Group, is Chair Ex-Officio of the ACTG Neurology Collaborative Science Group, co-leads the International NeuroHIV Cure Consortium (<http://www.inhcc.net>), and leads multiple projects addressing the pathobiology of NeuroHIV. She cares for HIV-infected patients with neurological disorders in the Nathan Smith HIV Clinic at Yale.



Dr. Paul McGonigle, Director, Division of Interdisciplinary and Career-Oriented Programs; Professor of Pharmacology & Physiology, Director, Drug Discovery and Development Program, Drexel University, College of Medicine, Philadelphia, PA, USA

Dr. McGonigle is a neuropharmacologist and drug discovery professional who has held various positions in the biopharmaceutical industry and in academia. His primary research and professional focus has been on drug discovery for psychiatric and neurodegenerative disorders. He joined Drexel University in 2012 to direct the newly formed Drug Discovery and Development Program and was appointed the Director of the Interdisciplinary and Career-oriented program in 2014. He previously served as the CSO of PsychoGenics Inc., a behavioral neurobiology company, where his efforts were focused on the development and application of proprietary technologies to discover novel drugs for CNS disorders. In this capacity, he supervised numerous drug discovery programs and spearheaded the formation of several partnerships with pharmaceutical and biotech companies.

Prior to joining PsychoGenics, he co-founded and served as the CEO of NeuroGenix Corp., a biopharmaceutical company established to use neurogenesis as the basis for the discovery of new treatments for psychiatric and neurodegenerative disorders. He also served on the Board of Directors of Brain Cells Inc., a neurogenesis-based drug discovery company. Before forming NeuroGenix, Dr. McGonigle was the Director of Psychiatric Disorder Research at Wyeth where he supervised all aspects of drug discovery related to psychiatric disorders. Under his leadership, several compounds for the treatment of depression, anxiety, schizophrenia and cognitive impairment were successfully advanced to clinical trials. Prior to joining Wyeth, he was on the faculty of the Department of Pharmacology at the University of Pennsylvania where his research focused on neurotransmitter receptors involved in psychiatric and neurodegenerative disorders. Dr. McGonigle has served on a number of NIH advisory panels and review committees and is a member of multiple editorial boards.

# CONFERENCE AGENDA

23<sup>rd</sup> Annual Scientific Conference  
March 29 - April 1, 2017

Wednesday March 29, 2017

Registration Opens 2:00 – 5:00 pm  
Retrieve name tag, pick-up meeting materials; choose from banquet menu

**City-Wide NeuroAIDS Discussion Group** 2:00 – 5:00 pm

*Organized by the Comprehensive NeuroAIDS Center (CNAC) at the Lewis Katz School of Medicine at Temple University, Philadelphia, USA*

**Dr. Kamel Khalili, Ph.D.,** 2:00 – 2:05 pm  
Professor and Chair, Department of Neuroscience, Director, Comprehensive NeuroAIDS Center  
Lewis Katz School of Medicine at Temple University, Philadelphia, PA, USA  
*Welcoming Remarks*

Session Chairs: **Dr. Jeffrey Jacobson, M.D.** and **Dr. Tricia Burdo, Ph.D.**

**Dr. Antonio Valentin, M. D., Ph.D.** 2:05 - 2:35 pm  
Staff Scientist, Vaccine Branch, Center for Cancer Research, National Cancer Institute at Frederick,  
National Institutes of Health  
*Prospects for AIDS vaccine and immunotherapies*

**Dr. Fred Krebs, Ph.D.** 2:35 – 2:50 pm  
Associate Professor, Department of Microbiology & Immunology Drexel University College of  
Medicine  
*Linking genetic variants of HIV-1 Vpr to pathogenesis in the blood and brain*

**Dr. Rafal Kaminski, Ph.D.** 2:50 – 3:05 pm  
Associate Scientist, Department of Neuroscience and Center for Neurovirology Lewis Katz School of  
Medicine at Temple University  
*Negative feedback elimination of HIV-1 by CRISPR: A direct strategy toward a cure of AIDS*

Break 3:05 – 3:20 pm

Session Chairs: **Dr. Brian Wigdahl, Ph.D.** and **Dr. Jennifer Gordon, Ph.D.**

**Dr. Kelly Jordan-Sciutto, Ph.D.** 3:20 - 3:50 pm  
Professor and Chair, Department of Pathology, The Robert Schattner Center  
University of Pennsylvania School of Dental Medicine  
*Role for the B Amyloid Precursor Protein Convertase Enzyme 1 in HIV associated neuronal damage*

**Dr. Stephani Velazquez, Ph.D.** 3:50 – 4:05 pm  
Postdoctoral Fellow, Department of Neuroscience, Lewis Katz School of Medicine at Temple University  
*Modulation of the kynurenine pathway and inflammatory markers in SIV and HIV infection: Implications for HIV cure and treatment of comorbid conditions*

General Discussion & Closing Remarks 4:05 – 5:00 pm

## **The 23<sup>rd</sup> SNIP Scientific Conference**

Opening Reception & Trainee Poster Session (W1-72) 5:00 – 8:00 pm  
*Sponsored by the Early Career Investigator Committee*  
(Food and drinks provided - Odd poster numbers will be judged from 5- 6:30 and even numbers from 6:30-8 pm. All presenters need to be standing at their posters during their assigned time.)

1<sup>st</sup> Annual DISC Networking Hour 8:00 – 10:00 pm  
*Sponsored by the Diversity and Inclusion SNIP Committee*  
Introduction: **Dr. Kelly Jordan-Sciutto, Ph.D.**, University of Pennsylvania, School of Dental Medicine, PA, USA

Speaker: **Dr. Ana Nuñez, M.D.**, Associate Dean for Diversity, Equity and Inclusion, Drexel University College of Medicine, PA, USA  
Diversity, Equity and Inclusion in Neuroimmune Pharmacology – A Mentoring Challenge  
(Dessert and drinks provided)

Thursday March 30, 2017

Breakfast 7:00 – 8:00 am

Presidents' Welcome 8:00 – 8:10 am  
**Dr. Michal Toborek, M.D., Ph. D.**, University of Miami, Miami, FL, USA

Presidential Symposium 8:10 – 9:50 am  
**Dopamine Neurotransmission in HIV-1 Infection**

### **Dedicated to the work and memory of Dr. Adarsh Kumar**

Chairs: **Dr. Vishnudutt Purohit, Ph.D.**, NIDA, NIH, MD, USA  
**Dr. Habibeh Khoshbouei, Pharm.D., Ph.D.**, University of Florida, FL, USA

**Dr. Mahendra Kumar, Ph.D.**, University of Miami, FL, USA  
*Introduction*

**Dr. Peter J. Gaskill, Ph.D.**, Drexel University College of Medicine, PA, USA  
*Role of Dopamine Receptor Activation in HIV Entry*



**Dr. Franca Marino**, Ph.D., University of Insubria, Varese, Italy  
*Dopamine and immunity: from basic evidence to therapeutic opportunities*

**Dr. Jun Zhu**, Ph.D., University of South Carolina, SC, USA  
*Molecular mechanism of HIV-1 Tat interacting with human dopamine Transporter*

**Dr. Rosemarie Booze**, Ph.D., University of South Carolina, SC, USA  
*HIV-1 disrupts motivational processes via dopamine transporter dysregulation*

**Dr. T. Celeste Napier**, Ph.D., Rush University, IL, USA  
*Pathophysiology of the nucleus accumbens in HIV-1 transgenic rats is potentiated by cocaine self-administration*

**Dr. Jay McLaughlin**, Ph.D., University of Florida, Gainesville, FL, USA  
*Brain Exposure to HIV-1 Tat Protein Potentiates the Psychostimulant Effects of Morphine, Modulates Consumption and Reinstates Extinguished Reward-Seeking*

Break 9:50 – 10:10 am

Presidential Symposium 10:10 – 11:00 am

Introduction: **Dr. Michal Toborek**, M.D., Ph. D., University of Miami, FL, USA

Speaker: **Dr. David Sulzer**, Ph.D., Columbia University Medical Center, NY, USA  
*Antigen display by dopamine neurons*

Symposium 2 11:00 – 12:30 pm

**Novel mechanisms of CNS infection by emerging neurotropic viruses**

Chairs: **Dr. Eliseo A. Eugenin**, Ph.D., Rutgers University, USA  
**Dr. Mark Challberg**, Ph.D. NIAID, NIH, MD, USA

Speakers:  
**Dr. Mark Challberg**, Ph.D., NIAID, NIH, MD, USA  
*Introduction to Flaviviruses*

**Dr. Eliseo Eugenin**, Ph.D., Rutgers University, NJ, USA  
*Flaviviruses, a critical threat: Focus in CNS*

**Dr. Laura Yockey**, Ph.D., Yale University, CT, USA  
*Zika and CNS development*

**Ms. Courtney Veilleux**, Rutgers University, NJ, USA  
*Productive Zika infection in the human brain*

**Dr. Catherine Blish**, Stanford University, CA, USA

*Zika virus infection induces cranial neural crest cells to produce cytokines at levels detrimental for neurogenesis*

Meet the Mentors Luncheon

12:30 – 2:00 pm

*Sponsored by the Early Career Investigator Committee*

SNIP Council Meeting

12:30 – 2:00 pm

Plenary Pharmacology Lecture

2:00 – 2:45 pm

Introduction: **Dr. Marcus Kaul**, Ph. D., SBP Med. Discovery Inst., La Jolla, CA, USA

Speaker: **Dr. Paul Kenny**, Ph.D., Mount Sinai School of Medicine, New York, NY, USA

*Immune signaling in the habenula and nicotine addiction*

Break (take down posters from Wednesday Poster session)

2:45 – 3:00 pm

Symposium 3

3:00 – 4:30 pm

**Role of microbiome in health and disease: Implications in HIV disease progression and drug abuse**

Chair: **Dr. Sabita Roy**, Ph.D., University of Miami, FL, USA

**Dr. Dan Knights**, Ph.D., University of Minnesota, MN, USA

Plenary talk: *Linking the Microbiome to Clinical Outcomes*

**Dr. Shilpa Buch**, Ph.D., University of Nebraska, NE, USA

*Opening statement*

**Dr. Jason Brenchley**, Ph.D., NIAID, MD, USA

*Does induction of microbial dysbiosis affect disease progression?*

**Dr. Charles Mactutus**, Ph.D., University of South Carolina, SC, USA

*Integrity of the microbiome of the HIV-1 transgenic rat: Efficacy of the gut-brain-axis for treatment of neurocognitive impairment*

**Dr. Sabita Roy**, Ph.D., University of Miami, FL, USA

*Role of Gut Microbiome in Morphine induced analgesic tolerance*

**Dr. Santanu Banerjee**, Ph.D., University of Miami, FL, USA

*HIV and morphine-induced microbial dysbiosis in NSG-BLT humanized mice and putative pulmonary-intestinal cross-talk*

**Dr. Ivan Vujkovic-Cvijin**, Ph.D., NIH, MD, USA

*Mining the endogenous antibody repertoire to identify pro-inflammatory gut bacteria in HIV*

Break (Put up Posters for Thursday Night Poster Session) 4:15 – 5:00 pm

Poster Session (T1-81) 5:00 – 8:00 pm  
(Food and drinks provided - Odd poster numbers will be judged from 5- 6:30 and even numbers from 6:30-8 pm. All presenters need to be standing at their posters during their assigned time.)

JNIP Editorial Board Meeting 7:00 – 9:00 pm

Friday March 31, 2017

Breakfast 7:00 – 8:00 am

Local Symposium 8:00 – 10:30 am  
**Neuroinflammatory Bases of Cognitive Impairment and Other CNS Disorders**

Chairs: **Dr. Olimpia Meucci**, M.D., Ph.D., Drexel University, Philadelphia, PA, USA  
**Dr. Dennis Kolson**, M.D., Ph.D., Univ. of Pennsylvania, Philadelphia, PA, USA

**Dr. Norman Haughey**, Ph. D., Johns Hopkins University, MD, USA  
*Neuroinflammation in Multiple Disease States*

**Dr. Francesco Petrelli**, Ph.D., University of Lausanne, Lausanne, Switzerland  
*Neuroglia interactions and neurotransmission: new focus on monoaminergic pathways*

**Dr. Angelo Lepore**, Ph.D., Thomas Jefferson University, Philadelphia, USA  
*Neuroinflammatory mechanisms in axon regeneration and neuropathic pain following SCI: role of astrocyte communication with microglia and macrophages*

**Dr. Davide Ragozzino**, Ph.D., University La Sapienza, Rome, Italy  
*Microglia shape presynaptic properties of glutamatergic CA1 synapses*

**Dr. Joan W. Berman**, Ph.D., Albert Einstein College of Medicine, NY, USA  
*CCL2-driven mechanisms of neuroinflammation & drug abuse*

**Dr. Robert Nagele**, Ph.D., Rowan University, NJ, USA  
*Autoantibodies as biomarkers in neurodegenerative diseases*

Break 10:15 – 10:30 am

Adarsh Kumar Memorial Lecture 10:30 – 11:25 am  
Introduction: **Dr. Kelly Jordan-Sciutto**, Ph.D., Univ. of Pennsylvania, Philadelphia, PA, USA

Speaker: **Dr. Astrid Cardona**, Ph.D., University of Texas at San Antonio, TX, USA  
*Absence of fractalkine/CX3CR1 induces perivascular clustering of microglia and fibrinogen leakage during systemic inflammation in mouse models of diabetic retinopathy*

Symposium 5

11:30 – 12:30 pm

**Mechanisms of mitochondrial dysfunction associated with HIV-induced neurotoxicity**

Chairs: **Dr. Adam Fields**, Ph.D., University of California at San Diego, CA, USA  
**Dr. Vasudev Rao**, MD., NIMH, MD, USA

**Dr. Todd Hulgan**, M.D., M.P.H., Vanderbilt University, TN, USA  
*Mitochondrial DNA variation and HIV-associated neurotoxicity*

**Dr. Josue Perez Santiago**, Ph.D., University of California San Diego, CA, USA  
*Mitochondrial Injury and Aging in HIV Infection*

**Dr. Valeria Avdoshina**, M.D., Ph.D., Georgetown Univ. Med. Center, Washington, DC, USA  
*Neurotoxic effect of Human Immunodeficiency Virus: cytoskeleton, mitochondria, and neuronal apoptosis*

**Dr. Kelly Stauch**, Ph.D., University of Nebraska, Medical Center, Omaha, NE, USA  
*Mechanisms of Synaptic Energetic Failure: commonalities between mitochondrial functional alterations in HIV, aging, and neurodegenerative diseases*

