

# International Symposium on NeuroVirology

held jointly  
with the

# Society on NeuroImmune Pharmacology

## April 10-14, 2018 Swissôtel Chicago, Illinois, USA



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## Tuesday, April 10<sup>th</sup>

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### NIMH/NIH Satellite Event (Lucerne, Ballroom Level)

12:30 pm      *Astrocytes as an HIV CNS Reservoir*  
  
Introduction by Dianne Rausch (National Institute of Mental Health, National Institutes of Health, Bethesda, MD, USA)

4:30 pm      Registration (Lucerne Foyer, Ballroom Level)

### Opening Reception (Edelweiss Penthouse, 43rd floor)

6:30 pm      Get reacquainted with friends and colleagues before Wednesday morning's opening session. The reception will conclude at 7:30 pm.

### Mentoring and Networking Event (Montreux, Event Centre)

7:30 pm      Introduction by Kelly Jordan-Sciutto (University of Pennsylvania, Philadelphia, PA, USA) and Lynn Pulliam (University of California, San Francisco)  
  
*Inclusive Mentoring* presented by Rick McGee (Northwestern University Feinberg School of Medicine, Chicago, IL, USA)

The goal of this event is to foster inclusion and discuss diversity of all kinds. The networking event is intended to facilitate networking and collaboration during the meeting and beyond. Although everyone is welcome, this event will be particularly valuable to early career investigators. Sponsored by the Diversity and Inclusion SNIP Committee and the ISNV Junior Scientists Committee.

## Wednesday, April 11<sup>th</sup>

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6:45 am      Registration and Continental Breakfast (Lucerne Foyer, Ballroom Level)

### Welcome and Opening Remarks (Lucerne Ballroom, Ballroom Level)

8:00 am      Jonathan Geiger, President, Society on NeuroImmune Pharmacology (SNIP)  
Igor Koralnik, President, International Society for NeuroVirology (ISNV)

### Session 1: *Intersection of Immune Function and Neurodegeneration in Parkinson's' and Alzheimer's Disease* (Lucerne Ballroom, Ballroom Level)

Chairs: David Bennett (Rush University) and Brian Wigdahl (Drexel University College of Medicine)

8:10 am      Elizabeth Bradshaw (Columbia University, New York, NY, USA)  
*Human microglia: Translating novel transcriptomes into optimized model systems for drug discovery*

8:30 am      Philip De Jager (Columbia University, New York, NY, USA)  
*Human microglia: Definition of over 12 subtypes in cortex by single cell analysis*

8:50 am      Mariko Taga (Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA)  
*The CD33 locus dictates differential TREM1 response in reaction to amyloid beta*

9:10 am      Daniel Felsky (Columbia University, New York, NY, USA)  
*Activated human microglia: Genetic architecture and relation to pathologic traits*

**Session 2: Drug Abuse, Aging and Other Comorbidities in HIV infection (Lucerne Ballroom, Ballroom Level)**

Chairs: Dionna Williams (Johns Hopkins University) and Roger Sorenson (National Institutes of Health)

- 9:30 am Alan Landay (Rush University, Chicago, IL, USA)  
*Inflammaging in HIV: a dangerous liaison*  
**Plenary**
- 10:00 am Kalimuthusamy Natarajaseenivasan (Temple University, Philadelphia, PA, USA)  
*Astrocytic metabolic switch is a novel etiology for cocaine and HIV-1 Tat-mediated neurotoxicity*
- 10:15 am Maria Cecilia Marcondes (San Diego Biomedical Research Center, San Diego, CA, USA)  
*The role of sirtuin-1 in neuroHIV and in aging-associated inflammation*
- 10:30 am Ron Ellis (University of California, San Diego, La Jolla, CA, USA)  
*Recent cannabis use in HIV infection is associated with reduced IL-16 in CSF*
- 10:45 am Morning Break (Lucerne Foyer)

**Session 3: Early Career Investigators, Part I (Lucerne Ballroom, Ballroom Level)**

Chairs: Marisela Agudelo (Florida International University) and Gurudutt Pendyala (University of Nebraska Medical Center)

