

# 16<sup>th</sup> International Symposium on **NeuroVirology**

Held jointly with the

## 2019 Conference on **HIV in the Nervous System**



**November 12-16, 2019**  
**Westin Buckhead Atlanta**  
**Atlanta, Georgia, USA**

### **ISNV Meetings Committee**

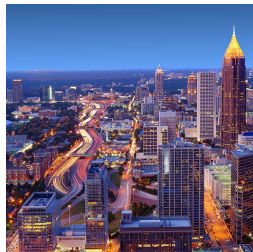
Lynn Pulliam (Co-Chair)  
Brian Wigdahl (Co-Chair)  
Bruce Brew  
Jennifer Gordon

Avindra Nath  
Michael Nonnemacher  
Valerie Wojna

### **Local Organizing Committee**

Walter Royal, III (Co-Chair)  
William Tyor (Co-Chair)

Margo Brinton  
James Sejvar



## Agenda for the 16<sup>th</sup> International Symposium on NeuroVirology and 2019 Conference on HIV in the Nervous System

This stimulating meeting, which will highlight new findings and accomplishments in some of the most important areas of research in neurovirology, will be held at the Westin Buckhead Atlanta in Atlanta, Georgia, USA. For more information, visit the meeting pages on the ISNV web site (<http://www.isnv.org/atlanta19/>). A companion meeting guide is also available for your smartphone or tablet. Go to <https://guidebook.com/g/atlanta19> or see the poster by the registration desk for details.

Unless indicated otherwise, the meeting sessions and events will be held in the Grand Ballroom A & B on the Conference Level (4th Floor).

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### Tuesday, November 12<sup>th</sup>

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3:00 pm Meeting check-in and on-site registration for the meeting

#### Opening Reception (East & West Paces, Conference Level / 4th Floor)

5:30 pm Get reacquainted with friends and colleagues before Wednesday morning's opening session. The reception will conclude at 6:30 pm.

#### Special Event: *Diversity/Inclusion Event* East & West Paces, Conference Level / 4th Floor

6:30 pm The event will feature a presentation titled "Addressing diversity, inclusion, and equity in research and healthcare." The featured speaker will be Sandra Harris-Hooker, Ph.D. (Morehouse School of Medicine, Atlanta, Georgia, USA).

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### Wednesday, November 13<sup>th</sup>

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7:30 am Registration and Continental Breakfast  
(Grand Ballroom Pre-Function Lobby, Conference Level / 4th Floor)

#### Welcome and Opening Remarks

8:30 am Bruce Brew, President, International Society for NeuroVirology (ISNV)  
Lynn Pulliam, Co-Chair, ISNV Meetings Committee  
Walter Royal, III, Co-Chair, Local Organizing Committee

#### Special Session: *Emerging Infections: Update from the CDC* Session Chairs: Avindra Nath and William Tyor

##### 8:50 am *Introduction and Plenary*

James J. Sejvar, M.D. (Centers for Disease Control and Prevention, Atlanta, Georgia, USA)  
*Emerging CNS viral threats in the 21st Century*

9:15 am Ryan A. Maddox, Ph.D. (Centers for Disease Control and Prevention, Atlanta, Georgia, USA)  
*Chronic Wasting Disease: The history and emergence of a cervid prion disease in North America*

9:40 am Adriana S. Lopez, M.H.S. (Centers for Disease Control and Prevention, Atlanta, Georgia, USA)  
*Acute flaccid myelitis surveillance in the United States, 2018*

10:05 am Speakers will take questions and moderate a discussion of emerging infections.