Lunch 12:30 - 2:00 pm

NIH Workshop on Grant Writing for Trainees 12:30 - 2:00 pm  
(Boxed lunch provided)

Participants:

**Dr. Roger Sorenson**, Ph.D., NIDA, NIH, MD USA  
**Dr. Vishnudutt Purohit**, Ph.D., NIDA, NIH, MD USA  
**Dr. Changhai Cui**, Ph.D., NIAAA, NIH, MD USA  
**Dr. Jeymohan Joseph**, Ph.D., NIMH, NIH, MD USA  
**Dr. Vasudev Rao**, Ph.D., NIMH, NIH, MD USA  
**Dr. Abraham Bautista**, Ph.D., Dir. OEA, NIAAA, NIH, MD, USA

Symposium 6

2:00 – 3:30 pm

**Alcohol and Neuroimmune Pharmacology**

Chairs: **Dr. Abraham Bautista**, Ph.D., Dir. OEA, NIAAA, NIH, MD, USA  
**Dr. Santosh Kumar**, Ph. D., Univ. of Tennessee Health Sci. Center, TN, USA

**Dr. Ilker K Sariyer**, DVM, Ph.D., School of Medicine, Temple University, Philadelphia, PA, USA  
*Pre-mRNA missplicing of MCL-1 is involved in ethanol induced neurotoxicity*

**Dr. Dayne Mayfield**, Ph.D., Waggoner Center for Alcohol and Addiction Research, University of Texas at Austin, Austin, TX, USA  
*Alcohol effects on microRNA, neuroimmune gene network, neuroinflammation*

**Dr. Marisa Roberto**, Ph.D., The Scripps Research Institute, San Diego, CA, USA  
*Neuroimmune factors in alcohol-induced neuroadaptation in the central amygdala*

**Dr. Michael Lewis**, Ph.D., Hunter College CUNY & Doctoral Program, CUNY Graduate Center Alcohol Neuropharmacology, NY, USA

*Alcohol neuropharmacology: Interaction with food intake and reward mechanisms*

**Dr. Hee-Yong Kim**, Ph.D., Laboratory of Molecular Signaling, NIAAA, Bethesda, MD, USA

*Docosahexaenoic acid in the nervous system: Modulation by ethanol*

**Dr. Narasimha Midde**, Ph.D., University of Tennessee Health Science Center, Memphis, TN, USA

*Role of cytochrome P450 in alcohol-mediated effects in brain cells: Strategy to target novel CYP pathway*

Break 3:30 – 4:00 pm

Workshop 4:00 – 5:30 pm

**Exploration of Alternate Career Options for Young Investigators in Neuroimmune Pharmacology**

Co-Chairs: **Dr. Sanjay B. Maggirwar**, Ph.D., University of Rochester, NY, USA

**Kathleen Borgmann**, University of North Texas, TX, USA

**Sanjay B. Maggirwar**, Ph.D., M.B.A., Univ. Rochester, Rochester, NY, USA

*Need to Reform Biomedical Workforce Training*

**Mark Skasko**, Chemist Reviewer, FDA

*Working at the FDA*

**Tracy Diamond**, Principal Scientist, Merck & Co. Inc.

*Internship and Post-Doctoral Programs for Graduate Students in Big Pharma*

**Benson Cheng**, Analyst, The Center for the Advancement of Science in Space, Melbourne, FL, USA.

*Job Opportunities within the US National Laboratories at the International Space Station in Lower Earth Orbit*

**Lynn Sniderhan Gottfried**, Tech Specialist, LeClair Ryan Law Firm, Rochester, NY, USA

*Career Opportunities in Intellectual Property*

Saturday April 1, 2017

Breakfast 7:00 – 8:30 am

Symposium 7 8:30 – 10:00 am

**Cannabinoids in the Immune System**

Chairs: **Dr. Roger Sorenson**, Ph. D., NIDA, NIH MD, USA

**Dr. Toby K. Eisenstein**, Ph.D., Temple University, PA, USA

**Dr. Pal Pacher**, MD, Ph.D., NIAAA, NIH, MD, USA

*Advances in the Role of CB2 Activation in the Attenuation of Inflammation*

**Dr. Yuri Persidsky**, M.D., Ph.D., Temple University, PA, USA

*Cannabinoid type 2 receptor activation in neuro-immune modulation at blood brain barrier: Role in neuroprotection*

**Dr. Yumin Zhang**, M.D., Ph.D., Uniformed Services University of Health Sciences, MD, USA

*Inhibition of the 2-AG hydrolytic enzyme ABHD6 in neuroinflammatory diseases*

**Dr. Toby K. Eisenstein**, Ph.D., Temple University, PA, USA

*CB2 Agonists as Immunosuppressive Molecules: Mechanisms of Action*

Break

10:00 – 10:25 am

Bill Narayan Memorial Lecture

10:25 – 11:30 am

Introduction: **Dr. Howard E. Gendelman**, M.D., University of Nebraska Medical Center, Omaha, NE, USA

Speaker: **Dr. Serena Spudich**, M.D., M.A., Yale University, CT, USA

*Establishment of CNS HIV-1 reservoirs and brain injury: Is typical antiretroviral therapy too little, too late?*

Early Career Investigator Symposium

11:30 – 2:30 pm

5 min presentations (+ 5 min discussion) by selected pre- and post-doctoral ECITA and DISC awardees. (Boxed lunch provided)

Chairs: **Dr. Marisela Agudelo**, Ph.D., Florida International University, Miami, FL, USA

**Dr. Madhavan Nair**, Ph.D., Founding Chair, Dept of Immunology, FIU, Miami, FL, USA

Pre-doctoral Awardees:

**Ke Liao, M.S.** Mentor: Shilpa Buch, Ph.D.

University of Nebraska Medical Center.

*Role of Autophagy in HIV Tat-mediated Disruption of Blood Brain Barrier*

**Kristen A. McLaurin, M.A.** Mentor: Charles F. Mactutus, Ph.D.,

University of South Carolina.

*Temporal Processing Deficits in the HIV-1 Transgenic Rat: Dopamine Transporter Dysfunction*

**Kathleen Borgmann, B.S.**, Mentor: Anuja Ghorpade, Ph.D.

University of North Texas Health Science Center.

*TAARgeting Astrocytic METH-mediated Mitochondrial Dysfunction*

**Chet Raj Ojha, M.S.** Mentor: Nazira El-Hage, PhD

Florida International University, Herbert Wertheim College of Medicine

*Drug-drug Interaction of cART and Morphine Mediated by Autophagy Exacerbates the Overall Effect of cART in Brain.*

**Sneham Tiwari, M.S.** Mentor: Madhavan Nair, Ph.D.

Florida International University. Herbert Wertheim College of Medicine.

*Withaferin A Suppresses Beta Amyloid in APP Expressing Cells: Studies for Neurocognitive Dysfunctions*

**Runhong Zhou, M.S.** Mentors: Wenzhe Ho, M.D. M.P.H. and Jieliang Li, Ph.D.

Lewis Katz School of Medicine at Temple University and School of Basic Medical Sciences at Wuhan University.

*Soybean Lectin Inhibits HIV Infection of Macrophages*

Post-doctoral Awardees:

**Victoria Lutgen, Ph.D.**, Mentor: Lena Al-Harhi, Ph.D.

Rush University Medical Center.

*Human Transplanted Astrocytes into NSG-HuPBMC Mice Demonstrate Astrocyte-initiated HIV Spread from the Brain to other Tissues*

**Jingjing Meng, Ph.D.**, Mentor: Sabita Roy, Ph.D.

University of Miami-Miller School of Medicine

*Compromised Intestinal Barrier Function by Opioids Accelerates HIV Disease Progression*

**Myosotys Rodriguez, Ph.D.**, Mentor: Nazira El-Hage, Ph.D.

Florida International University-Herbert Wertheim College of Medicine

*Intranasal Administration of Small Interfering (si) RNA Beclin1 Encapsulated with Linear Polyethylenimine (PEI) Nano-Plexes to Attenuate HIV-1 Infection in the Brain*

**Richa Pandey, Ph.D.**, Mentor: Anuja Ghorpade, Ph.D.

Institute of Molecular Medicine, University of North Texas Health Science Center.

*Alcohol Influences HAND via Astrocyte- TLR4 and cPLA2 Signaling*

**Luc Bertrand, Ph.D.**, Mentor: Michal Toborek, M.D., Ph.D.

University of Miami, Miller School of Medicine.

*Restoration of Rev Nucleo-cytoplasmic Shuttling Increases EcoHIV Infectivity in vitro and in vivo*

**Marta Skowronska, Ph.D.**, Mentor: Michal Toborek, M.D., Ph.D.

University of Miami, Miller School of Medicine.

*Methamphetamine Increases HIV-1 Infectivity in Neural Progenitor Cells*

DISC Awardees

Chairs: **Dr. Kelly Jordan-Sciutto**, Ph.D., Univ. of Pennsylvania, Philadelphia, PA, USA

**Dr. Howard E. Gendelman**, M.D., Univ. of Nebraska Med. Ctr, Omaha, NE, USA

Pre-doctoral Awardees:

**Wallace, JW**, MS, Mentor: Lena Al-Harhi, Ph.D.; Immunology and Microbiology, Rush University Medical Center, Chicago, IL, USA.

*Wnt7a regulates monocyte differentiation and MDM phenotype*

**Martinez-Orengo, N.**, BS, Mentor: Richard Noel, Ph.D., Ponce Research Institute, Ponce Health Sciences University, Ponce, PR, USA.

*HIV-1 Nef differentially modulates the TGFb pathway in astrocytes and neurons*

**Grlickova-Duzevik, E**, Mentor: Ling Cao, MD, Ph.D.; Graduate School of Biomedical Sciences and Engineering, University of Maine, Orono, ME, USA, and Biomedical Sciences, University of New England, Biddeford, ME, USA.

*The role of calcitonin gene related peptide (CGRP) in retroviral infection of glial cells*

**Lakpa, L**, BS, Mentors: Geiger, J. D., Ph.D.<sup>1</sup>, Chen, X., MD, Ph.D.<sup>1</sup>; <sup>1</sup>School of Medicine and Health Sciences, University of North Dakota, Grand Forks, ND, USA

*HIV-1 Tat induced acid store operated calcium entry (aSOCE) in primary cultured neurons*

Postdoctoral Awardees:

**Campbell, LA**, Ph.D., Mentor: Harvey, BK, Ph.D.; Molecular Mechanisms of Cellular Stress and Inflammation, National Institute on Drug Abuse, Baltimore, MD, USA

*Gesicle-Mediated Delivery of CRISPR/Cas9 for Inactivating the HIV Provirus*

**Cantres-Rosario, YM**, Ph.D., Mentors: Gorantla, S, Ph.D., and Melendez, LM, Ph.D.; Microbiology and Medical Zoology Department, University of Puerto Rico, Medical Sciences Campus and NeuroID Program, University of Puerto Rico, Rio Piedras Campus, San Juan, PR, USA, and Durham Research Center, University of Nebraska Medical Center, Omaha, NE, USA

*Cathepsin B in HIV infection: from macrophages to neurons*

SNIP Open Business Meeting 2:30 – 3:30 pm

Break 3:30 – 4:00 pm

Symposium 8 4:00 – 5:30 pm

**Computational and Systems Biology Applied to the Brain**

Chair: **Dr. Maria Cecilia Marcondes**, Ph.D., The Scripps Research Institute, La Jolla, CA, USA

**Dr. Celia M. Schunter**, Ph.D., King Abdullah University of Science and Technology, Thuwal, SA  
*The role of the brain in the adaptation to climate change*

**Dr. Chris Gaiteri**, Ph.D., AD Center, Rush University, Chicago, IL, USA  
*Neuroimaging the molecular state of the brain in cognitive decline and Alzheimer's disease*

**Dr. Michelli Faria de Oliveira**, Ph.D., University of California San Diego, CA, USA  
*HIV compartmentalization in the CNS*



**Dr. Maria Cecilia G. Marcondes**, Ph.D. The Scripps Research Institute, La Jolla, CA, USA  
*Astrocyte-specific signatures in response to methamphetamine exposure in vitro*

Banquet

7:00 – 10:00 pm

Hosted by the new SNIP president, **Dr. Jonathan Geiger**, Ph.D., University of North Dakota, Grand Forks, ND, USA

Introduction: **Dr. Olimpia Meucci**, M.D., Ph.D., Drexel University, Philadelphia, PA, USA

Speaker: **Dr. Paul McGonigle**, Ph.D., Director, Division of Interdisciplinary and Career-Oriented Programs; Professor of Pharmacology & Physiology, Director, Drug Discovery and Development Program, Drexel University, College of Medicine, Philadelphia, PA, USA

Title of presentation: *Academic drug discovery: Opportunities and challenges*

The presentation will be followed by a brief panel discussion.

Panelists:

**Katherine C. Jordan**, Ph.D., Coulter Program Director, School of Biomedical Engineering, Drexel University

**Michael Wood**, Ph.D., Principal, Neupharm, LLC (formerly Neuroscience Licensing and Collaborations Director, Astra Zeneca)

**Sandhya Kortagere**, Ph.D., Associate Professor, Department of Microbiology and Immunology, Drexel University College of Medicine and Chief Scientific Officer, Polycore Therapeutics

Announcements, Awards and Adjournment of Conference

Meeting adjourned.

**A survey questionnaire will be sent to all registered meeting participants in the weeks following the meeting. Please, take a few moments to participate in the post conference survey in order to help SNIP organizing the best possible future scientific meetings. Thank you!**

## LIST OF POSTER ASSIGNMENTS

Wednesday, March 29<sup>th</sup>

PRE-DOCTORAL POSTER SESSION (W1 – W72)

### Pre-Doctoral Scientists

#### **W1. Resveratrol Analog TIMBD Inhibits HIV1-gp120 Associated Inflammation in Human Astrocytes**

ABDALLA, F., MS<sup>1</sup>, Nookala, A, BS<sup>1</sup>, Kumar, A, Ph.D.<sup>1</sup>, Bhat, H, Ph.D.<sup>1</sup>; <sup>1</sup>Pharmacology and Toxicology, University of Missouri Kansas City, Kansas City, MO, 64108 United States.

#### **W2. CRISPR/Cas9-mediated excision of HIV-1 proviral genome sequences**

Allen, A.<sup>1</sup>, Sullivan, N<sup>1</sup>, Nonnemacher, M<sup>1</sup>, Dampier, W<sup>1</sup>, Homan, G<sup>1</sup>, Desimone, M<sup>2</sup>, Pirrone, V<sup>1</sup>, Kercher, K<sup>1</sup>, Passic, S<sup>1</sup>, Williams, J<sup>1</sup>, Wigdahl, B<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>2</sup>School of Biomedical Engineering and Health Systems, Drexel University, Philadelphia, PA, 19104 United States.