**Pre-doctoral trainees**

- 11:00 am Fatma Abdalla (University of Missouri – Kansas City, Kansas City, MO, USA)  
*TIMBD modulates neurotransmission and improves HIV-1 Tat-associated anxiety-like behavior and memory deficits in Tat-transgenic mice*  
Mentor: Hari K. Bhat and Anil Kumar
- 11:05 am Daniel Ojeda-Juarez (University of California, Riverside, Riverside, CA, USA)  
*Lipocalin-2 deficiency limits alterations of neurotransmission-related gene networks in a transgenic model of HIV-induced brain injury*  
Mentor: Marcus Kaul
- 11:10 am Hang Su (University of Nebraska Medical Center, Omaha, NE, USA)  
*Identification of tissue HIV-1 reservoirs in infected humanized mice*  
Mentor: Howard Gendelman
- 11:15 am Alexander Allen (Drexel University, Philadelphia, PA, USA)  
*Utilizing a gene therapy approach to purge latent HIV-infected cells*  
Mentor: Brian Wigdahl
- 11:20 am Pamela Quizon (University of South Carolina, Columbia, SC, USA)  
*Multiple mutations on human dopamine transporter at tyrosine 88, aspartic acid 206, and histidine 547, preserve its normal transport function and attenuate Tat-induced inhibition of dopamine uptake*  
Mentor: Jun Zhu
- 11:25 am Janice Lozada-Delgado (University of Puerto Rico, San Juan, Puerto Rico)  
*HIV-1 Tat regulates glucose uptake in human neuronal cells and exosomal IRS-1 serine/tyrosine phosphorylation levels*  
Mentor: Valerie Wojna and Yamil Gerena
- 11:30 am Questions & Answers (preceding six speakers)



**Post-doctoral trainees**

- 11:40 am Amrita Datta Chaudhuri (Johns Hopkins University, Baltimore, MD, USA)  
*Modulation of  $\mu$ -opioid receptor signaling pathway by astrocyte-derived extracellular vesicles secreted in response to interleukin-1 $\beta$*   
Mentor: Norman Haughey
- 11:45 am Susmita Sil (University of Nebraska Medical Center, Omaha, NE, USA)  
*HIV-Tat induced HIF-1 $\alpha$  mediated astrocytic amyloidogenesis: Implications for Alzheimer's Disease*  
Mentor: Shilpa Buch
- 11:50 am Ana Leda (University of Miami, Miami, FL, USA)  
*The role of the blood-brain barrier in Zika virus infection*  
Mentor: Michael Toborek
- 11:55 am Kimberly Williams (University of Pennsylvania, Philadelphia, PA, USA)  
*17beta-estradiol suppresses oxidative stress and neurotoxicity in human macrophage neuroinflammatory models*  
Mentor: Kelly Jordan-Sciotto
- 12:00 pm Roozbeh Nikkhah-Moshaie (Florida International University, Miami, FL, USA)  
*TEM-assisted evaluation of drug nano-carrier biodistribution in the brain*  
Mentor: Madhavan Nair
- 12:05 pm Midhun Thomas (University of Nebraska Medical Center, Omaha, NE, USA)  
*Modulating cellular autophagy for controlled drug delivery*  
Mentor: Santhi Gorantla
- 12:10 pm Questions & Answers (preceding six speakers)
- 12:20 pm Lunch Break & Networking (talks resume at 2:00 pm)

**Mentorship Luncheon (St. Gallen, Event Centre)**

- 12:20 pm The Mentorship Luncheon is a networking event intended to facilitate communication between early career scientists and established principal investigators. The luncheon will also lay the groundwork for future mentorship.

**Concurrent Sessions**

**Session 4A (SNIP):**

***Effects of Opioids and Painkillers as Therapeutic and Abused drugs (Montreux, Event Centre)***

Chairs: Nazira El-Hage (Florida International University) and T. Celeste Napier (Rush University)

- 2:00 pm Elizabeth Salisbury-Afshar (Chicago Department of Public Health, Chicago, IL, USA)  
*Addressing the opioid crisis: Evidence based practice and public health approach*
- 2:30 pm Shao-Jun Tang (University of Texas Medical Branch, Galveston, TX, USA)  
*Neuroinflammatory mechanisms of morphine-induced hyperalgesia*