10:20 am Morning Break

**Session I:** *Neuroinflammation and Cognitive Impairment*  
Session Chairs: Jeymohan Joseph and Brian Wigdahl

10:40 am **Plenary**

Susanna Rosi, Ph.D. (University of California, San Francisco, and Zuckerberg San Francisco General Hospital, San Francisco, California, USA)

*The role of neuroinflammation in traumatic brain injury and aging*

11:10 am Rafal Kaminski, Ph.D. (Temple University Lewis Katz School of Medicine, Philadelphia, Pennsylvania, USA)

*CRISPR-Cas9 mediated disruption of ALCAM gene inhibits adhesion and trans-endothelial migration of myeloid cells*

11:25 am Ronald Ellis, M.D., Ph.D. (University of California, San Diego, San Diego, California, USA)

*Reduced dopamine and homovanillic in cerebrospinal fluid in depressed people with HIV infection*

11:40 am Rick Meeker, Ph.D. (University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, North Carolina, USA)

*Stabilization of HIV-associated macrophage inflammatory activity by a p75 neurotrophin receptor ligand*

11:55 am Lunch Break & Networking (talks resume at 1:25 pm)

**Session II:** *Animal Models*  
Session Chairs: Jennifer Gordon and Andrew MacLean

1:25 pm **Plenary**

Margo Brinton, Ph.D. (Georgia State University, Atlanta, Georgia, USA)

*Anti- and pro-viral effects of OAS and RNase L proteins on flavivirus brain infections*

1:55 pm Michal Toborek, M.D., Ph.D. (University of Miami Miller School of Medicine, Miami, Florida, USA)

*Ischemic stroke in HIV-infected brain*

2:10 pm Hailong Li, M.D., Ph.D. (University of South Carolina, Columbia, South Carolina, USA)

*EcoHIV in rats: Infection in primary microglia*

2:25 pm Woong-Ki Kim, Ph.D. (Eastern Virginia Medical School, Norfolk, Virginia, USA)

*Perivascular macrophages in the neonatal macaque brain undergo massive necroptosis after simian immunodeficiency virus infection*

**Special Event:** *Audrey Gilden Lectureship*

2:40 pm Maria A. Nagel, M.D. (University of Colorado, Denver, Aurora, Colorado, USA)

*Varicella zoster virus and amyloid-associated diseases*

Introduction by Peter Kennedy

3:10 pm Afternoon Break

**Session III:** *Demyelinating Diseases*  
Session Chairs: Steve Jacobson and Pasquale Ferrante

- 3:30 pm **Plenary**  
Irene Cortese, M.D. (National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, Maryland, USA)  
*Immunotherapeutic approaches for the treatment of PML*
- 4:00 pm Mahmut Safak, Ph.D. (Temple University Lewis Katz School of Medicine, Philadelphia, Pennsylvania, USA)  
*JC virus late coding region encodes a novel nuclear protein, ORF4, which targets PML-NBs and modulates their expression and reorganization*
- 4:15 pm Yoshimi Enose-Akahata, Ph.D. (National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, Maryland, USA)  
*Clinical trial of Raltegravir, an integrase inhibitor, in HTLV-1 associated myelopathy/tropical spastic paraparesis*
- 5:00 pm ISNV Board of Directors meeting (Chastain Room, Conference Level / 4<sup>th</sup> Floor)

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**Thursday, November 14<sup>th</sup>**

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- 7:30 am Registration and Continental Breakfast  
(Grand Ballroom Pre-Function Lobby, Conference Level / 4th Floor)
- Session IV:** *Extracellular Vesicles and Neurovirology*  
Session Chairs: Lynn Pulliam and Ilker Sariyer
- 8:30 am **Plenary**  
Hameeda Sultana, Ph.D. (Old Dominion University, Norfolk, Virginia, USA)  
*EVs in the route of flaviviral neuropathogenesis: From arthropods to mammals*
- 9:00 am Valerie Wojna, M.D. (University of Puerto Rico School of Medicine, San Juan, Puerto Rico)  
*Soluble insulin receptor levels in plasma, exosomes, and urine: Novel biomarkers for HIV-associated neurocognitive disorders*
- 9:15 am Santosh Kumar, M.S., Ph.D. (University of Tennessee Health Science Center, Memphis, Tennessee, USA)  
*Circulating plasma extracellular vesicles in alcohol-induced HIV-1 pathogenesis and neuronal damage*
- 9:30 am Fatah Kashanchi, Ph.D. (George Mason University College of Science, Fairfax, Virginia, USA)  
*Extracellular vesicles and viruses: Who comes out first?*
- Session V:** *Investigators-In-Training (Part I)*  
Session Chairs: Lena Al-Harathi and Jay Rappaport
- 9:45 am Asit Kumar, M.Sc., Ph.D. (Postdoctoral Fellow, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA)  
Mentor: Dr. Norman Haughey  
*Modulation of neuronal dendritic spine morphology and function by astrocyte derived extracellular vesicles following morphine withdrawal*