#### **W3. LP-BM5 virus Exacerbates Murine AIDS-associated symptoms in gp120 transgenic mice**

Arabatzis, TJ., BS<sup>2</sup>, Wakley, AA, Ph.D.<sup>1</sup>, McLane, VD, Ph.D.<sup>3</sup>, Cao, L, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Biomedical Sciences: College of Osteopathic Medicine, University of New England, Biddeford, ME, 04005 United States. <sup>2</sup>College of Arts and Sciences, University of New England, Biddeford, ME, 04005 United States. <sup>3</sup>Graduate School of Biomedical Sciences and Engineering, University of Maine, Orono, ME, 04005 United States.

#### **W4. Neurocognitive Impairment in the HIV-1 Transgenic Rat at an Advanced Age**

Balog, EM., BS<sup>1</sup>, McLaurin, KA, MS<sup>1</sup>, Booze, RM, Ph.D.<sup>1</sup>, Mactutus, CF, Ph.D.<sup>1</sup>; <sup>1</sup>Program in Behavioral Neuroscience, Department of Psychology, University of South Carolina, Columbia, SC, 29208 United States.

#### **W5. PERK Haplotype Function in HIV-Associated Neurocognitive Disorders**

Bond, S., BS<sup>1</sup>, Stutzbach, L, Ph.D.<sup>1</sup>, Gannon, P., Ph.D.<sup>1</sup>, Akay-Espinoza, C., MD<sup>1</sup>, Jordan-Sciutto, K., Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pathology, University of Pennsylvania, Philadelphia, PA, 19104 United States.

#### **W6. TAARgeting Astrocyte Mitochondrial Dysfunction during HIV-associated Neuroinflammation and METH Exposure.**

Borgmann, K., BS<sup>1</sup>, Ghorpade, A, Ph.D.<sup>1</sup>; <sup>1</sup>Institute For Molecular Medicine, University of North Texas Health Science Center, Fort Worth, TX, 76107 United States.

#### **W7. Pathologic changes in the NAc post experimental TBI and susceptibility to the rewarding effects of a subthreshold dose of cocaine following brain injury**

Cannella, L.A., MS<sup>2</sup>, Maynard, M.<sup>1</sup>, Andrews, A.A., Ph.D.<sup>1</sup>, Rawls, S.M., Ph.D.<sup>2</sup>, Ramirez, S.H., Ph.D.<sup>3</sup>; <sup>1</sup>Department of Pathology and Laboratory Medicine, Lewis Katz School of Medicine Temple University, Philadelphia, PA, 19140 United States. <sup>2</sup>Center of Substance Abuse Research, Lewis Katz School of Medicine Temple University, Philadelphia, PA, 19140 United States. <sup>3</sup>Shriners Hospitals Pediatric Research Center, Lewis Katz School of Medicine Temple University, Philadelphia, PA, 19140 United States.

#### **W8. Computational characterization of off-target effect on HIV-1 excision gRNAs in the human genome**

Chung, C-H<sup>1</sup>, Nonnemacher, M<sup>1</sup>, Wigdahl, B<sup>1</sup>, Dampier, W<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States.

#### **W9. Unravelling the role of beta-adrenergic signaling in gastric cancer**

Coelho, MC., MS<sup>1</sup>, Rasini, ER, BS<sup>1</sup>, Luini, AL, BS<sup>1</sup>, Legnaro, ML, BS<sup>1</sup>, Marino, FM, Ph.D.<sup>1</sup>, Ribeiro, LR, Ph.D.<sup>2</sup>, Cosentino, MC, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Center for Research in Medical Pharmacology, University of Insubria, Varese, Varese, 21100 Italy. <sup>2</sup>Department of Biochemistry, Faculty of Medicine, University of Porto, Porto, Porto, 4200-319 Portugal.

#### **W10. A microstructure behavioral analysis of voluntary wheel running in HIV-1 Tg rats: evidence for dysregulation of motivation.**

Cranston, MN., MS<sup>1</sup>, Booze, RM, Ph.D.<sup>1</sup>, Harrod, SB, Ph.D.<sup>1</sup>, Mactutus, CF, Ph.D.<sup>1</sup>; <sup>1</sup>Program in Behavioral Neuroscience, Department of Psychology, University of South Carolina, Columbia, SC, 29208 United States.

**W11. Circadian Disruption Changes Gut Microbiome Taxa and Functional Gene Composition**

Deaver, JA<sup>1</sup>, Toborek, M, Ph.D.<sup>1</sup>, Eum, SY, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Biochemistry, University of Miami, Miami, FL, 33136 United States.

**W12. TGF-beta suppresses CFTR biogenesis and function by post-transcriptional gene silencing.**

Dutta, R. MS<sup>1</sup>, Chinnapaiyan, S, Ph.D.<sup>1</sup>, Nair, M, Ph.D.<sup>1</sup>, Unwalla, H, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, Florida International University, Miami, FL, 33199 United States.

**W13. Red/Green Astrocytes Mimic CNS Viral Reservoirs in post ART HAND: Implications for Meth abuse**

Edara, VVC. MS<sup>1</sup>, Ghorpade, A, Ph.D.<sup>1</sup>; <sup>1</sup>Institute for Molecular Medicine, University of North Texas Health Science Center, Fort Worth, TX, 76107 United States.

**W14. In vivo manipulation of the CXCL12/CXCR4 signaling axis increases dendritic spine density and enhances cognitive flexibility in wild-type and HIV-Tg rats via the Rac1/PAK pathway**

Festa, L. MS<sup>1</sup>, Tian, Y, BS<sup>1</sup>, Platt, B, BS<sup>1</sup>, Floresco, S, Ph.D.<sup>2</sup>, Meucci, O, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology & Physiology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>2</sup>Department of Psychology, University of British Columbia, Vancouver, BC, V6T 1Z4 Canada.

**W15. Metabolomic analysis of astrocytes transfected with HIV-1 gp120**

Garcia-Justiniano, J. BS<sup>1</sup>, Rodriguez-Santiago, R. E., BS<sup>1</sup>, Garcia-Flores, Y., BS<sup>1</sup>, Pabon-Cruz, E., BS<sup>1</sup>, Rivera-Amill, V., Ph.D.<sup>1</sup>; <sup>1</sup>Ponce Research Institute, Ponce Health Sciences University, Ponce, PR, 00716 United States.

**W16. Nutraceutical Apigenin regulates DC function in a RelB-dependent manner during neuroinflammation**

Ginwala, R.<sup>1</sup>, McTish, E<sup>1</sup>, Moore, P.<sup>1</sup>, Revuri, N.<sup>1</sup>, Raman, C.<sup>2</sup>, Singh, N.<sup>3</sup>, Nagarkatti, M.<sup>3</sup>, Nagarkatti, P.<sup>3</sup>, Kranz, V.A.<sup>4</sup>, Houle, J.D.<sup>4</sup>, Jain, P.<sup>1</sup>, Khan, Z.K.<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, and the Institute for Molecular Medicine and Infectious Disease, Drexel University College of Medicine, Philadelphia, PA, 19129 United States. <sup>2</sup>Division of Clinical Immunology and Rheumatology, University of Alabama School of Medicine, Birmingham, AL, 35294 United States. <sup>3</sup>Department of Pathology, Microbiology and Immunology, University of South Carolina, Columbia, SC, 29208 United States. <sup>4</sup>Department of Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA, 19129 United States.

**W17. Chronic effects of alcohol on CYP2E1 mediated oxidative stress and HIV replication in primary macrophages and corroboration of this finding with clinical samples of HIV-infected alcohol drinkers**

Gong, Y<sup>1</sup>, Sinha, N<sup>1</sup>, Rao, PSS, Ph.D.<sup>1</sup>, Kumar, S, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmaceutical Sciences, University of Tennessee Health Science Center, Memphis, TN, 38163 United States.

**W18. The role of CD40 in calcitonin gene related protein (CGRP) mediated antiviral effect in glial cells**

Grlickova-Duzevik, E<sup>1</sup>, Cao, L, MD, Ph.D.<sup>2</sup>; <sup>1</sup>Graduate School of Biomedical Sciences and Engineering, University of Maine, Orono, ME, 04469 United States. <sup>2</sup>Biomedical Sciences, University of New England, Biddeford, ME, 04005 United States.

**W19. Heme oxygenase-1 protects against TNF-alpha-induced brain endothelial cell barrier permeability**

Gruenewald, AL. BS<sup>1</sup>, Gill, AJ, Ph.D.<sup>1</sup>, Alvarez, JI, Ph.D.<sup>2</sup>, Kolson, DL, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Neurology, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA, 19104 United States. <sup>2</sup>Department of Pathobiology, University of Pennsylvania School of Veterinary Medicine, Philadelphia, PA, 19104 United States.

**W20. TLR3 Activation of Human Intestinal Epithelial Cells Inhibits HIV Replication in Macrophages**

Guo, Le. MS<sup>1</sup>, Zhou, Li, Ph.D.<sup>2</sup>, Xu, Xiqiu, BS<sup>2</sup>, Li, Jieliang, Ph.D.<sup>1</sup>, Wang, Xu, Ph.D.<sup>1</sup>, Liu, Jinbiao, Ph.D.<sup>2</sup>, Zhuang, Ke, Ph.D.<sup>2</sup>, Liu, Hang, MS<sup>2</sup>, Zhang, Biao, MS<sup>2</sup>, Ho, Wenzhe, MD, M.Ph.<sup>1</sup>; <sup>1</sup>Department of Pathology and Laboratory Medicine, Temple University School of Medicine, Philadelphia, PA, 19140 United States. <sup>2</sup>School of Basic Medical Sciences, Wuhan University, Wuhan, Hubei, 430071 China.

**W21. PF3845 Attenuates HIV-1 Tat Mediated Neurotoxicity through Cannabinoid Signaling on Neurons and Astrocytes**

Hermes, D.J.<sup>1</sup>, Xu, C.<sup>1</sup>, Niphakis, M.J.<sup>2</sup>, Cravatt, B.F.<sup>2</sup>, Mackie, K.<sup>3</sup>, Lichtman, A.<sup>4</sup>, Ignatowska-Jankowska, B.<sup>5</sup>, Fitting, S.<sup>1</sup>; <sup>1</sup>Department of Psychology & Neuroscience, University of North Carolina Chapel Hill, Chapel Hill, NC, 27599-3270 United States. <sup>2</sup>Department of Chemical Physiology, Scripps Research Institute, La Jolla, CA, 92037 United States.

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**W22. Lipid-raft tool gone viral- US9 lends a HAND**

Hill, G<sup>1</sup>, Nash, B<sup>1</sup>, Brandimarti, R, Ph.D.<sup>1</sup>, Meucci, O, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology & Physiology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States.

**W23. Effects of GPR55 activation on neural stem cell proliferation, differentiation, and immune responses to chronic inflammation**

Hill, JD<sup>1</sup>, Zuluaga-Ramirez, V<sup>1</sup>, Winfield, M<sup>1</sup>, Gajghate, S<sup>1</sup>, Persidsky, Y, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pathology and Laboratory Medicine, Lewis Katz School of Medicine, Temple University, Philadelphia, PA, 19140 United States.

**W24. Buprenorphine decreases CCL2-Mediated Mature Monocyte Migration in the context of NeuroAIDS**

Jaureguierry-Bravo, M, MS<sup>1</sup>, Kelschenbach, JL, Ph.D.<sup>2</sup>, Carvallo, L, Ph.D.<sup>2</sup>, Gu, CJ, Ph.D.<sup>2</sup>, Volsky, DJ, Ph.D.<sup>2</sup>, Berman, JW, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pathology, Albert Einstein College of Medicine, New York, NY, 10461 United States.

<sup>2</sup>Department of Medicine, Division of Infectious Diseases, Icahn School of Medicine at Mount Sinai, New York, NY, 10029 United States.

**W25. Exosome mediated intercellular communication in chronic pain**

Jean-Toussaint, R, MS<sup>1</sup>, McDonald, M, Ph.D.<sup>1</sup>, Sacan, A, Ph.D.<sup>2</sup>, Ajit, S, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology and Physiology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>2</sup>School of Biomedical Engineering, Science and Health Systems, Drexel University, Philadelphia, PA, 19104 United States.

**W26. Polymeric Nanoparticles (NPs)-Mediated Gene Delivery to Human Astrocytes**

Joshi, C.R., MS<sup>1</sup>, Labhasetwar, V, Ph.D.<sup>2</sup>, Ghorpade, A., Ph.D.<sup>1</sup>; <sup>1</sup>Institute for Molecular Medicine, University of North Texas Health Science Center, Fort Worth, TX, 76107 United States. <sup>2</sup>Department of Biomedical Engineering, Cleveland Clinic Lerner Research Institute, Cleveland, OH, 44195 United States.

**W27. HIV-1 Tat induced acid store operated calcium entry (aSOCE) in primary cultured neurons**

Lakpa, L, BS<sup>1</sup>, Liang, H., MD, Ph.D.<sup>1</sup>, Geiger, J. D., Ph.D.<sup>1</sup>, Chen, X., MD, Ph.D.<sup>1</sup>; <sup>1</sup>School of Medicine and Health Sciences, University of North Dakota, Grand Forks, ND, 58202 United States.

**W28. Nef increases mitochondrial staining in U87 astrocytes**

Lamboy, R, MS<sup>1</sup>, Noel, R, Ph.D.<sup>1</sup>; <sup>1</sup>Ponce Research Institute, Ponce Health Sciences University, Ponce, Puerto Rico, 00716 Puerto Rico.

**W29. Autophagy is cytoprotective in neurons and necessary against Tat and morphine-induced toxicity in autophagy-deficient mice**

Lapierre, J, MS<sup>1</sup>, Rodriguez, M, Ph.D.<sup>1</sup>, El-Hage, N, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, Florida International University, Miami, FL, 33199 United States.

**W30. Role of Autophagy in HIV Tat-mediated Disruption of Blood-Brain Barrier**

Liao, K, MS<sup>1</sup>, Niu, F, MS<sup>1</sup>, Hu, G, Ph.D.<sup>1</sup>, Buch, S, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology & Experimental Neuroscience, University of Nebraska Medical Center, Omaha, NE, 68198 United States.