**Session 4B (ISNV):**

***Immune Activation in Virologic Diseases (Lucerne Ballroom, Ballroom Level)***

Chair: Joan Berman (Albert Einstein College of Medicine) and Walter Royal (University of Maryland School of Medicine)

- 2:00 pm Mudit Tyagi (George Washington University, Washington, DC, USA)  
*Multiple cocaine-stimulated pathways regulate HIV gene expression and replication*
- 2:15 pm Ibolya Andras (University of Miami Health System, Miami, FL, USA)  
*The role of RAGE in brain endothelial extracellular vesicle secretion and intercellular amyloid transfer*

2:50 pm Kurt Hauser (Virginia Commonwealth University, Richmond, VA, USA)  
*Increases in CCR5-mediated inflammation underlie the neuronal injury, behavioral deficits, and altered rewarding properties of opiates in an HIV-1 Tat transgenic model*

3:10 pm Sabita Roy (University of Miami Health System, Miami, FL, USA)  
*Role of the gut microbiome in opioid tolerance and addiction*

3:30 pm Afternoon Break (Montreux Foyer)

**Session 5A (SNIP):  
Impact of Substance Abuse on Neuroimmune Function (Montreux, Event Centre)**

Chairs: Wenzhe Ho (Temple University) and Woody Lin (National Institutes of Health)

3:50 pm Woody Lin (National Institutes of Health, Bethesda, MD, USA)  
*NeuroAIDS with SUD: “What” and “So What”*

4:00 pm T. Dianne Langford (Temple University, Philadelphia, PA, USA)  
*Effects of cocaine and HIV on astrocyte cholesterol synthesis: Implications for HIV-Associated Neurocognitive Disorders in cocaine users*

4:20 pm Irma E. Cisneros (University of Texas Medical Branch, Galveston, TX, USA)  
*Cocaine promotes astrocyte mitochondrial toxicity to regulate activation of antiviral innate immune responses to HIV-1 and Zika virus*

4:40 pm Dionna Williams (Johns Hopkins University, Baltimore, MD, USA)  
*Spatiotemporal detection of tenofovir in brain*

2:30 pm Debby van Riel (Erasmus MC, Rotterdam, Netherlands)  
*Influenza virus-associated CNS disease: Direct or remote damage*

2:45 pm Yamil Gerena (University of Puerto Rico, San Juan, Puerto Rico)  
*Exosome-mediated soluble insulin receptor secretion is associated with HAND*

3:00 pm **Audrey Gilden Lectureship**  
Robert Fujinami (University of Utah, Salt Lake City, UT, USA)  
*Immune contributions leading to epilepsy following viral encephalitis*  
Introduction by Maria Nagel (University of Colorado School of Medicine, Aurora, CO, USA)

3:30 pm Afternoon Break (Lucerne Foyer)

**Session 5B (ISNV):  
Viral Reservoirs (Lucerne Ballroom, Ballroom Level)**

Chairs: Jeymohan Joseph (National Institutes of Health) and Bruce Shiramizu (University of Hawaii)

3:50 pm Guido Poli (San Raffaele Scientific Institute, Milan, Italy)  
*Lymphoid vs. non-lymphoid HIV reservoirs: The Brain Case*

**Plenary**  
4:20 pm Bruce Brew (St. Vincents Hospital Sydney, Darlinghurst NSW, Australia)  
*HIV brain latency may directly suppress brain cellular energy*

4:35 pm Yuntao Wu (George Mason University, Manassas, VA, USA)  
*Durable control of viral rebound in rhesus macaques by Rev-dependent lentiviral vectors carrying HSV-tk and TRAF6*

4:50 pm Andrea Raymond (Florida International University, Miami, FL, USA)  
*Nanomedicine-based therapeutic approaches to treat methamphetamine-induced reactivation of HIV latency in the brain*

5:00 pm Alan Prossin (University of Texas Health  
Science Center at Houston, Houston, TX,  
USA)  
*Probing dynamic neuroimmune interactions  
involving brain mu-opioid receptors and  
plasma IL-1 family cytokines in negative  
affective states*