- 10:00 am Bahareh Torkzaban (Ph.D. Candidate, Temple University Lewis Katz School of Medicine, Philadelphia, Pennsylvania, USA)  
Mentor: Dr. Kamel Khalili  
*The lncRNA LOC102549805 (U1) modulates neurotoxicity of HIV-1 Tat protein*
- 10:15 am Yuqing Gong (Ph.D. Candidate, The University of Tennessee Health Science Center, Memphis, Tennessee, USA)  
Mentor: Dr. Santosh Kumar  
*Novel elvitegravir nanoformulation for drug delivery across the blood-brain barrier to achieve HIV-1 suppression in the CNS*
- 10:30 am Ke Liao, M.S. (Ph.D Candidate, University of Nebraska Medical Center, Omaha, Nebraska, USA)  
Mentor: Dr. Shilpa Buch  
*Astrocyte-derived extracellular vesicles mediate HIV-1 Tat and opioid-induced pericyte loss and blood-brain-barrier breach*
- 10:45 am Morning Break

**Session VI: *Substance Abuse and Neuropathogenesis***  
Session Chairs: Michael Nonnemacher and Marcus Kaul

- 11:05 am **Plenary**  
Cecilia T. Costiniuk, M.D., M.Sc., F.R.C.P.C (McGill University Health Center, Montreal, Quebec, Canada)  
*Cannabis and the brains of people living with HIV: The good, the bad and the unknown*
- 11:35 am Walter Royal, III, M.D. (Morehouse School of Medicine, Atlanta, Georgia, USA)  
*Effects of sex on cigarette smoke- and nicotine-induced motor and behavioral abnormalities in HIV-1 transgenic rats*
- 11:50 am Taha Mohseni Ahooyi, Ph.D. (Temple University Lewis Katz School of Medicine, Philadelphia, Pennsylvania, USA)  
*RNA deep sequencing reveals the alteration of neuronal cholesterol biosynthesis by HIV-1 Tat*
- 12:05 pm Annadurai Thangaraj, Ph.D. (University of Nebraska Medical Center, Omaha, Nebraska, USA)  
*Combinatorial effects of HIV Tat and cocaine on mitochondrial damage, defective mitophagy and activation of microglia: Implications for NeuroHIV*
- 12:20 pm Lunch Break & Networking (talks resume at 1:50 pm)

**Special Event: *Mentorship: Work/Life Balance***  
Moderator: Jennifer Gordon

- 1:50 pm This special session will focus on achieving and maintaining a good work/life balance. A brief Q&A session will follow panelist discussions. Panelists will include:
- Dionna Williams, Ph.D. (Johns Hopkins School of Medicine)
  - Michael Nonnemacher, Ph.D. (Drexel University College of Medicine)
  - Fatah Kashanchi, Ph.D. (George Mason University College of Science)
  - Maria Nagel, M.D. (University of Colorado School of Medicine)

**Special Event:** *Paradigm Builder Lectureship*

2:50 pm Kamel Khalili, Ph.D. (Temple University Lewis Katz School of Medicine, Philadelphia, Pennsylvania, USA)

*Towards the Cure for HIV: The CRISPR Story*

Introduction by Dr. Lynn Pulliam

**Special Event:** *Poster Session and Reception*  
**Grand Ballroom C, D, & E, and Pre-Function Lobby, Conference Level / 4<sup>th</sup> Floor**

5:30 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 8:00 pm.