**W31. Computationally Driven Rational Design of HIV-1-LTR-Targeted CRISPR/Cas9 Therapy Dismisses HERVs as a Primary Source of Toxicity**

Link, R, BS<sup>1</sup>, Nonnemacher, MR, Ph.D.<sup>2</sup>, Wigdahl, B, Ph.D.<sup>2</sup>, Dampier, W, Ph.D.<sup>3</sup>; <sup>1</sup>School of Biomedical Engineering and Health Systems, Drexel University, Philadelphia, PA, 19104 United States. <sup>2</sup>Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>3</sup>Center for Molecular Virology and Translational Neuroscience, Institute for Molecular Medicine and Infectious Disease, Drexel University College of Medicine, Philadelphia, PA, 19102 United States.

**W32. Acute administration of endothelial-targeted catalase attenuates oxidative stress and reduces neuroinflammation in experimental traumatic brain injury**

Lutton, EM<sup>1</sup>, Razmpour, RR<sup>1</sup>, Shuvaev, VV, Ph.D.<sup>2</sup>, Muzykantov, VR, MD, Ph.D.<sup>2</sup>, Ramirez, SH, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pathology and Laboratory Medicine, Lewis Katz School of Medicine, Philadelphia, PA, 19140 United States. <sup>2</sup>ITMAT, University of Pennsylvania, Philadelphia, PA, 19104 United States.

**W33/34. Treatment with VDLP induction chemotherapy in acute lymphoblastic leukemia with TEL-AML1 and TEL-ABL rearrangements**

Mao, Shuting, MD<sup>1</sup>, Liu, Yufeng, MD, Ph.D.<sup>1</sup>; <sup>1</sup>the First Affiliated Hospital, Zhengzhou University, Zhengzhou, Henan, 450000 China.

**W35. HIV-1 Nef differentially modulates the TGF $\beta$  pathway in astrocytes and neurons**

Martinez-Orengo, N., BS<sup>1</sup>, Cruz, M., BS<sup>1</sup>, Noel, R., Ph.D.<sup>1</sup>; <sup>1</sup>Ponce Research Institute, Ponce Health Sciences University, Ponce, PR, 00716 United States.

**W36. Tight junction complex deregulation by morphine and HIV-1 Tat exposure in an in vitro blood-brain barrier system**

Maubert, M<sup>1</sup>, Kercher, K<sup>1</sup>, Strazza, M<sup>1</sup>, Pirrone, V<sup>1</sup>, Lin, W<sup>2</sup>, Feng, R<sup>2</sup>, Nonnemacher, M<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>2</sup>Department of Biostatistics and Epidemiology, Center for Clinical Epidemiology and Biostatistics, University of Pennsylvania School of Medicine, Philadelphia, PA, 19104 United States.

**W37. Temporal Processing Deficits in the HIV-1 Tg Rat: Dopamine Transporter Dysfunction**

McLaurin, KA, MS<sup>1</sup>, Li, H, MD, Ph.D.<sup>1</sup>, Booze, RM, Ph.D.<sup>1</sup>, Mactutus, CF, Ph.D.<sup>1</sup>; <sup>1</sup>Program in Behavioral Neuroscience, Department of Psychology, University of South Carolina, Columbia, SC, 29208 United States.

**W38. HIV-1 Tat variants derived from neurocognitively impaired patients may differentially transactivate HIV and host cell gene promoters**

Mele, A<sup>1</sup>, Antell, G<sup>2</sup>, Dampier, W<sup>1</sup>, Pirrone, V<sup>1</sup>, Aiamkitsumrit, B<sup>1</sup>, Williams, J<sup>1</sup>, Passic, S<sup>1</sup>, Kercher, K<sup>1</sup>, Zhong, W<sup>1</sup>, Szep, S<sup>2</sup>, Jacobson, J<sup>3</sup>, Wigdahl, B<sup>1</sup>, Hershberg, U<sup>2</sup>, Nonnemacher, M<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>2</sup>Department of Medicine, Division of Infectious Diseases and HIV Medicine, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>3</sup>Department of Medicine, Section of Infectious Disease, Lewis Katz School of Medicine, Temple University, Philadelphia, PA, 19140 United States.

**W39. Investigating the RNA-binding domain of transcription factor E2F1 in the neuronal context**

Meurice, C, BS<sup>1</sup>, Doa, AQ, BS<sup>2</sup>, Jackson, DP, Ph.D.<sup>2</sup>, Cho, G, BS<sup>3</sup>, Zyskind, JW, Ph.D.<sup>1</sup>, Jordan-Sciutto, KL, Ph.D.<sup>2</sup>; <sup>1</sup>Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, 19104 United States. <sup>2</sup>School of Dental Medicine, University of Pennsylvania, Philadelphia, PA, 19104 United States. <sup>3</sup>College of Arts and Sciences, University of Pennsylvania, Philadelphia, PA, 19104 United States.

**W40. Increased neuronal iron following exposure of cortical cultures to morphine drives upregulation of the Ferritin Heavy Chain protein, but iron loading is not sufficient to reproduce morphine's inhibition of CXCR4 signaling.**

Nash, B. S., BS<sup>1</sup>, Tarn, K., MS<sup>1</sup>, Nolan, R.A., BS<sup>1</sup>, Meucci, O., MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology & Physiology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States.

**W41. Immunosuppressive Effects of Cannabidiol in Mild and Moderate Disease States of Experimental Autoimmune Encephalomyelitis**

Nichols, JM<sup>1</sup>, Gilfeather, K, BS<sup>1</sup>, Yray, G<sup>1</sup>, Kummari, E, Ph.D.<sup>1</sup>, Dhital, S, Ph.D.<sup>1</sup>, Kaplan, BLF, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Basic Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS, 39762 United States.

**W42. A comparison of DRD2 transcript and protein expression in undifferentiated and differentiated neuronal cells.**

Nolan, R<sup>1</sup>, Tarn, K<sup>1</sup>, Gaskill, P, Ph.D.<sup>1</sup>, Meucci, O, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology and Physiology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States.

**W43. Methamphetamine augment HIV-1 Tat mediated memory deficits by altering the expression of synaptic proteins and neurotrophic factors**

Nookala, Anantha Ra, BS<sup>1</sup>, Kumar, Anil, Ph.D.<sup>1</sup>; <sup>1</sup>Division of Pharmacology and Toxicology, University of Missouri-Kansas City, Kansas City, MO, 64108 United States.

**W44. Self-administered methamphetamine by HIV-1 transgenic rats alters markers of neuronal activity and plasticity in the limbic brain**

Ohene-Nyako, M, MS<sup>1</sup>, Persons, A, Ph.D.<sup>1</sup>, Napier, T.C, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology, Rush University, Chicago, IL, 60612 United States.

**W45. Lipocalin-2 in HIV-induced neuronal damage**

Ojeda-Juárez, D, B.S.<sup>1</sup>, Shah, RL<sup>1</sup>, Sanchez, AB, Ph.D.<sup>1</sup>, Kaul, M; Ph.D.<sup>1</sup>, <sup>1</sup>Infectious and Inflammatory Disease Center, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, CA, 92037 United States.

**W46. Drug-drug interaction of cART and Morphine mediated by autophagy exacerbates the overall effect of cART in brain**

Ojha, CR, MS<sup>1</sup>, Lapierre, J, MS<sup>1</sup>, Estrada, H, BS<sup>1</sup>, Rodriguez, M, Ph.D.<sup>1</sup>, El-Hage, N, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, College of medicine, Florida international university, Miami, FL, 33199 United States.

**W47. Methamphetamine (METH) and HIV-tat mediated oxidative stress contributes to Mitochondrial dysfunction in microglia.**

Pariikh, NU, MD<sup>1</sup>, Aalinkeel, R, Ph.D.<sup>1</sup>, Reynolds, J, Ph.D.<sup>1</sup>, Quaye, E<sup>1</sup>, Cwiklinski, K, BS<sup>1</sup>, Skyes, D, Ph.D.<sup>1</sup>, Mammen, M, MD<sup>1</sup>, Sharikova, A, Ph.D.<sup>2</sup>, Khmaladze, A, Ph.D.<sup>2</sup>, Schwartz, S, MD, Ph.D.<sup>1</sup>, Mahajan, S, Ph.D.<sup>1</sup>; <sup>1</sup>Division of Allergy, Immunology and Rheumatology, University at Buffalo, Buffalo, NY, 14203 United States. <sup>2</sup>Department of Physics, University at Albany, Albany, NY, 12222 United States.

**W48. Functional effects of chronic alcohol stress in human monocyte-derived dendritic cells and the immunoprotective role of trichostatin A as demonstrated by single cell imaging flow cytometry**

Parira, Tiyash, MS<sup>1</sup>, Granado, Sherly<sup>1</sup>, Figueroa, Gloria, BS<sup>1</sup>, Agudelo, Marisela, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, 33199 United States.

**W49. Potential Role of Exosomes in Defense against Ethanol-Induced Oxidative Stress in the Central Nervous System (CNS)**

Patters, BJ, BS<sup>1</sup>, Kumar, S, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmaceutical Sciences, University of Tennessee Health Science Center, Memphis, TN, 38163 United States.

**W50. Mutation of human dopamine transporter aspartic acid206 displays a neutral effect on basal dopamine transport and attenuates Tat-induced inhibition of transport function**

Quizon, PM<sup>1</sup>, Yuan, Y<sup>2</sup>, Sun, WL<sup>1</sup>, Strauss, MJ<sup>1</sup>, Zhu, Y<sup>1</sup>, Zhou, Y<sup>1</sup>, Midde, NM<sup>1</sup>, Zhan, CG<sup>2</sup>, Zhu, J<sup>1</sup>; <sup>1</sup>Department of Drug Discovery and Biomedical Sciences, South Carolina College of Pharmacy, University of South Carolina, Columbia, SC, 29208 United States. <sup>2</sup>Molecular Modeling and Biopharmaceutical Center, and Department of Pharmaceutical Sciences, College of Pharmacy, University of Kentucky, Lexington, KY, 40536 United States.

**W51. Potential Role of Cytochrome P450s and Oxidative Stress in Benzop(a)pyrene-mediated HIV-1 Replication in Monocytic cells**

Ranjit, Sabina<sup>1</sup>, Sinha, N.<sup>1</sup>, Midde, N. M., Ph.D.<sup>1</sup>, Kumar, S., Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmaceutical Sciences, University of Tennessee Health Science center, Memphis, TN, 38163 United States.

**W52. Astrocyte expression of Nef can activate a pro-inflammatory response in the small intestine by macrophages**

Rivera Ortiz, J, MS<sup>1</sup>, Cruz Rentas, M, BS<sup>1</sup>, Noel, R, Ph.D.<sup>1</sup>; <sup>1</sup>Biochemistry, Ponce Health and Science University, Ponce, PR, 00732 United States.

**W53. Integrative Model of Medical Past, Inflammation Markers, and Microbiome in HIV Subjects with Sustained Virological Control**

Rodriguez-Santiago, RE, BS<sup>1</sup>, Sanchez, R, BS<sup>1</sup>, Garcia-Justiniano, J, BS<sup>1</sup>, Pabon-Cruz, E, BS<sup>1</sup>, Yamamura, Y, Ph.D.<sup>1</sup>, Rivera-Amill, V, Ph.D.<sup>1</sup>; <sup>1</sup>Ponce Research Institute, Ponce Health Sciences University, Ponce, PR, 00716 United States.

**W54. The Effects of Antiretroviral Therapies on Oligodendrocyte Growth and Maturation**

Roth, LR, BS<sup>3</sup>, Zidane, BZ, BS<sup>1</sup>, Jensen, BJ, Ph.D.<sup>1</sup>, Perlegos, AP, BS<sup>1</sup>, Grinspan, JG, Ph.D.<sup>2</sup>, Jordan-Sciutto, KJS, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pathology, School of Dental Medicine, University of Pennsylvania, Philadelphia, PA, 19104 United States. <sup>2</sup>Department of Neurology, Children's Hospital of Philadelphia, Philadelphia, PA, 19104 United States. <sup>3</sup>Pharmacology Graduate Group, University of Pennsylvania, Philadelphia, PA, 19104 United States.

**W55. Prescription opioid Hydromorphone use disrupts gut microbiome resulting in gut barrier compromise and persistent bacterial translocation**

Sharma, U, Ph.D.<sup>1</sup>, Khatri, R, MD<sup>2</sup>, Banerjee, S, Ph.D.<sup>1</sup>, Meng, J, Ph.D.<sup>1</sup>, Zhang, L, MS<sup>1</sup>, Roy, S, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Surgery, University of Miami, Miami, FL, 33136 United States. <sup>2</sup>Department of Surgery, University of Minnesota, Minneapolis, MN, 55455 United States.

**W56. Role of Eph-Ephrin Signaling in perturbing Neuron-Glia Interaction in HIV-1 Induced Neurodegeneration.**  
SINGAL, M.S.C, MS<sup>1</sup>, SETH, P, Ph.D.<sup>1</sup>; <sup>1</sup>CELLULAR AND MOLECULAR NEUROSCIENCE, NATIONAL BRAIN RESEARCH CENTRE, GURGAON, HARYANA, 122051 India.

**W57. APP cleavage by BACE1 mediates HIV-associated neurotoxicity**

Stern, AL, BS<sup>1</sup>, Gannon, P, Ph.D.<sup>1</sup>, Gelman, B, MD, Ph.D.<sup>2</sup>, Kolson, D, MD, Ph.D.<sup>1</sup>, Jordan-Sciutto, K, Ph.D.<sup>1</sup>; <sup>1</sup>Perelman School of Medicine, The University of Pennsylvania, Philadelphia, PA, 19104 United States. <sup>2</sup>Department of Pathology, University of Texas Medical Branch, Galveston, TX, 77555 United States.

**W58. Pharmacological profile of dopaminergic transmission in HIV-1 inducible Tat transgenic mice**

Strauss, MJ<sup>1</sup>, Denehy, ED<sup>2</sup>, Zhou, L, Ph.D.<sup>1</sup>, Sun, WL, Ph.D.<sup>1</sup>, Quizon, PM<sup>1</sup>, Eans, SO<sup>3</sup>, Cirino, TJ<sup>3</sup>, Bardo, MT<sup>2</sup>, McLaughlin, JP, Ph.D.<sup>3</sup>, Zhu, J, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Drug Discovery and Biomedical Sciences, University of South Carolina, Columbia, SC, 29208 United States. <sup>2</sup>Department of Psychology, University of Kentucky, Lexington, KY, 40506 United States. <sup>3</sup>Department of Pharmacodynamics, college of Pharmacy, University of Florida, Gainesville, FL, 32611 United States.

**W59. Determining on- and off- target excision events of HIV-1 specific gRNAs using GUIDE-Seq**

Sullivan, N<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States.

**W60. Withaferin A suppresses Beta amyloid in APP expressing cells: Studies for neurocognitive dysfunctions**

Tiwari, Sneham, MS<sup>1</sup>, Kaushik, A, Ph.D.<sup>1</sup>, Jayant, RD, Ph.D.<sup>1</sup>, Yndart, A, MS<sup>1</sup>, Nair, M, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, HWCOC, Florida International University, Miami, FL, 33199 United States.