**The NIH HIV Agenda – From priorities to grant review (Lucerne Ballroom, Ballroom Level)**

5:30 pm Dianne Rausch – *NeuroHIV Agenda Relative to Overall NIH HIV/AIDS Priorities*  
Jeymohan Joseph – *NIMH Priorities and Initiatives for NeuroHIV Research*  
May Wong – *NINDS Neuro-Infectious Diseases Program*  
Roger Sorenson – *NIDA: HIV, Drug Abuse, and YOU*  
Robert Freund – *Successfully navigating peer review*  
Eduardo Montalvo – *Grant review at the Center for Scientific Review*

**Thursday, April 12<sup>th</sup>**

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6:45 am Registration and Continental Breakfast (Lucerne Foyer, Ballroom Level)  
**Perkin Elmer** Breakfast Event (Lucerne Ballroom, Ballroom Level)

**Session 6: Animal Models in Neurological Disease (Lucerne Ballroom, Ballroom Level)**

Chairs: Howard Fox (University of Nebraska Medical Center) and Joseph Mankowski (Johns Hopkins University)

8:00 am Howard Fox (University of Nebraska Medical Center, Omaha, NE, USA)  
*National NeuroAIDS Tissue Consortium (NNTC)*

8:10 am **Bill Narayan Lectureship**  
J. Victor Garcia-Martinez (University of North Carolina at Chapel Hill, Chapel Hill, NC, USA)  
*HIV persistence in tissue macrophages during antiretroviral therapy*  
Introduction by Howard Fox (University of Nebraska Medical Center)

8:40 am Christina Gavegnano (Emory University, Atlanta, GA, USA)  
*Baricitinib reverses HIV Associated Neurocognitive Disorders in a SCID murine model*

8:55 am Emmie de Wit (National Institutes of Health, Bethesda, MD, USA)  
*1918 H1N1 influenza virus replicates in the nervous system of ferrets*

9:10 am Ling Cao (University of New England, Biddeford, ME, USA)  
*Effects of morphine on LP-BM5 murine retrovirus-induced CNS infection in gp120 transgenic mice*

**Session 7: Novel Strategies Towards Elimination of HIV (Lucerne Ballroom, Ballroom Level)**

Chairs: Kamel Khalili (Temple University) and Howard Gendelman (University of Nebraska Medical Center)

9:25 am Santhi Gorantla (University of Nebraska Medical Center, Omaha, NE, USA)  
*Mouse models for HIV elimination*

9:45 am Howard Gendelman (University of Nebraska Medical Center, Omaha, NE, USA)  
*LASER ART theranostics: Pathways for HIV eradication*

10:05 am Kamel Khalili (Temple University, Philadelphia, PA, USA)  
*Combination of CRISPR and LASER ART eliminates HIV and its rebound in humanized mice*

- 10:25 am Russell Cruz (*George Washington University and Children's National Medical Center, Washington, DC, USA*)  
*Antigen-specific T cell-based therapies as cure strategy for HIV*
- 10:45 am Morning Break (Lucerne Foyer)

**Session 8: *NeuroHIV and Alcohol Use (Lucerne Ballroom, Ballroom Level)***

Chairs: Subhash Pandey (University of Illinois at Chicago and Jesse Brown VA Medical Center) and Sulie L. Chang (Seton Hall University)

- 11:00 am Sulie L. Chang (Seton Hall University, South Orange, NJ, USA)  
*Alcohol and HIV co-working in the brain*
- 11:05 am Dipak Sarkar (Rutgers, The State University of New Jersey, New Brunswick, NJ, USA)  
*Microglia control stress-immune axis via secreting exosomes*
- 11:30 am Subhash Pandey (University of Illinois at Chicago and Jesse Brown VA Medical Center, Chicago, IL, USA)  
*Brain and alcohol: Epigenetic programming and psychopathology*
- 11:55 am Shirish Barve (University of Louisville, Louisville, KY, USA)  
*Alcohol, gut-brain axis and neuroinflammation*
- 12:20 pm Lunch Break & Networking (talks resume at 2:00 pm)

**Student and Postdoctoral JNIP/JNV Recruitments for Reviews and Editorial Board Assignments (Montreux, Event Centre)**

Chairs: Kamel Khalili (Editor-in-Chief, Journal of NeuroVirology) and Howard Gendelman (Editor-in-Chief, Journal of Neuroimmune Pharmacology)

- 12:45 pm An interactive session focused on reviewing scholarly works submitted for publication in the Journal of NeuroVirology and the Journal of Neuroimmune Pharmacology. All students and post-doctoral fellows are invited to participate. Two students and one post-doctoral fellow will be selected from the participants to serve as editorial board members for a period of two years.  
Lunch will not be provided at this event. The event will conclude at 1:45 pm.