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**Friday, November 15<sup>th</sup>**

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7:30 am Registration and Continental Breakfast  
(Grand Ballroom Pre-Function Lobby, Conference Level / 4<sup>th</sup> Floor)

**Session VII:** *Therapeutic Agents and Vaccines for Neurodegeneration*  
Session Chairs: Tricia Burdo and Norman Haughey

8:30 am **Plenary**

Tsuneya Ikezu, M.D., Ph.D. (Boston University, Boston, Massachusetts, USA)

*Therapeutic intervention of extracellular vesicle and microglia-mediated propagation of tau pathology*

9:00 am Dionna Williams, Ph.D. (Johns Hopkins School of Medicine, Baltimore, Maryland, USA)

*Differential localization of antiretroviral therapy in brain: Mapping prodrug and pharmacologically active metabolites*

9:15 am Xiaolei Zhu, M.D., Ph.D. (Johns Hopkins School of Medicine, Baltimore, Maryland, USA)

*Depressive-like behaviors in EcoHIV mouse and potential therapeutics*

**Session VIII:** *Investigators-In-Training (Part II)*  
Session Chairs: Jay Rappaport and Walter Royal, III

9:30 am Ana Beatriz DePaula-Silva, Ph.D. (Postdoctoral Fellow, University of Utah School of Medicine, Salt Lake City, Utah, USA)  
Mentor: Dr. Robert Fujinami

*Modulation of TREM-1 activation in macrophages alters the development of acute seizures*

9:45 am Matthew Lauver (Ph.D. Candidate, Penn State College of Medicine, Hershey, Pennsylvania, USA)  
Mentor: Dr. Aron Lukacher

*A JCPyV-PML capsid mutation in MuPyV mediates humoral immune evasion and preferential CNS replication*

10:00 am Sara Nass, Ph.D. (Postdoctoral fellow, Virginia Commonwealth University, Richmond, Virginia, USA)  
Mentor: Dr. Kurt Hauser

*Cytokine production within the cortico-basal ganglia-thalamocortical circuitry and anhedonia are altered by HIV-1 Tat and morphine*

10:15 am Andrew Atkins, Ph.D. (Postdoctoral Fellow, Drexel University College of Medicine, Philadelphia, Pennsylvania, USA)  
Mentor: Dr. Brian Wigdahl  
*Unbiased detection of CRISPR/Cas9 cleavage to validate in silico specificity predictions for gRNAs targeting HIV-1 proviral DNA sequences*

10:30 am Morning Break

**Session IX: *Neural Aging and Comorbidities***  
Session Chairs: Rosemarie Booze and Jonathan Geiger

10:55 am **Plenary**

David J. Moore, Ph.D. (University of California, San Diego, San Diego, California, USA)  
*Biomarkers, neuropathology, and cognition in aging persons with HIV: Can we distinguish HAND from MCI?*

11:25 am Bing Sun, M.D., Ph.D. (San Francisco Veterans Healthcare System, University of California, San Francisco, San Francisco, California, USA)  
*HCV cure in HIV coinfection dampens inflammation and improves cognition through multiple mechanisms*

11:40 am Leah Rubin, M.P.H., Ph.D. (Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA)  
*Associations between antiretroviral drugs on depressive symptomatology in homogenous subgroups of women with HIV*

11:55 am Jason Paris, Ph.D. (University of Mississippi School of Pharmacy, University, Mississippi, USA)  
*HIV-1 Tat promotes age-related cognitive, anxiety-like, and antinociceptive impairments in mice that are moderated by aging endocrine status*

12:10 pm Lunch Break & Networking (talks resume at 1:40 pm)

**Special Session: *Emory Center for AIDS Research (CFAR)***  
Session Chairs: Walter Royal, III, and William Tyor

1:40 pm Jennifer Felger, Ph.D. (Emory University School of Medicine, Atlanta, Georgia, USA)  
*Impact of inflammation on dopamine, motivation and motor function: Relevance to HIV*

2:00 pm Albert Anderson, M.D. (Emory University School of Medicine, Atlanta, Georgia, USA)  
*Evaluating HIV-associated neurocognitive impairment with the interactive DETECT device*

2:20 pm Vasiliki Michopoulos, Ph.D. (Emory University School of Medicine, Atlanta, Georgia, USA)  
*Psychological and physiological correlates of trauma-related psychopathology in African American women living with HIV*

2:40 pm Jessica Robinson-Papp, M.D., M.S. (Icahn School of Medicine at Mt. Sinai, New York, New York, USA)  
*Autonomic neuropathy and gastrointestinal function in people living with HIV*

3:00 pm In this Q&A session, the preceding four speakers will answer questions about their presentations.