**W61. Cenicriviroc, anti-JAM-A, and anti-ALCAM are potential therapeutics to prevent preferential transmigration across the BBB of HIV+CD14+CD16+ monocytes: reducing CNS viral seeding and HAND in the ART era**

Veenstra, M., MS<sup>1</sup>, Byrd, D., Ph.D.<sup>2</sup>, Inglese, M., MD, Ph.D.<sup>3</sup>, Gama, L., Ph.D.<sup>4</sup>, Clements, J., Ph.D.<sup>4</sup>, Shiramizu, B., MD<sup>5</sup>, Anastos, K., MD<sup>6</sup>, Morgello, S., MD<sup>7</sup>, Berman, J.W., Ph.D.<sup>8</sup>; <sup>1</sup>Department of Pathology, Albert Einstein College of Medicine, Bronx, NY, 10461 United States. <sup>2</sup>Departments of Neurology, and Psychiatry, Icahn School of Medicine at Mount Sinai, New York, NY, 10029 United States. <sup>3</sup>Departments of Neurology, Neuroscience, and Radiology, Icahn School of Medicine at Mount Sinai, New York, NY, 10029 United States. <sup>4</sup>Molecular and Comparative Pathobiology, Johns Hopkins School of Medicine, Baltimore, MD, 21205 United States. <sup>5</sup>Departments of Pediatrics, and Medicine, John A. Burns School of Medicine at University of Hawaii, Manoa, Honolulu, HI, 96813 United States. <sup>6</sup>Departments of Medicine, and Epidemiology & Population Health, Albert Einstein College of Medicine, Bronx, NY, 10461 United States. <sup>7</sup>Departments of Neurology, Neuroscience, and Pathology, Icahn School of Medicine at Mount Sinai, New York, NY, 10029 United States. <sup>8</sup>Departments of Pathology, and Microbiology and Immunology, Albert Einstein College of Medicine, Bronx, NY, 10461 United States.

**W62. HIV-1 Vpr induces CCL5 and CXCL10 upregulation in astrocytes mediated by p38-MAPK and NFkB signaling pathways**

Velázquez-Pérez, B., BS<sup>1</sup>, Noel, R., Ph.D.<sup>1</sup>; <sup>1</sup>Ponce Research Institute, Ponce Health Sciences University, Ponce, PR, 00716 United States.

**W63. Sigma-1r and cocaine interplay in cathepsin b secretion in HIV-1 infected macrophages**

Vélez López, O., BS<sup>1</sup>, Segarra Marrero, A, Ph.D.<sup>1</sup>, Meléndez Aponte, L, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Microbiology Medical School, University of Puerto Rico Medical Sciences Campus, San Juan, PR, 00921 United States.

**W64. Wnt7a skews macrophage phenotype: Relevance to NeuroAIDS**

Wallace, JW, MS<sup>1</sup>, Al-Harhi, LA, Ph.D.<sup>1</sup>; <sup>1</sup>Immunology and Microbiology, Rush University Medical Center, Chicago, IL, 60612 United States.

**W65. MOVED - Please see T81. Testis-specific lactate dehydrogenase (LDH-C4) expressed in lung cancer may accelerate tumor metastasis to the brain**

Wang, Yang, MD, Ph.D.<sup>1</sup>, Zhang, Hui, MD<sup>1</sup>, Wang, Jing, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of respiratory and critical care medicine, First affiliated hospital, Zhengzhou University, Zhengzhou, Henan, 450000 China.

**W66. Gp120 Alters Stability of Microtubules and Interrupts the Transport of Essential Organelles**

Wenzel, ED, BS<sup>1</sup>, Avdoshina, V, MD, Ph.D.<sup>2</sup>, Taraballi, F, Ph.D.<sup>3</sup>, Mocchetti, I, Ph.D.<sup>2</sup>; <sup>1</sup>Department of Pharmacology, Georgetown University, Washington, DC, 20057 United States. <sup>2</sup>Department of Neuroscience, Georgetown University, Washington, DC, 20057 United States. <sup>3</sup>Department of Nanomedicine, Houston Methodist Research Institute, Houston, TX, 77030 United States.

**W67. Human cervical epithelial cells inhibit HIV replication in macrophages**

Xu, Xiqu, BS<sup>1</sup>, Guo, Le, MS<sup>2</sup>, Li, Jieliang, Ph.D.<sup>2</sup>, Wang, Xu, Ph.D.<sup>2</sup>, Liu, Jinbiao, Ph.D.<sup>1</sup>, Zhuang, Ke, Ph.D.<sup>1</sup>, Gu, Jun, BS<sup>1</sup>, Liu, Hang, BS<sup>2</sup>, Ho, Wenzhe, MD, M.Ph.<sup>2</sup>, Zhou, Li, Ph.D.<sup>1</sup>; <sup>1</sup>School of Basic Medical Sciences, Wuhan University, Wuhan, Hubei, 430071 China. <sup>2</sup>Department of Pathology and Laboratory Medicine, Temple University School of Medicine, Philadelphia, PA, 19140 United States.

**W68. Morphine induced analgesic tolerance is modulated by disruption of gut microbiome and sustained inflammation**

Zhang, L, MS<sup>1</sup>, Ramakrishnan, S, Ph.D.<sup>2</sup>, Roy, S, Ph.D.<sup>2</sup>; <sup>1</sup>Department of Pharmacology, University of Minnesota, Minneapolis, MN, 55455 United States. <sup>2</sup>Department of Surgery, University of Miami, Miami, FL, 33442 United States.

**W69. Small molecule ONC201/TIC10 inhibits HIV-1 replication in reservoir cell types in vitro and in mouse brains xenotransplanted with human macrophages**

Zhao, RZ, BS<sup>1</sup>, Wu, BW, MD<sup>1</sup>, Zheng, JCZ, MD<sup>1</sup>, Huang, YH, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center, Omaha, NE, 68198-5700 United States.

**W70. Soybean Lectin Inhibits HIV Infection of Macrophages**

Zhou, RH, MS<sup>1</sup>, Wang, X, Ph.D.<sup>1</sup>, Ma, TC, Ph.D.<sup>1</sup>, Wang, H, MD, Ph.D.<sup>1</sup>, Ho, WZ, MD, M.Ph.<sup>1</sup>, Li, JL, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pathology and Laboratory Medicine, Temple University Lewis Katz School of Medicine, Philadelphia, PA, 19140 United States.

**W71. Effects of HIV anti-retroviral drugs on oligodendrocyte differentiation via SREBP1 pathway**

Zidane, B, MS<sup>1</sup>, Monnerie, H, Ph.D.<sup>2</sup>, Jordan-Sciutto, K, Ph.D.<sup>1</sup>, Grinspan, J, Ph.D.<sup>2</sup>; <sup>1</sup>2Department of Pathology, University of Pennsylvania School of Dental Medicine, Philadelphia, PA, 19104 United States. <sup>2</sup>1Department of Neurology, Children's Hospital of Philadelphia, Philadelphia, PA, 19104 United States.

**Late Breaking Abstracts**

**W72. Differentiation of MonoMac-1 Cell Line Induced by M-CSF and Glucocorticoid Pathways**

Vakili, S,<sup>1</sup> Fisher, T., Ph.D.<sup>1</sup>, Rappaport, J, Ph.D.<sup>1</sup>; Department of Neuroscience, Center for NeuroVirology. Temple University School of Medicine, Philadelphia, Pennsylvania, USA, 19140.

**Thursday, March 30<sup>th</sup>**

**POSTER SESSION 2 (T1 – T81)**

**Post-Doctoral and Regular Scientists**

**T1. MRI-assisted magnetically guided CNS delivery of magneto-electro nanoparticles in non-human primate**

Ajeet Kaushik, AK, Ph.D.<sup>1</sup>, Jose Rodriguez, JR, MS<sup>2</sup>, Daniel Rothen, DR, Ph.D.<sup>3</sup>, Vinay Bhardwaj, VB, Ph.D.<sup>4</sup>, Rahul Dev Jayant, RDJ, Ph.D.<sup>1</sup>, Roobbbeh Nikkah-Moshaie, RNM, Ph.D.<sup>1</sup>, Andria Yndart, AY, MS<sup>1</sup>, Beatriz Fuentes, BF, Ph.D.<sup>2</sup>,



Hitendra Chand, HC, Ph.D.<sup>1</sup>, Varan Govind, VG, Ph.D.<sup>5</sup>, Nazira El-Hage, NE-H, Ph.D.<sup>1</sup>, Norma S Kenyon, NK, Ph.D.<sup>6</sup>, Madhavan Nair, MN, Ph.D.<sup>1</sup>; <sup>1</sup>Center of Personalized Nanomedicine, Institute of Neuroimmune Pharmacology, Department of Immunology, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, 33199 United States. <sup>2</sup>Interdisciplinary Stem Cell Institute, Miller School of Medicine, University of Miami, Miami, FL, 33136 United States. <sup>3</sup>Division of Veterinary Resources, Miller School of Medicine, University of Miami, Miami, FL, 33136 United States. <sup>4</sup>Department of Biomedical Engineering, Rutgers University, Piscataway, NJ, 08901 United States. <sup>5</sup>Department of Radiology, Miller School of Medicine, University of Miami, Miami, FL, 33136 United States. <sup>6</sup>Cell Transplant Center, Diabetes Research Institute, University of Miami, Miami, FL, 33136 United States.

#### **T2. Differential In Vitro Neurotoxicity of Antiretroviral Drugs**

Akay-Espinoza, C. MD<sup>1</sup>, STERN, A, BS<sup>1</sup>, LEE, RN, BS<sup>1</sup>, PANVELKER, N, BS<sup>1</sup>, LI, JJ, BS<sup>1</sup>, JORDAN-SCIUTTO, KL, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pathology, University of Pennsylvania School of Dental Medicine, Philadelphia, PA, 19104 United States.

#### **T3. Neutral sphingomyelinase 2 regulates amyloid beta levels and size of blood-brain barrier extracellular vesicles in the presence of HIV-1**

Andras, IE<sup>1</sup>, Garcia-Contreras, M<sup>2</sup>, Toborek, M<sup>1</sup>; <sup>1</sup>Department of Biochemistry and Molecular Biology, University of Miami School of Medicine, Miami, FL, 33136 United States. <sup>2</sup>Diabetes Research Institute, University of Miami School of Medicine, Miami, FL, 33136 United States.

#### **T4. PCR amplification of PBMC-derived proviral HIV-1 infection for next-generation sequencing and defining mutagenic process during latent/persistent infection**

Atkins, A<sup>1</sup>, Dampier, W<sup>1</sup>, Kercher, K<sup>1</sup>, Passic, S<sup>1</sup>, Zhong, W<sup>1</sup>, Williams, J<sup>1</sup>, Balashov, S<sup>1</sup>, Mell, J<sup>1</sup>, Earl, J<sup>1</sup>, Pirrone, V<sup>1</sup>, Szep, Z<sup>2</sup>, Jacobson, J<sup>3</sup>, Nonnemacher, M<sup>1</sup>, Wigdahl, B<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>2</sup>Department of Medicine, Division of Infectious Disease and HIV Medicine, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>3</sup>Department of Medicine, Section of Infectious Disease, Lewis Katz School of Medicine, Temple University, Philadelphia, PA, 19140 United States.

#### **T5. Inflammasome Gene Expression and their role in HIV and Cocaine Induced Apoptosis**

Atluri, VSR, Ph.D.<sup>1</sup>, Pilakka-Kanthikeel, S, Ph.D.<sup>1</sup>, Garcia, G, BS<sup>1</sup>, Jayant, RD, Ph.D.<sup>1</sup>, Sagar, V, Ph.D.<sup>1</sup>, Thangavel, S, Ph.D.<sup>1</sup>, Yndart, A, BS<sup>1</sup>, Nair, M, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, Institute of NeuroImmune Pharmacology, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, 33199 United States.

#### **T6. Targeting latent HIV-1 in the brain using state of the art nanotechnology**

Avila, Diana, Ph.D.<sup>1</sup>, Dikici, E, Ph.D.<sup>1</sup>, Yndart, A, BS<sup>2</sup>, Tomitaka, A, Ph.D.<sup>2</sup>, Daunert, S, Ph.D.<sup>1</sup>, Madhavan, N, Ph.D.<sup>2</sup>, Toborek, M, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Biochemistry and Molecular Biology, University of Miami, Miami, FL, 33136 United States. <sup>2</sup>Department of Immunology, Institute of NeuroImmune Pharmacology, Florida International University, Miami, FL, 33199 United States.

#### **T7. Restoration of Rev nuclear-cytoplasm shuttling increases EcoHIV infectivity in vitro and in vivo.**

Bertrand, L, Ph.D.<sup>1</sup>, Velichkovska, M, BS<sup>1</sup>, Leda, A, Ph.D.<sup>1</sup>, Toborek, M, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Biochemistry and molecular biology, University of Miami - Miller School of Medicine, Miami, FL, 33136 United States.

#### **T8. Vesicle mediated delivery of LTR targeted CRISPR/Cas9 decreases HIV proviral activity in HIV-nanoLuc CHME-5 microglia**

Campbell, LA, Ph.D.<sup>1</sup>, Richie, C, Ph.D.<sup>1</sup>, Harvey, BK, Ph.D.<sup>1</sup>; <sup>1</sup>Molecular Mechanisms of Cellular Stress and Inflammation, National Institute on Drug Abuse, Baltimore, MD, 21224 United States.

#### **T9. Mechanisms of cathepsin B / serum amyloid P complex neuronal dysfunction in HIV infection**

Cantres-Rosario, YM, Ph.D.<sup>1</sup>, Ogando Vélez, A<sup>2</sup>, Plaud, M, MS<sup>1</sup>, Gorantla, S, Ph.D.<sup>3</sup>, Melendez, LM, Ph.D.<sup>1</sup>; <sup>1</sup>Microbiology and Medical Zoology Department, University of Puerto Rico, Medical Sciences Campus, San Juan, PR, 00935 United States. <sup>2</sup>NeuroID Program, University of Puerto Rico, Rio Piedras Campus, San Juan, PR, 00935 United States. <sup>3</sup>Durham Research Center, University of Nebraska Medical Center, Omaha, NE, 68198-5880 United States.