**Session 9: *Early Career Investigators, Part II (Lucerne Ballroom, Ballroom Level)***

Chairs: Ruth Brack-Werner (Helmholtz Zentrum München) and Jay Rappaport (Temple University)

- 2:00 pm Nicole Fernandes (University of California, San Francisco, San Francisco, CA, USA)  
*HIV-infected primary human monocyte derived microglial cells can be targeted for HIV cure*  
Mentor: Lynn Pulliam
- 2:05 pm Jillian Whelan (University of Pennsylvania, Philadelphia, PA, USA)  
*Zika virus resistance to the antiviral 2',5'-oligoadenylate synthetase/ribonuclease L (OAS/RNase L) pathway*  
Mentor: Susan Weiss
- 2:10 pm Robert Barclay (George Mason University, Manassas, VA, USA)  
*Exosomes from uninfected cells activate HIV-1 transcription*  
Mentor: Fatah Kashanchi
- 2:15 pm Audrey Knight (Johns Hopkins University, Baltimore, MD, USA)  
*TREM2 expression increases with SIV encephalitis in a macaque model of HIV CNS disease*  
Mentor: Joe Mankowski
- 2:20 pm Rosiris Leon Rivera (Albert Einstein College of Medicine, New York City, NY, USA)  
*Preferential transmigration across the BBB of HIV-infected CD14+CD16+ monocytes and potential therapeutic targets to prevent the continued viral seeding of the CNS in the ART era*  
Mentor: Joan Berman

- 2:25 pm Saumi Mathews (University of Nebraska Medical Center, Omaha, NE, USA)  
*The HIV reservoir in a humanized mouse brain*  
Mentor: Larisa Poluektova
- 2:30 pm Questions & Answers (all preceding speakers)
- 2:40 pm Alyssa Evans (Rocky Mountain Laboratories, National Institutes of Health, Hamilton, MT, USA)  
*The California serogroup of orthobunyaviruses differ in neuroinvasion and neurovirulence*  
Mentor: Karin Peterson
- 2:45 pm Andrew Bubak (University of Colorado Denver – Anschutz Medical Campus, Aurora, CO, USA)  
*Varicella zoster virus induces aberrant nuclear localization of neurokinin-1 receptor leading to cell process extension and viral spread that is blocked by aprepitant*  
Mentor: Maria Nagel
- 2:50 pm Suming Chen (Johns Hopkins University, Baltimore, MD, USA)  
*Impaired insulin sensitivity predicts worsening cognitive function in HIV-infected subjects*  
Mentor: Norman Haughey
- 2:55 pm Wisler Charles (Rutgers New Jersey Medical School, Newark, NJ, USA)  
*Serum levels of ATP is a biomarker of HIV cognitive disease: Role in Blood-Brain Barrier compromise and CNS function*  
Mentor: Eliseo Eugenin
- 3:00 pm Pietro Mancuso (Temple University, Philadelphia, PA, USA)  
*Development and in vitro validation of double edge CRISPR/Cas9 mediated anti-HIV-1 platform*  
Mentor: Rafal Kaminski
- 3:05 pm Kristen McLaurin (University of South Carolina, Columbia, SC, USA)  
*Interrelationship among neural mechanisms underlying HIV-1-associated neurocognitive disorders (HAND) in the HIV-1 transgenic rat*  
Mentor: Charlie Mactutus
- 3:10 pm Questions & Answers (all preceding speakers)
- 3:20 pm Afternoon Break (Lucerne Foyer)  
Poster session preparation (Vevey and St. Gallen, Event Centre)

### Concurrent Sessions

#### Session 10A (SNIP):

#### **Interorganellar Signaling in Neurodegenerative Diseases (Montreux, Event Centre)**

Chairs: Italo Mocchetti (Georgetown University) and Jonathan Geiger (University of North Dakota)