3:15 pm Afternoon Break

**Session X: *Viral Latency and Reservoirs***

Session Chairs: Melissa Churchill and Peter Kennedy

3:35 pm

**Plenary**

Ann Chahroudi, M.D., Ph.D. (Emory University, Atlanta, Georgia, USA)

*HIV persistence: Lessons from nonhuman primates*

4:05 pm

Norman Haughey, Ph.D. (Johns Hopkins School of Medicine, Baltimore, Maryland, USA)

*A structurally novel inhibitor of neutral sphingomyelinase 2 selectively kills HIV-infected cells*

4:20 pm

Ravi Mahalingam, Ph.D. (University of Colorado School of Medicine, Aurora, Colorado, USA)

*Recombinant simian varicella virus expressing cas9 and virus-specific guide RNA provides a novel vaccine model to inactivate latent virus DNA*

4:35 pm

Randall Cohrs, Ph.D. (University of Colorado School of Medicine, Aurora, Colorado, USA)

*Host and virus chromatin interactions during lytic infection of HFL cells with VZV*

**Special Event: *Pioneer Award Dinner***

**Buckhead Ballroom, Lobby Level / 2<sup>nd</sup> Floor**

7:00 pm

Join friends and colleagues as we dine together and recognize our award recipients.

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**Saturday, November 16<sup>th</sup>**

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8:00 am

Registration and Continental Breakfast  
(Grand Ballroom Pre-Function Lobby, Conference Level / 4th Floor)

**Session XI: *Neuropathogenesis***

Session Chairs: Dianne Langford and Johnny He

9:00 am

**Plenary**

Bruce Brew, M.B.B.S., D.Med.Sci., D.Sc., F.R.A.C.P., F.A.A.N. (University of New South Wales (UNSW) Sydney, Sydney NSW, Australia)

*HIV neuropathogenesis, Alzheimer's, and vascular dementia: A complex mix or discrete entities?*

9:30 am

William Lynch, Ph.D. (Northeast Ohio Medical University, Rootstown, Ohio, USA)

*Astrocyte infection is required for retrovirus-induced spongiform neurodegeneration despite suppressed viral protein expression*

9:45 am

Alina Popescu Hategan, Ph.D. (National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, Maryland, USA)

*HIV-Tat autocleaves and forms novel amyloid fibrils which are highly neurotoxic*

10:00 am

Joe Steiner, Ph.D. (National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, Maryland, USA)

*Zika envelope protein causes toxicity to human neural stem cells and neuronal cultures via GSK3 $\beta$*

10:15 am

Morning Break



**Session XII: *Special Topics in Neurovirology***  
Session Chairs: Kamel Khalili and Ilker Sariyer

- 10:35 am **Plenary**  
Sabita Roy, Ph.D. (University of Miami Miller School of Medicine, Miami, Florida, USA)  
*Role of the gut microbiome in opioid associated co-morbidities*
- 11:05 am Christopher Power, M.D., F.R.C.P(C) (University of Alberta, Edmonton, Alberta, Canada)  
*Human pegivirus-1 is neurotropic and associated with neuroinflammation*
- 11:20 am Tory Johnson, M.S., Ph.D. (Johns Hopkins School of Medicine, Baltimore, Maryland, USA)  
*Chronic dengue virus encephalitis in a patient with progressive dementia with extrapyramidal features*
- 11:35 am Hassen Wollebo, Ph.D. (Temple University Lewis Katz School of Medicine, Philadelphia, Pennsylvania, USA)  
*Interplay between the DNA damage response and the NF-KB signaling regulates JCV replication*

**Closing Remarks and Meeting Adjournment**

- 11:50 am Bruce Brew, President, International Society for NeuroVirology (ISNV)  
Brian Wigdahl, Co-Chair, ISNV Meetings Committee  
Walter Royal, III, Co-Chair, Local Organizing Committee

Current as of November 7<sup>th</sup>, 2019

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