#### **T10. Critical role of NLRP3 inflammasome in cocaine-mediated activation of microglia: Implications in exacerbated neuroinflammation in HAND**

Chivero, ET, Ph.D.<sup>1</sup>, Periyasamy, P, Ph.D.<sup>1</sup>, Callen, S, BS<sup>1</sup>, Guo, ML, Ph.D.<sup>1</sup>, Buch, S, Ph.D.<sup>1</sup>; <sup>1</sup>Pharmacology & Experimental Neuroscience, UNMC, Omaha, NE, 68198 United States.

**T11. HIV-1 alters expression of gap junctions and adherens junctions in human brain pericytes**

Cho, HJ, Ph.D.<sup>1</sup>, Toborek, M, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Biochemistry and Molecular Biology, University of Miami Miller School of Medicine, Miami, FL, 33136 United States.

**T12. Nef Expression in Astrocytes Promotes Astrogliosis and Synaptic Dysfunction**

Cruz, ML<sup>1</sup>, Cintron, K<sup>2</sup>, Rodriguez, Y<sup>1</sup>, Valles, Y<sup>1</sup>, Noel Jr, RJ, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Basic Sciences, Ponce Health Sciences University-Ponce Research Institute, Ponce, PR, 00717 United States. <sup>2</sup>Research - Biology, University of Puerto Rico - Ponce, Ponce, PR, 00717 United States.

**T13. Selection of gRNAs to target the HIV-1 quasispecies with CRISPR/cas9**

Dampier, W<sup>1</sup>, Nonnemacher, M<sup>1</sup>, Chung, C-H<sup>1</sup>, Allen, A<sup>1</sup>, Sullivan, N<sup>1</sup>, Desimone, M<sup>2</sup>, Pirrone, V<sup>1</sup>, Kercher, K<sup>1</sup>, Passic, S<sup>1</sup>, Williams, J<sup>1</sup>, Wigdahl, B<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>2</sup>School of Biomedical Engineering and Health Systems, Drexel University, Philadelphia, PA, 19104 United States.

**T14. Examining the Role of Cocaine Abuse on HIV-1 Pathogenesis**

Dash, C, Ph.D.<sup>1</sup>, Pandhare, J, Ph.D.<sup>1</sup>, Jennings, R, BS<sup>1</sup>, Berthaud, V, MD<sup>1</sup>, Kalams, S, MD<sup>2</sup>; <sup>1</sup>Center for AIDS Health Disparities Research, Meharry Medical College, Nashville, TN, 372 United States. <sup>2</sup>Division of Infectious Diseases, Vanderbilt University Medical Center, Nashville, TN, 37235 United States.

**T15. Exosomes released from astrocytes in response to morphine and inflammatory cytokines deconstruct synaptic connections through modulation of microRNA cargo**

Datta Chaudhuri, A, Ph.D.<sup>1</sup>, Wang, S, Ph.D.<sup>1</sup>, Khuder, S, Ph.D.<sup>1</sup>, Dastgheyb, R, Ph.D.<sup>1</sup>, Trout, A, Ph.D.<sup>2</sup>, Yoo, S, Ph.D.<sup>1</sup>, Talbot, C, Ph.D.<sup>3</sup>, Hao, H, Ph.D.<sup>3</sup>, Haughey, N, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Neurology, Richard T Johnson Division of Neuroimmunology and Neurological Infections, Johns Hopkins University School of Medicine, Baltimore, MD, 21287 United States. <sup>2</sup>Sanders-Brown Center of Aging, University of Kentucky, Lexington, KY, 40536 United States. <sup>3</sup>Institute of Basic Biomedical Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, 21287 United States.

**T16. CRISPR/Cas9 mediated activation of astrocytic glutamate transporter, EAAT2 gene**

Datta, PK, Ph.D.<sup>1</sup>, Shekarabi, M, Ph.D.<sup>1</sup>, Deshmane, S, Ph.D.<sup>1</sup>; <sup>1</sup>Neuroscience, Lewis Katz School of Medicine, Philadelphia, PA, 19140 United States.

**T17. TGF-beta signaling in BMPR2 under-expressing hyper-proliferative smooth muscle cells exposed to cocaine and HIV-protein(s).**

Dhillon, NK<sup>1</sup>, Dalvi, P<sup>1</sup>, Konstantinova, T<sup>1</sup>, Sanderson, M<sup>1</sup>, O'Brien-Ladner, A<sup>1</sup>; <sup>1</sup>Department of Internal Medicine, University of Kansas Medical Center, Kansas City, KS, 66160 United States.

**T18. Transport of acute-phase isoforms of serum amyloid A across the blood-brain barrier**

Erickson, MA, Ph.D.<sup>1</sup>, Rhea, EM, Ph.D.<sup>1</sup>, Salameh, TS, Ph.D.<sup>1</sup>, Fernandez, EG, BS<sup>1</sup>, Banks, WA, MD<sup>1</sup>; <sup>1</sup>Geriatric Research, Education and Clinical Center, VA Medical Center, Seattle, WA, 98108 United States.

**T19. Triggering receptor expressed on myeloid cells 2 levels are altered in the brain during HIV-associated neurocognitive disorders**

Fields, JA, Ph.D.<sup>1</sup>, Spencer, B, Ph.D.<sup>1</sup>, Martin, E, Ph.D.<sup>1</sup>, Alexeeva, A, BS<sup>1</sup>, Gough, S<sup>1</sup>, Flores, I<sup>1</sup>, Achim, C, MD, Ph.D.<sup>1</sup>, Desplats, P, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Psychiatry, University of California, San Diego, San Diego, CA, 93093 United States.

**T20. Mass Spectrometry and Single Cell Imaging Flow Cytometry as screening tools to detect H3 and H4 post-translational modifications after acute and chronic alcohol exposure of human monocyte-derived dendritic cells (MDDC)**

Figueroa, G, BS<sup>1</sup>, Parira, T, MS<sup>1</sup>, Casteleiro, G<sup>1</sup>, Alejandra, L<sup>1</sup>, Gomez-Hernandez, M., Ph.D.<sup>2</sup>, Fernandez-Lima, F., Ph.D.<sup>2</sup>, Nair, M., Ph.D.<sup>1</sup>, Agudelo, M., Ph.D.<sup>1</sup>; <sup>1</sup>Herbert Wertheim College of Medicine, Florida International University (FIU), Miami, FL, 33199 United States. <sup>2</sup>Department of Chemistry and Biochemistry, FIU, Miami, FL, 33199 United States.

**T21. Interferon-beta decreases macrophage heme oxygenase-1 expression: role in HIV neuropathogenesis**

Garza, RG, BS<sup>1</sup>, Rossi, FP, Ph.D.<sup>1</sup>, Gill, AJ, MD, Ph.D.<sup>1</sup>, Kolson, DL, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Neurology, University of Pennsylvania, Philadelphia, PA, 19104 United States.

**T22. Notch3/VEGF-A axis is involved in proliferation of pulmonary artery smooth muscle: implications in HIV-associated PAH**

Guo, ML, Ph.D.<sup>1</sup>, Kook, YH, MS<sup>1</sup>, Callen, S, BS<sup>1</sup>, Buch, S, Ph.D.<sup>1</sup>; <sup>1</sup>Pharmacology & Experimental Neuroscience, University of Nebraska Medical Center, Omaha, NE, 68198 United States.

**T23. Regulation of Programmed Cell Death Protein 1 (PD-1)/Programmed Death-Ligand 1 (PD-L1) in HIV-1 infection, and Therapeutic Prevention**

Haorah, James, Ph.D.<sup>1</sup>, Mishra, Vikas, Ph.D.<sup>1</sup>, Schuetz, Heather, BS<sup>1</sup>; <sup>1</sup>Department of Biomedical Engineering, New Jersey Institute of Technology, Newark, NJ, 07102 United States.

**T24. Inhibition of extracellular vesicle biogenesis halts productive Zika virus infection in human fetal astrocytes**

Huang, Y., Ph.D.<sup>1</sup>, Li, Y.<sup>1</sup>, Zhang, H.<sup>1</sup>, Jing, R.<sup>1</sup>, Xu, Y.<sup>1</sup>, Zhao, R.<sup>1</sup>, He, M.<sup>1</sup>, Peer, J.<sup>1</sup>, Zheng, J.<sup>1</sup>; <sup>1</sup>Department of Pharmacology & Experimental Neuroscience, University of Nebraska Medical Center, Omaha, NE, 68198-5930 United States.

**T25. Establishment of CRISPR/Cas9 stable astrocytes for gene-editing study for HIV eradication**

Huang, Z, Ph.D.<sup>1</sup>, Nair, M, Ph.D.<sup>1</sup>; <sup>1</sup>Immunology Department, Florida International University, Miami, FL, 33199 United States.

**T26. Role of de-acidified endolysosome in antiretroviral drug-induced amyloidogenesis**

Hui, L, MD, Ph.D.<sup>1</sup>, Lakpa, L, BS<sup>1</sup>, Geiger, J.D, Ph.D.<sup>1</sup>, Chen, X, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Biomedical Sciences, University of North Dakota, School of Medicine & Health Science, Grand Forks, ND, 58203 United States.

**T27. Novel E2F1 splice variants in the Rat CNS**

Jackson, DP, Ph.D.<sup>1</sup>, Ting, JH, Ph.D.<sup>1</sup>, Schleidt, S, BS<sup>1</sup>, Lymberopoulos, J, BS<sup>1</sup>, Jordan-Sciutto, K, Ph.D.<sup>1</sup>; <sup>1</sup>School of Dental Medicine, University of Pennsylvania, Philadelphia, PA, 19128 United States.

**T28. Effects of HIV-1 Tat within the Go/No-Go Task using a Transgenic Mouse Model**

Jacobs, I.R., MS<sup>1</sup>, Antonucci, A.G.<sup>1</sup>, Fergusson, A.B.<sup>1</sup>, Manjarres, M.<sup>1</sup>, Sabater, S.M., BS<sup>1</sup>, Ignatowska-Jankowska, B., Ph.D.<sup>2</sup>, Fitting, S., Ph.D.<sup>1</sup>; <sup>1</sup>Department of Behavioral Neuroscience, University of North Carolina, Chapel Hill, NC, 27599 United States. <sup>2</sup>Edmond and Lily Safra Center for Brain Science, Hebrew University of Jerusalem, Jerusalem, Jerusalem, 9190401 Israel.

**T29. FDC-TFH Interactions within CNS Draining Cervical Lymph Nodes of SIV-Infected Rhesus Macaques**

Jain, P.<sup>1</sup>, Dave, R.S.<sup>1</sup>, Sharma, R.K.<sup>2</sup>, Muir, R.R.<sup>3</sup>, Haddad, E.<sup>3</sup>, Gumber, S.<sup>4</sup>, Villinger, F.<sup>5</sup>, Nehra, A.<sup>1</sup>, Khan, Z.K.<sup>1</sup>, Wigdahl, B.<sup>1</sup>, Ansari, A.<sup>4</sup>, Byrareddy, S.<sup>6</sup>; <sup>1</sup>Department of Microbiology and Immunology, and the Institute for Molecular Medicine and Infectious Disease, Drexel University College of Medicine, Philadelphia, PA, 19129 United States. <sup>2</sup>Advanced Eye Center, Post Graduate Institute of Medical Education and Research, Chandigarh, Chandigarh, 160 012 India. <sup>3</sup>Division of Infectious Disease and HIV Medicine, Department of Medicine, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>4</sup>Department of Pathology & Laboratory Medicine, School of Medicine and Emory Vaccine Center, Emory University, Atlanta, GA, 30322 United States. <sup>5</sup>New Iberia Research Center, University of Louisiana at Lafayette, New Iberia, LA, 70560 United States. <sup>6</sup>Department of Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center, Omaha, NE, 68198 United States.

**T30. Development and Delivery of Intranasal Cas9/gRNA Aerosol Nanoformulation to Eradicate Latent HIV-1 in CNS**

Jayant, R.D., Ph.D.<sup>1</sup>, Kaushik, A, Ph.D.<sup>1</sup>, Yndart, A, MS<sup>1</sup>, Chand, H, Ph.D.<sup>1</sup>, Raghavan, V, Ph.D.<sup>2</sup>, Labhsetwar, V, Ph.D.<sup>2</sup>, Kuehl, P, Ph.D.<sup>3</sup>, Khalili, K, Ph.D.<sup>4</sup>, Nair, M, Ph.D.<sup>1</sup>; <sup>1</sup>Center for Personalized Nanomedicine, Institute of NeuroImmune Pharmacology, Dept. of Immunology, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, 33199 United States. <sup>2</sup>Dept. of Biomedical Engineering, Lerner Research Institute, Cleveland Clinic, Cleveland, OH, 44195 United States. <sup>3</sup>Dept. of Biomedical Engineering, Lovelace Biomedical and Environmental Research Institute, Albuquerque, NM, 87108 United States. <sup>4</sup>Dept. of Neuroscience, Lewis Katz School of Medicine, Temple University, Philadelphia, PA, 19140 United States.

**T31. Cannabidiol (CBD) induces functional CD4+CD25+FOXP3+ Tregs in response to low level T cell activation**

Kaplan, BLF, Ph.D.<sup>1</sup>, Dhital, S, Ph.D.<sup>1</sup>, Stokes, JV, MS<sup>1</sup>, Park, N, Ph.D.<sup>1</sup>, Seo, KS, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Basic Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS, 39762 United States.

**T32. Chronic morphine administration facilitates EcoHIV-induced neurocognitive impairments in mice**

Kelschenbach, J, Ph.D.<sup>1</sup>, Borjabad, A, Ph.D.<sup>1</sup>, Kim, B-H, Ph.D.<sup>1</sup>, Gu, C-J, Ph.D.<sup>1</sup>, He, H, Ph.D.<sup>1</sup>, Chao, W, MS<sup>1</sup>, Arancio, O, MD, Ph.D.<sup>2</sup>, Potash, M J, Ph.D.<sup>1</sup>, Volsky, D J, Ph.D.<sup>1</sup>; <sup>1</sup>Infectious Diseases, Icahn School of Medicine at Mount Sinai, New York, NY, 10029 United States. <sup>2</sup>Pathology and Cell Biology, Columbia University, New York, NY, 10027 United States.

**T33. APOE isoform-dependently affects Tat-mediated HIV-1 LTR transactivation in astrocytes**

Khan, Nabab, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Basic sciences, School of Medicine and Health Sciences, Grand Forks, ND, 58203 United States.