- 3:40 pm Valeria Avdoshina (Georgetown University, Washington, DC, USA)  
*The role of neuronal cytoskeleton in NeuroAIDS*

#### Session 10B (ISNV):

#### **Biomarkers, Diagnostics, and Therapies (Lucerne Ballroom, Ballroom Level)**

Chair: Lynn Pulliam (University of California, San Francisco) and Tricia Burdo (Temple University)

- 3:40 pm Dimitrios Kapogiannis (National Institute on Aging, National Institutes of Health, Bethesda, MD, USA)  
*Extracellular vesicle biomarkers for neurological disorders - neurodegenerative and beyond*

#### **Plenary**



- |         |   |         |  |
|---------|---|---------|--|
| 4:00 pm | Adam Fields (University of California, San Diego, La Jolla, CA, USA)<br><i>Targeting mitochondria to reduce HIV-induced neurotoxicity</i>   | 4:10 pm | Erin Sundermann (University of California, San Diego, La Jolla, CA, USA)<br><i>Detecting amnesic mild cognitive impairment (aMCI) against a backdrop of HIV-associated neurocognitive disorders (HAND)</i> |
| 4:20 pm | Xuesong Chen (University of North Dakota, Grand Forks, ND, USA)<br><i>Endolysosome de-acidification affects the structure and function of endolysosomes as well as their ability to interact with and signal between other intracellular organelles</i> | 4:25 pm | Amanda Brown (Johns Hopkins University, Baltimore, MD, USA)<br><i>Osteopontin counters HIV-induced neuronal injury through the activation of mTOR and beta-integrin signaling</i>                          |
| 4:40 pm | James N. Sleigh (University College London, London, United Kingdom)<br><i>Interorganellar signaling in neurodegenerative diseases</i>   | 4:40 pm | Kalipada Pahan (Rush University, Chicago, IL, USA)<br><i>Repurposing maraviroc, an antiretroviral drug, for Parkinson's disease</i>  |

#### **Richard Johnson Lectureship (Lucerne Ballroom, Ballroom Level)**

- 5:10 pm Janice Clements (Johns Hopkins University, Baltimore, MD, USA)  
*Richard T. Johnson: Legacy as mentor, pioneer & his impact on NeuroHIV*  
Introduction by Avindra Nath (National Institutes of Health)

#### **Poster Session (Vevey and St. Gallen, Event Centre)**

- 6:00 pm Poster abstracts and numbers, as well as maps of the poster rooms, are available in the meeting guide on your mobile device. The poster session will conclude at 9:00 pm.

#### **Journal of Neuroimmune Pharmacology Editorial Board Dinner**

- 8:00 pm Members of the Journal of Neuroimmune Pharmacology Editorial Board are invited to dinner at Copper Fox Gastropub.

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### **Friday, April 13<sup>th</sup>**

- 6:45 am Registration and Continental Breakfast (Lucerne Foyer, Ballroom Level)

#### **Session 11: *Chronic Immune Activation and Substance Abuse* (Lucerne Ballroom, Ballroom Level)**

Chairs: Sanjay Maggirwar (University of Rochester Medical Center) and T. Dianne Langford (Temple University)

- 8:00 am Scott Kitchen (University of California, Los Angeles, Los Angeles, CA, USA)  
*Targeting type I interferon mediated immune activation to control HIV infection*  
**Plenary**
- 8:30 am Sergei Spitsin (Children's Hospital of Philadelphia, Philadelphia, PA, USA)  
*Aprepitant reduces inflammatory markers in HIV infected cART treated and cART naïve adults*
- 8:45 am Marco Cosentino (University of Insubria, Varese, Italy)  
*CD4+ T lymphocytes in Parkinson's disease have a complex phenotypic and functional Th1 bias: Cross-sectional studies of Th1/Th2/Th17 and regulatory T cells in antiparkinson drug-naïve and -treated patients*
- 9:00 am Zachary Klase (University of the Sciences in Philadelphia, Philadelphia, PA, USA)  
*Drugs of abuse as drivers of epigenetic change in HIV-1 infection*

**Session 12: Neuroinflammation, Neural Function, and Translational Research: Establishing a Window to the Brain (Lucerne Ballroom, Ballroom Level)**