**T34. HTLV-1 infection and neuropathogenesis in the context of Rag1-/- $\gamma$ c-/- (RAG1) and BLT mice**

Khan, Z.K.<sup>1</sup>, Ginwala, R.<sup>1</sup>, Caruso, B.<sup>2</sup>, Chew, G.M.<sup>2</sup>, Pattekar, A.<sup>1</sup>, Corley, M.J.<sup>3</sup>, Loonawat, R.<sup>1</sup>, Jacobson, S.<sup>2</sup>, Sreedhar, S.<sup>1</sup>, Ndhlovu, L.C.<sup>3</sup>, Jain, P.<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, and the Institute for Molecular Medicine and Infectious Disease, Drexel University College of Medicine, Philadelphia, PA, 19129 United States. <sup>2</sup>Department of Microbiology, Immunology and Pathology, Colorado State University, Fort Collins, CO, 80523 United States. <sup>3</sup>Viral Immunology Section, Neuroimmunology Branch, National Institutes of Health, Bethesda, MD, 20892 United States.

**T35. Loss of TH-phenotype in the substantia nigra but not ventral tegmental following HIV-Tat exposure**

Khoshbouei, Habibeh, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Neuroscience, University of Florida, Gainesville, FL, 32605 United States.

**T36. Impaired Insulin Sensitivity Indicates Worsening Cognitive Function in HIV-infected Patients**

Khuder, S., Ph.D.<sup>1</sup>, Kim, S., Ph.D.<sup>1</sup>, Letendre, S., MD<sup>2</sup>, Marcotte, I., MD<sup>2</sup>, Saktor, N., MD<sup>1</sup>, McArthur, J.C., MD<sup>1</sup>, Dickens, A.M., Ph.D.<sup>1</sup>, Haughey, N.J., Ph.D.<sup>1</sup>; <sup>1</sup>Department of Neurology, The Johns Hopkins University School of Medicine, Baltimore, MD, 21287 United States. <sup>2</sup>HIV Neurobehavioral Research Program and Department of Psychiatry, School of Medicine, University of California, San Diego, La Jolla, CA, 92093 United States.

**T37. Role of CXCR4 in a rat model of cocaine seeking behaviors**

Kim, J.K, Ph.D.<sup>1</sup>; Unterwald, E.M, Ph.D.<sup>1</sup>, Ramirez, S.H, Ph.D.<sup>1</sup>, Razmpour, R<sup>1</sup>, Meissler, J.J<sup>1</sup>, Connelly, K.L<sup>1</sup>, Doura, M.D, Ph.D.<sup>1</sup>, Eisenstein, T.K, Ph.D.<sup>1</sup>, Rawls, S.M, Ph.D.<sup>1</sup>; <sup>1</sup>Center for Substance Abuse Research, Lewis Katz School of Medicine at Temple University, Philadelphia, PA, 19140 United States.

**T38. Cigarette Smoke Condensate (CSC) alters the characteristics of monocyte-derived exosomes and differentially regulates exosomal antioxidant enzymes.**

Kumar, S, Ph.D.<sup>1</sup>, Sinha, N, BS<sup>1</sup>, Midde, N.M, Ph.D.<sup>1</sup>, Haque, S, MS<sup>1</sup>, Kashanchi, F, Ph.D.<sup>2</sup>; <sup>1</sup>Pharmaceutical Sciences, University of Tennessee Health Science Center, Memphis, TN, 38163 United States. <sup>2</sup>National Center for Biodefense and Infectious Diseases, George Mason University, Manassas, VA, 20110 United States.

**T39. The involvement of the endocannabinoid system in HIV-induced amyloid-beta pathology**

Leda, A.R, Ph.D.<sup>1</sup>, Andras, I.E, MD<sup>1</sup>, Toborek, M, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Biochemistry and Molecular Biology, University of Miami Miller School of Medicine, Miami, FL, 33136 United States.

**T40. The potential effects of abnormal  $\beta$ -Amyloid aggregation on HIV-related cognitive disorder in aged rats**

Li, H.L, MD, Ph.D.<sup>1</sup>, Likins, B, MS<sup>1</sup>, Mactutus, C.F, Ph.D.<sup>1</sup>, Chang, S.L, Ph.D.<sup>2</sup>, Booze, R.M, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Psychology, University of South Carolina, Columbia, SC, 29208 United States. <sup>2</sup>Institute of NeuroImmune Pharmacology and Department of Biological Sciences, Seton Hall University, South Orange, NJ, 07079 United States.

**T41. Methamphetamine compromises TLR3-mediated antiviral response of astrocytes via induction of autophagy**

Li, Jieliang<sup>1</sup>, Wang, X, Ph.D.<sup>1</sup>, Zhou, R.H, MS<sup>1</sup>, Ho, W.Z, MD, M.Ph.<sup>1</sup>; <sup>1</sup>Jieliang Li, Temple University, Philadelphia, PA, 19140 United States.

**T42. Emodin Inhibits HIV-1 Infection of Macrophages through the JAK-STAT Pathway**

Luo, F<sup>1</sup>, Wang, X.K<sup>1</sup>, Wang, H<sup>1</sup>, Shi, J.C<sup>1</sup>, Zheng, W.J<sup>1</sup>, Xiong, H.R<sup>1</sup>, Feng, Y<sup>1</sup>, Wang, X<sup>2</sup>, Ho, W.Z<sup>2</sup>, Hou, W<sup>1</sup>; <sup>1</sup>State Key Laboratory of Virology, Institute of Medical Virology, School of Basic Medical Sciences, Wuhan University, Wuhan, Hubei, 430071 China. <sup>2</sup>Department of Pathology and Laboratory Medicine, Temple University Lewis Katz School of Medicine, Philadelphia, PA, 19140 United States.

**T43. Human transplanted astrocytes into NSG-HuPBMCs mice demonstrate astrocyte-initiated HIV spread from the brain to other tissues**

Lutgen, V., Ph.D.<sup>1</sup>, Narasipura, S.D., Ph.D.<sup>1</sup>, Richards, M., Ph.D.<sup>1</sup>, Robinson, K., BS<sup>1</sup>, Al-Harhi, L., Ph.D.<sup>1</sup>;  
<sup>1</sup>Immunology/Microbiology, Rush University Medical Center, Chicago, IL, 60612 United States.

**T44. Human Immunodeficiency Virus infection compromises the inositol phosphate metabolism in astrocytes: Role in survival of HIV CNS reservoirs**

Malik, S., Ph.D.<sup>1</sup>, Eugenin, EA, Ph.D.<sup>1</sup>; <sup>1</sup>Public Health Research Institute, New Jersey Medical School-Rutgers University, Newark, NJ, 07103 United States.

**T45. Compromised intestinal barrier function by opioids accelerates HIV disease progression**

Meng, J., Ph.D.<sup>2</sup>, Banerjee, S, Ph.D.<sup>2</sup>, Zhang, L, MS<sup>1</sup>, Sindberg, G, Ph.D.<sup>1</sup>, Buch, S, Ph.D.<sup>3</sup>, Segura, B, MD, Ph.D.<sup>4</sup>, Bauman, B, MD<sup>4</sup>, Roy, S, Ph.D.<sup>2</sup>; <sup>1</sup>Department of Pharmacology, University of Minnesota, Minneapolis, MN, 55455 United States. <sup>2</sup>Department of Surgery, University of Miami, Miami, FL, 33442 United States. <sup>3</sup>Department of Pharmacology and Experimental Neuroscience, Nebraska Medical Center, Omaha, NE, 68198 United States. <sup>4</sup>Department of Surgery, University of Minnesota, Minneapolis, MN, 55455 United States.

**T46. Assessment of hepatic clearance, CYP3A4 inhibition, and cellular pharmacokinetics of darunavir in the presence of alcohol**

Midde, NM, Ph.D.<sup>1</sup>, Gong, Y, MS<sup>1</sup>, Li, J, MS<sup>2</sup>, Li, W, Ph.D.<sup>2</sup>, Meibohm, B, Ph.D.<sup>1</sup>, Kumar, S, Ph.D.<sup>1</sup>; <sup>1</sup>Pharmaceutical Sciences, University of Tennessee Health Science Center, Memphis, TN, 38163 United States. <sup>2</sup>Shanghai Key Laboratory of New Drug Design, East China University of Science and Technology, Shanghai, Shanghai, 200237 China.

**T47. Oncostatin M is a potential therapeutic target in HIV-associated neuronal excitotoxicity**

Moidunny, S., Ph.D.<sup>1</sup>, Matos, M., Ph.D.<sup>2</sup>, Wesseling, E., MS<sup>3</sup>, Banerjee, S., Ph.D.<sup>1</sup>, Volsky, D.J., Ph.D.<sup>1</sup>, Cunha, R.A., Ph.D.<sup>2</sup>, Agostinho, P., Ph.D.<sup>2</sup>, Boddeke, H.W., Ph.D.<sup>3</sup>, Roy, S., Ph.D.<sup>1</sup>; <sup>1</sup>Department of Surgery, Miller School of Medicine, University of Miami, Miami, FL, 33136 United States. <sup>2</sup>Center for Neuroscience of Coimbra, University of Coimbra, Coimbra, Coimbra, 3004-517 Portugal. <sup>3</sup>Department of Neuroscience, University Medical Center Groningen, University of Groningen, Groningen, Groningen, 9713GZ Netherlands.

**T48. SDG Mediated HO-1 Induction and Partial Inhibition of Viral Replication in HIV-infected Human Macrophages**

Nieves-Rosado, H, BS<sup>1</sup>, Williams, K.S., Ph.D.<sup>1</sup>, Pu, S, BS<sup>1</sup>, Jordan-Sciutto, K, Ph.D.<sup>1</sup>; <sup>1</sup>Pathology, University of Pennsylvania, Philadelphia, PA, 19104 United States.

**T49. Nanoelectroporation of magneto-electric nanoparticles as drug nano-carriers into the brain cells**

Nikkhah-Moshaie, Roozbeh, Ph.D.<sup>1</sup>, Kaushik, A, Ph.D.<sup>1</sup>, Sinha, R, MS<sup>2</sup>, Bhardwaj, V, Ph.D.<sup>3</sup>, Atluri, V, Ph.D.<sup>1</sup>, Jayant, R.D., Ph.D.<sup>1</sup>, Yndart, A, MS<sup>1</sup>, Pala, N, Ph.D.<sup>2</sup>, Nair, M, Ph.D.<sup>1</sup>; <sup>1</sup>Florida International University, Herbert Wertheim College of Medicine, Department of Immunology, Miami, FL, 33199 United States. <sup>2</sup>Florida International University, College of Engineering and Computing, Department of Electrical and Computing Engineering, Miami, FL, 33174 United States. <sup>3</sup>Rutgers University, Department of Biomedical Engineering, Piscataway, NJ, 08854 United States.

**T50. Alcohol influences HAND via astrocyte-TLR4 and cPLA2 cross-talk**

Pandey, R, Ph.D.<sup>1</sup>, Ghorpade, A, Ph.D.<sup>1</sup>; <sup>1</sup>Institute of Molecular Medicine, University of North Texas Health Science Center, FORT WORTH, TX, 76107 United States.

**T51. HIV and methamphetamine-induced brain oxidative stress is mediated by reduced level of Mn-superoxide dismutase (SOD2)**

Park, M, Ph.D.<sup>1</sup>, Leda, A, Ph.D.<sup>1</sup>, Barral, E<sup>1</sup>, Cambow, D<sup>1</sup>, Levine, H<sup>1</sup>, Toborek, M, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Biochemistry and Molecular Biology, University of Miami School of Medicine, Miami, FL, 33136 United States.

**T52. Co-expression pattern analyses of immune checkpoint receptors and ligands on T cells and dendritic cells from HTLV-1 infected individuals and humanized mice**

Pattekar, A.<sup>1</sup>, Ginwala, R.<sup>1</sup>, Khan, Z.K.<sup>1</sup>, Chew, G.M.<sup>2</sup>, Charlins, P.<sup>3</sup>, Akkina, R.<sup>3</sup>, Caruso, B.<sup>4</sup>, Jacobson, S.<sup>4</sup>, Ndhlovu, L.C.<sup>2</sup>, Jain, P.<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, and the Institute for Molecular Medicine and Infectious Disease, Drexel University College of Medicine, Philadelphia, PA, 19129 United States. <sup>2</sup>Department of Tropical Medicine, Medical Microbiology and Pharmacology, University of Hawaii, Honolulu, HI, 96813 United States. <sup>3</sup>Department of Microbiology, Immunology and Pathology, Colorado State University, Fort Collins, CO, 80523 United States.

States.<sup>4</sup>Viral Immunology Section, Neuroimmunology Branch, National Institutes of Health, Bethesda, MD, 20892 United States.

**T53. HIV-1 TAT-mediated epigenetic downregulation of miR-124 promotes microglial activation via MeCP2-STAT3 axis**

Periyasamy, Palsamy, Ph.D.<sup>1</sup>, Guo, Ming-Lei, Ph.D.<sup>1</sup>, Buch, Shilpa, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center, Omaha, NE, 68198 United States.

**T54. IFN-induced transmembrane (IFTM) protein mediates restricted HIV entry in astrocytes.**

Pilakka Kanthikeel, S, Ph.D.<sup>1</sup>, Sagar, V, Ph.D.<sup>1</sup>, Ghasemloian, J, BS<sup>1</sup>, Nair, M, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, Florida International University, Miami, FL, 33199 United States.

**T55. Cannabinoids modulate cytokine profiles within HIV-1-infected individuals in the Drexel Medicine CARES Cohort**

Pirrone, V<sup>1</sup>, Dampier, W<sup>1</sup>, Parikh, N<sup>1</sup>, Passic, S<sup>1</sup>, Blakey, B<sup>1</sup>, Szep, Z<sup>2</sup>, Jacobson, J<sup>3</sup>, Nonnemacher, M<sup>1</sup>, Wigdahl, B<sup>1</sup>; <sup>1</sup>Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>2</sup>Department of Medicine, Division of Infectious Diseases and HIV Medicine, Drexel University College of Medicine, Philadelphia, PA, 19102 United States. <sup>3</sup>Department of Medicine, Section of Infectious Disease, Lewis Katz School of Medicine, Temple University, Philadelphia, PA, 19140 United States.

**T56. The blood-brain barrier as a source of extracellular vesicles; emerging concepts in vascular remodeling in neurotrauma, substance abuse and HIV CNS infiltration**

Ramirez, SH, Ph.D.<sup>1</sup>, Lutton, EM, BS<sup>1</sup>, Rawls, SM, Ph.D.<sup>2</sup>, Razmpour, R, BS<sup>1</sup>, Andrews, AM, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pathology & Laboratory Medicine, The Lewis Katz School of Medicine at Temple University, Philadelphia, PA, 19140 United States. <sup>2</sup>Center for Substance Abuse Research, The Lewis Katz School of Medicine at Temple University, Philadelphia, PA, 19140 United States.

**T57. Development of a polydrug exosome-based mimetic to treat HIV-associated neuroinflammation/neurotoxicity and opiate abuse.**

Raymond, A, Ph.D.<sup>1</sup>, Brito, D, BS<sup>1</sup>, Tomitaka, A, Ph.D.<sup>1</sup>, Lapierre, J, MS<sup>1</sup>, Yndarta-Arias, A, BS<sup>1</sup>, El Hage, N, Ph.D.<sup>1</sup>, Nair, M, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, Herbert Wertheim College of Medicine Florida International University, Miami, FL, 33199 United States.

**T58. Intranasal administration of small interfering (si) RNA Beclin1 encapsulated with linear polyethylenimine (PEI) nano-plexes to attenuate HIV-1 infection in the brain**

Rodriguez, M, Ph.D.<sup>1</sup>, Lapierre, J, MS<sup>1</sup>, Ojha, C, MS<sup>1</sup>, Batrakova, E, Ph.D.<sup>2</sup>, Kashanchi, F, Ph.D.<sup>3</sup>, Dever, S, Ph.D.<sup>1</sup>, El-Hage, N, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, 33199 United States. <sup>2</sup>Center for Nanotechnology in Drug Delivery, Eshelman School of Pharmacy, University of North Carolina, Chapel Hill, NC, 27599 United States. <sup>3</sup>Laboratory of Molecular Virology, School of Systems Biology, George Mason University, Manassas, VA, 20110 United States.

**T59. NIR-stimuli sensitive 'smart' magnetic nanoagent for on demand drug delivery**

Sagar, VIDYA, Ph.D.<sup>1</sup>, Atluri, V.S.R., Ph.D.<sup>1</sup>, Tomitak, A., Ph.D.<sup>1</sup>, Nagasetti, A., Ph.D.<sup>1</sup>, Vashisit, A., Ph.D.<sup>1</sup>, Pilakka-Kanthikeel, S., Ph.D.<sup>1</sup>, El-Hage, N., Ph.D.<sup>1</sup>, McGoron, A., Ph.D.<sup>1</sup>, Nair, M., Ph.D.<sup>1</sup>; <sup>1</sup>Vidya Sagar, Florida International University, Miami, FL, 33174 United States.

**T60. Methamphetamine and HIV-1/gp120 protein affect neurotransmitter systems in vivo through lasting changes in CNS gene expression**

Sanchez, AB, Ph.D.<sup>1</sup>, Yuan, NY, Ph.D.<sup>1</sup>, Maung, R<sup>1</sup>, Kaul, M, Ph.D.<sup>1</sup>, TMARC Group, <sup>2</sup>; <sup>1</sup>Infectious and Inflammatory Disease Center, Sanford Burnham Prebys Discovery Medical Institute, La Jolla, CA, 92037 United States. <sup>2</sup>Translational Methamphetamine AIDS Research Center, University of California San Diego, San Diego, CA, 92093 United States.

**T61.  $\beta$ -arrestin 2 regulates anti-inflammatory effects of Salmeterol in lipopolysaccharide stimulated BV2 cells**

Sharma, Monika, MS<sup>1</sup>, Flood, Patrick, Ph.D.<sup>1</sup>; <sup>1</sup>Medical Microbiology and Immunology, University of Alberta, Edmonton, Alberta, T6G 2E1 Canada.

**T62. Morphine-mediated astrogliosis involves dysregulated autophagy**

Sil, S, Ph.D.<sup>1</sup>, Periyasamy, P, Ph.D.<sup>1</sup>, Guo, ML, Ph.D.<sup>1</sup>, Callen, S, BS<sup>1</sup>, Buch, S, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology and Experimental Neuroscience, UNMC, Omaha, NE, 68198 United States.

**T63. Methamphetamine increases HIV-1 infectivity in neural stem and progenitor cells**

Skowronska, M, Ph.D.<sup>1</sup>, McDonald, M, MS<sup>2</sup>, Toborek, M, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Biochemistry and Molecular Biology, University of Miami Miller School of Medicine, Miami, FL, 33136 United States. <sup>2</sup>Department of Marine Biology, University of Hawaii at Manoa, Honolulu, HI, 96822 United States.

**T64. Kallikrein-kinin system and Type I Interferons in Neurolupus**

Sriram, U<sup>1</sup>, Zuluaga-Ramirez, V<sup>1</sup>, Merkel, SF<sup>1</sup>, Winfield, M<sup>1</sup>, Fernandes, NC<sup>1</sup>, Gajghate, S<sup>1</sup>, Gallucci, S<sup>2</sup>, Persidsky, Y<sup>1</sup>; <sup>1</sup>Department of Pathology and Laboratory Medicine, Temple University Lewis Katz School of Medicine, Philadelphia, PA, 19140 United States. <sup>2</sup>Department of Microbiology and Immunology, Temple University Lewis Katz School of Medicine, Philadelphia, PA, 19140 United States.

**T65. Role of TGF- $\beta$ /Smad signaling pathway in CD8+ T cell function impairment in HIV/AIDS patients**

Su, Q J S, Ph.D.<sup>1</sup>, Xiao, J X, Ph.D.<sup>2</sup>, Lu, Z Z L, Ph.D.<sup>1</sup>, Shi, D X S<sup>1</sup>, Liang, A H L<sup>1</sup>; <sup>1</sup>Ruikang Hospital, Guangxi University of Chinese Medicine, Nanning, Guangxi, 530011 China. <sup>2</sup>School of Basic Medical Science, Guangxi Medical University, Nanning, Guangxi, 530200 China.

**T66. Effects of human dopamine transporter histidine547, tyrosine88 and lysine92 intermolecular interactions on basal and Tat-inhibited dopamine transport**

Sun, W L, Ph.D.<sup>1</sup>, Quizon, PM, BS<sup>1</sup>, Yuan, Y, Ph.D.<sup>2</sup>, Strauss, M, BS<sup>1</sup>, McCain Jr, R, BS<sup>1</sup>, Zhan, CG, Ph.D.<sup>2</sup>, Zhu, J, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Drug Discovery and Biomedical Sciences, University of South Carolina, Columbia, SC, 29208 United States. <sup>2</sup>Molecular Modeling and Biopharmaceutical Center, and Department of Pharmaceutical Sciences, University of Kentucky, Lexington, KY, 40536 United States.

**T67. Wnt5a is a neuron-to-astrocyte signal regulating the pathogenesis of HIV-1/AIDS-associated neuropathic pain**

Tang, S.-J., Ph.D.<sup>1</sup>, Liu, X., Ph.D.<sup>1</sup>; <sup>1</sup>Department of Neuroscience and Cell Biology, University of Texas Medical Branch, Galveston, TX, 77555 United States.

**T68. Cocaine-mediated activation of microglia: an implication of defective mitophagy**

Thangaraj, Annadurai, Ph.D.<sup>1</sup>, Periyasamy, Palsamy, Ph.D.<sup>1</sup>, Buch, Shilpa, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center, Omaha, NE, 68198 United States.

**T69. Cocaine and HIV Upregulate Glycolytic Enzymes and Mitochondrial Biogenesis in Astrocytes.**

Thangavel, S, Ph.D.<sup>1</sup>, Atluri, VSR, Ph.D.<sup>1</sup>, Nair, M.P, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, Institute of NeuroImmune Pharmacology, College of Medicine, Florida International University, Miami, FL, 33176 United States.

**T70. Magneto-plasmonic nanoparticles for image-guided brain targeting with enhanced blood-brain barrier transmigration**

Tomitaka, A, Ph.D.<sup>1</sup>, Arami, A, Ph.D.<sup>2</sup>, Raymond, A, Ph.D.<sup>1</sup>, Yndart, A, BS<sup>1</sup>, Takemura, Y, Ph.D.<sup>3</sup>, Toborek, M, MD, Ph.D.<sup>4</sup>, Nair, M, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Immunology, Institute of NeuroImmune Pharmacology, Centre for Personalized Nanomedicine, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, 33199 United States. <sup>2</sup>Molecular Imaging Program at Stanford (MIPS), The James H Clark Center, Stanford University, Stanford, CA, 94305 United States. <sup>3</sup>Department of Electrical and Computer Engineering, Yokohama National University, Yokohama, Kanagawa, 240-8501 Japan. <sup>4</sup>Department of Biochemistry and Molecular Biology, University of Miami School of Medicine, Miami, FL, 33136 United States.

**T71. Development of novel biopolymer based magnetic micro/nano hydrogels for targeted drug delivery and theranostic applications**

Vashist, Arti, Ph.D.<sup>1</sup>, Kaushik, Ajeet, Ph.D.<sup>1</sup>, Atluri, Venkata, Ph.D.<sup>1</sup>, Nikkiah-Moshaie, Roozbeh, Ph.D.<sup>1</sup>, Tomitaka, Asahi, Ph.D.<sup>1</sup>, Sagar, Vidya, Ph.D.<sup>1</sup>, Nair, Madhavan, Ph.D.<sup>1</sup>; <sup>1</sup>Center for Personalized Nanomedicine, Institute of NeuroImmune Pharmacology, Department of Immunology, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, 33199 United States.

**T72. Epigallocatechin gallate inhibits macaque SEVI-mediated enhancement of SIV or SHIV infection**

Wang, X, Ph.D.<sup>1</sup>, Zhou, RH, MS<sup>2</sup>, Guo, L, MS<sup>2</sup>, Liu, JB, Ph.D.<sup>2</sup>, Liu, H, MS<sup>2</sup>, Hou, W, MD, Ph.D.<sup>2</sup>, Ho, WZ, MD, M.Ph.<sup>1</sup>, Li, JL, Ph.D.<sup>1</sup>; <sup>1</sup>Pathology and Laboratory Medicine, Temple University, PHILADELPHIA, PA, 19140 United States. <sup>2</sup>School of Basic Medical Sciences/State Key Laboratory of Virology, Wuhan University, Wuhan, Hubei, 430071 China.

**T73. HIV and Catecholamine Induced  $\beta$ -Arrestin Inhibits Interferon- $\alpha$  in Macrophages: Implications for Neurotropic HIV Infection in the Context of Substance Abuse**

Williams, DW<sup>1</sup>, Askew, L<sup>1</sup>, Clements, JE<sup>1</sup>; <sup>1</sup>School of Medicine, Johns Hopkins University, Baltimore, MD, 21201 United States.

**T74. Induction of the Endogenous Antioxidant Response Pathway by Secoisolariciresinol diglucoside in HIV-infected Human Macrophages**

Williams, KS, Ph.D.<sup>1</sup>, Pu, S, BS<sup>1</sup>, Nieves, H, BS<sup>1</sup>, Guerrero, A, BS<sup>1</sup>, Jordan-Sciutto, KJ, Ph.D.<sup>1</sup>; <sup>1</sup>School of Dental Medicine, University of Pennsylvania, Philadelphia, PA, 19104 United States.

**T75. Exploring benefits of Methanandamide: towards developing a nanoformulation to combat against cannabinoids induced effects in HIV patients**

Yndart A, AY, BS<sup>1</sup>, Kaushik A, KA, Ph.D.<sup>1</sup>, Tomitaka A, TA, Ph.D.<sup>1</sup>, Tiwari S, TS, MS<sup>1</sup>, Agudelo M, AM, Ph.D.<sup>1</sup>, Munoz K, MK, MS<sup>1</sup>, Nair M, NM, Ph.D.<sup>1</sup>; <sup>1</sup>Center for Personalized Nanomedicine, Institute of Neuro immune Pharmacology, Department of Immunology, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, 33199 United States.

**T76. Activation of the transient receptor potential mucolipin-1 receptor restores lysosomal biogenesis in model of HIV-related endolysosomal dysfunction**

Yoo, SW, Ph.D.<sup>1</sup>, Lisinicchia, J, BS<sup>2</sup>, Lovett, J, BS<sup>1</sup>, Gelman, BB, MD, Ph.D.<sup>2</sup>, Haughey, NJ, Ph.D.<sup>1</sup>; <sup>1</sup>Department of Neurology, Richard T Johnson Division of Neuroimmunology and Neurological Infections, Johns Hopkins University School of Medicine, Baltimore, MD, 21287 United States. <sup>2</sup>Department of Pathology, Neuroscience and Cell Biology, University of Texas Medical Branch, Galveston, TX, 77555 United States.

**T77. Limited impact of alcoholism comorbidity in HIV on peripheral cytokine levels**

Zahr, N.M., Ph.D.<sup>1</sup>, Asok, P., MD<sup>1</sup>, Sullivan, E.V., Ph.D.<sup>2</sup>, Pfefferbaum, A., MD<sup>1</sup>; <sup>1</sup>Neuroscience, SRI International, Menlo Park, CA, 94025 United States. <sup>2</sup>Psychiatry and Behavioral Sciences, Stanford University, Stanford, CA, 94305 United States.

## Late Breaking Abstracts

**T78. Cocaine and Tat induce a metabolic switch in glucose metabolism in human astrocytes**

Natarajaseenivasan, K, Ph.D. <sup>1</sup>, Cotto, B, BS <sup>1</sup>, Shanmughapriya, S, Ph.D. <sup>2</sup>, Lombardi, A, Ph.D. <sup>2</sup>, Madesh, M, Ph.D. <sup>2</sup>, Elrod, J, Ph.D. <sup>2</sup>, Langford, D, Ph.D. <sup>1</sup>; <sup>1</sup>Neuroscience, Temple University School of Medicine, Philadelphia, PA 19140 <sup>2</sup>Center for Translational Medicine, Temple University School of Medicine, Philadelphia, PA 19140.

**T79. Dopamine Increases Macrophage Susceptibility to HIV Infection.**

Gaskill, PJ, Ph.D. <sup>1</sup>; <sup>1</sup>Department of Pharmacology and Physiology, Drexel University College of Medicine, Philadelphia, PA 19012.

**T80. Rapid, homogeneous and robust HIV-p24 detection assay using the AlphaLISA™ platform.**

Apgar, Carl, M.S. <sup>1</sup>, Martin Boissonneault Ph.D<sup>1</sup>, Geneviève Pinard Ph.D<sup>1</sup>, Nathalie Rouleau Ph.D<sup>1</sup>, and Martina Bielefeld-Sévigny Ph.D<sup>1</sup>, <sup>1</sup>PerkinElmer, 68 Elm St., Hopkinton, MA 0174

## Rescheduled Abstract

**T81. Testis-specific lactate dehydrogenase (LDH-C4) expressed in lung cancer may accelerate tumor metastasis to the brain**

Wang, Yang, MD, Ph.D.<sup>1</sup>, Zhang, Hui, MD<sup>1</sup>, Wang, Jing, MD, Ph.D.<sup>1</sup>; <sup>1</sup>Department of respiratory and critical care medicine, First affiliated hospital, Zhengzhou University, Zhengzhou, Henan, 450000 China.



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