Chairs: Leah Rubin (Johns Hopkins University) and Gretchen Neigh (Virginia Commonwealth University)

- 9:15 am Vasiliki Michopoulos (Emory University, Atlanta, GA, USA)  
*Diet-induced inflammation in female monkeys is related to disinhibited eating and alterations in corticostriatal circuits*
- 9:35 am Leah Pyter (The Ohio State University, Columbus, OH, USA)  
*Cognitive and neurostructural consequences of cancer treatments*
- 9:55 am Gretchen Neigh (Virginia Commonwealth University, Richmond, VA)  
*Adolescent stress sex-specifically alters neuroimmune reactivity in the hippocampus and periphery*
- 10:15 am Leah Rubin (Johns Hopkins University, Baltimore, MD, USA)  
*Patterns and predictors of cognitive impairment among HIV-infected women*
- 10:35 am Morning Break (Lucerne Foyer)

**Adarsh Kumar Memorial Lecture (Lucerne Ballroom, Ballroom Level)**

- 10:55 am Carla Shatz (Stanford University, Stanford, CA, USA)  
*Saving the synapse: Pruning and plasticity in development and disease*  
Introductions by Avindra Nath (National Institutes of Health), Marcus Kaul (University of California, Riverside), and Kelly Jordan Scitutto (University of Pennsylvania)  
This event, which is sponsored by the Diversity and Inclusion SNIP Committee, celebrates the power of diversity and inclusion in scientific research, as exemplified by Dr. Kumar.
- 11:55 am Lunch Break & Networking (talks resume at 2:00 pm)

**Concurrent Sessions**

**Session 13A (SNIP):**

**Role of the Gut-Brain Axis in Controlling CNS Reservoirs (Lucerne Ballroom, Ballroom Level)**

Chairs: Siddappa Byrareddy (University of Nebraska Medical Center) and Pankaj Seth (National Brain Research Centre)

- 2:00 pm Mahesh Mohan (Tulane National Primate Research Center, Covington, LA, USA)  
*Cannabinoid modulation of the gut brain axis in chronic HIV/SIV infection*
- 2:25 pm Siddappa Byrareddy (University of Nebraska Medical Center, Omaha, NE, USA)  
*Role of integrins in modulating SIV/HIV pathogenesis on gut-brain axis*
- 2:50 pm Amanda Persons (Rush University, Chicago, IL, USA)  
*Self-administration of methamphetamine in rats induces Parkinson's disease-like pathology*

**Session 13B (ISNV):**

**Emerging Infections (Montreux, Event Centre)**

Chairs: Avindra Nath (National Institutes of Health) and Valerie Wojna (University of Puerto Rico)

- 2:00 pm Michael Wilson (University of California, San Francisco, San Francisco, CA, USA)  
*Emerging technologies to detect emerging threats: Metagenomics comes of age*  
**Plenary**
- 2:30 pm Tory Patricia Johnson (Johns Hopkins University, Baltimore, MD, USA)  
*A fatal case of chronic dengue encephalitis*
- 2:55 pm Christopher Power (University of Alberta, Edmonton, Alberta, Canada)  
*Fatal leukoencephalitis caused by human pegivirus infection: clinical, molecular and pathological features*

3:05 pm William Becker (University of South Carolina, Columbia, SC, USA)  
*Cannabinoid receptor activation induces unique changes in the murine gut microbiome associated with the induction of anti-inflammatory myeloid-derived suppressor*

3:20 pm Afternoon Break (Lucerne Foyer)

**Session 14A (SNIP):  
Emerging Roles of Astrocytes in Health and Disease  
(Lucerne Ballroom, Ballroom Level)**

Chair: Lena Al-Harhi (Rush University)

3:40 pm Benjamin Deneen (Baylor College of Medicine, Houston, TX, USA)  
*Decoding astrocyte diversity in the adult and malignant brain*

4:00 pm Shane Liddelow (New York University School of Medicine, New York, NY)  
*What do reactive astrocytes do?*

4:20 pm Jeffrey Johnson (University of Wisconsin – Madison, Madison, WI, USA)  
*Nrf2 activation in astrocytes modulates disease progression in mouse models of Parkinson's and Alzheimer's disease*

4:40 pm Lena Al-Harhi (Rush University, Chicago, IL, USA)  
*Role of astrocytes in HAND*

**SNIP Open Business Meeting (Lucerne Ballroom, Ballroom Level)**

5:00 pm Jonathan Geiger, President, Society on NeuroImmune Pharmacology (SNIP)

**Awards Banquet (Vevey, Event Centre)**

7:30 pm Join friends and colleagues as we dine together and recognize our award recipients.

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**Saturday, April 14<sup>th</sup>**

7:45 am Registration and Continental Breakfast (Lucerne Foyer)

**Session 15: Strategies Against Neuroinflammation and Neurological Infection (Lucerne Ballroom, Ballroom Level)**

Chair: Bruce Brew (St. Vincents Hospital Sydney)

9:00 am Camillo Rojas (Johns Hopkins University, Baltimore, MD, USA)  
*Drug discovery goes back to school: Discovery of small molecule neutral sphingomyelinase2 inhibitors*

3:20 pm Afternoon Break (Montreux Foyer)

**Session 14B (ISNV):  
Flaviviruses (Montreux, Event Centre)**

Chair: David Beckham (University of Colorado Denver)

3:40 pm Mehul Suthar (Emory University, Atlanta, GA, USA)  
*Innate immune regulation of neurotropic flaviviruses*

**Plenary**

4:05 pm Dan Barouch (Beth Israel Deaconess Medical Center, Boston, MA, USA)  
*Preclinical and clinical development of Zika virus vaccines*

**Plenary**

4:30 pm Ilker Sariyer (Temple University, Philadelphia, PA, USA)  
*Non-nucleoside reverse transcriptase inhibitor (NNRTI) rilpivirine suppresses Zika virus (ZIKV) in glial cells*

4:45 pm Questions & Answers (preceding three speakers)

**ISNV Board of Directors Meeting (St. Gallen, Event Centre)**

5:00 pm Igor Koralnik, President, International Society for NeuroVirology (ISNV)

9:30 am Laura Jaeger (Food & Drug Administration, Silver Spring, MD, USA)  
*Biomarker use in clinical trials for drug development purposes*

**Session 16: *Special Topics in NeuroVirology (Lucerne Ballroom, Ballroom Level)***

Chair: Jennifer Gordon (Temple University School of Medicine)

10:00 am Clayton Winkler (Rocky Mountain Laboratories, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Hamilton, MT, USA)  
*CCR2 is not required for Ly6Chi monocyte egress from the bone marrow, but is necessary for migration within the brain in La Crosse Virus encephalitis*

10:15 am Avindra Nath (National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD, USA)  
*Human endogenous retrovirus K envelope protein causes nucleolar dysfunction by activating p53- signal pathway*

10:30 am Yoshimi Akahata (National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD, USA)  
*Immunophenotypic characterization of CSF B cells in virus-associated neuroinflammatory diseases*

10:45 am Morning Break (Lucerne Foyer)

**Session 17: *Demyelinating Diseases (Lucerne Ballroom, Ballroom Level)***

Chair: Igor Koralnik (Rush Medical College, Rush University)

11:05 am Xin Dang (Rush University, Chicago, IL, USA)  
*Enhanced target-enrichment virus sequencing reveals a complex JC virus population in the brain of PML patients*

11:20 am Susanta Mondal (Rush University, Chicago, IL, USA)  
*Low dose aspirin ameliorates experimental allergic encephalomyelitis via interleukin-11-mediated upregulation of Tregs*

11:35 am Rasha Waheed (Rush University, Chicago, IL, USA)  
*Multiple sclerosis treatment strategy after natalizumab-associated progressive multifocal leukoencephalopathy*

11:50 am Mahmut Safak (Temple University, Philadelphia, PA, USA)  
*Trans-spliced products of JC virus (JCV) late transcripts encode novel proteins detectable in PML patient brain samples*

**Closing Remarks and Meeting Adjournment (Lucerne Ballroom, Ballroom Level)**

12:05 pm Johnny He, 2018-19 President, Society on NeuroImmune Pharmacology (SNIP)  
Igor Koralnik, President, International Society for NeuroVirology (ISNV)

*Current as of April 8<sup>th</sup>, 2018*