



## Program of the 25<sup>th</sup> SNIP Scientific Conference

Hotel PORTLAND MARRIOTT DOWNTOWN WATERFRONT, Portland, OR, USA

### Wednesday April 10, 2019

SNIP Council Meeting 10:00 AM – 12:00 PM

Registration for SNIP Meeting Open 2:00 – 8:00 PM

Satellite Symposium 12:00 – 6:00 PM

#### **Unraveling NeuroAIDS in the Presence of Substance Use Disorder**

*Sponsored and organized by NIH/NIDA*

Co-Chairs: **Yu (Woody) Lin** and **Roger Sorensen**

12:00 – 12:10 **Opening Remarks**

NIDA Staff

**Yu (Woody) Lin**, Ph.D., Program Director, National Institute on Drug Abuse, NIH

12:10 – 12:40 ***Neuroimmune Complications and Consequences of HIV Infection Acquired in Persons with SUDs – an overview***

**Scott L. Letendre**, M.D., Professor of Medicine, Department of Medicine, Division of Infectious Diseases, University of California San Diego (UCSD), CA

12:40 – 1:30 **Attribute of Stimulant Use Disorders in NeuroAIDS**

***HIV immuno-pathogenesis in the presence of disrupted DA system***

**Peter Gaskill**, Ph.D., Assistant Professor, Department of Pharmacology and Physiology, Drexel University College of Medicine, Philadelphia, PA

***HIV neuro-pathogenesis in the presence of disrupted DA system***

**Rosemarie Booze**, Ph.D., Professor, Bicentennial Endowed Chair of Behavioral Neuroscience, University of South Carolina, SC

1:30 – 1:55 **Q & A and Panel I Discussion:**

Co-chairs: **Rosemarie Booze** and **Mariana Cherner** (UCSD)

Panel members: **Scott L. Letendre**, **Peter Gaskill** and **Maria C. Marcondes**

1:55 – 2:45 **Attribute of Opioid Use Disorder in NeuroAIDS**

***HIV immuno-pathogenesis in the presence of disrupted endogenous opioid system***

**Shilpa Buch**, Ph.D., Department of Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center, NE

***HIV neuro-pathogenesis in the presence of disrupted endogenous opioid system***

**Sylvia Fitting**, Ph.D., Assistant Professor, University of North Carolina Chapel Hill, Chapel Hill, NC

2:45 – 3:10 **Q & A and Panel II Discussion:**

Co-chairs: **Kurt Hauser** (VCU) and **Shilpa Buch**

Panel Members: **Sylvia Fitting**, **Wenzhe Ho** (TU) and **Jay McLaughlin** (UF)

3:10 – 3:25 Break

3:25 – 4:40 **Attribute of Cannabis and Tobacco Use Disorder in NeuroAIDS**

***HIV neuro-pathogenesis in HIV infected tobacco and cannabis smokers***

**Linda Chang**, M.D., Professor, University of Maryland School of Medicine, MD

***HIV immuno-pathogenesis in the presence of disrupted nicotinic system***

**Robert Gross**, M.D., Associate Professor, University of Pennsylvania, PA

4:40 – 5:05 **Q & A and Panel III Discussion:**

Co-chairs: **Linda Chang** and **Johnny He**

Panel members: **Sylvia Fitting** and **Robert Gross**

5:05 – 5:30 **Impact of SUDs on Immune Function**

**Sulie L. Chang**, Ph.D., Professor of Biological Sciences and Director of the Institute of NeuroImmune Pharmacology, Seton Hall University, South Orange, NJ

5:30 – 6:00 General Discussion:

Co-Chairs: **Yu (Woody) Lin** and **Roger Sorensen**

6:00 Satellite Meeting Adjourn

## **25<sup>th</sup> Scientific Conference of SNIP Begins**

6:00 PM

### Opening Night Reception & Poster Session (1)

6:00 – 9:30 PM

*Sponsored by the Early Career Investigator Award (ECITA) Committee*

**Posters W01 – W58** will stay up until Thursday's afternoon break

### DISC Networking Session

8:00 – 9:30 PM

*Sponsored by the Diversity and Inclusion SNIP Committee (DISC)*

## **Thursday April 11, 2019**

Breakfast

7:00 – 8:00 AM

### President's Welcome

8:00 – 8:10 AM

**Dr. Johnny He**, Ph. D., Interim Chair & Professor

Microbiology, Immunology & Genetics, University of North Texas Health Science Center,  
Fort Worth, TX, USA

### Presidential Symposium (1)

8:10 – 9:40 AM

#### **Creativity in Research**

Co-Chairs: **Brian Wigdahl**, Ph.D., Drexel Univ. Philadelphia, PA

**Sanjay B. Maggirwar**, Ph.D., Univ. Rochester, Rochester, NY

Talk 1) **Sanjay Maggirwar**, Ph.D., Univ. of Rochester Medical Center, Rochester, NY  
"Creativity in Research: Avoiding the kiss of death"

Talk 2) **Tariq Rana**, Ph.D., Univ. California San Diego, La Jolla, CA  
"Epigenetic and Epitranscriptomic Regulation of HIV infection"

Talk 3) **Brandon K. Harvey**, Ph.D., National Institute on Drug Abuse, Baltimore, MD  
"Developing molecular tools: Sometimes your control is the interesting part of the experiment"

Talk 4) **Mark Rizzo**, Ph.D., Univ. of Maryland School of Medicine, Baltimore, MD  
"Taking inspiration from other fields to tackle problems worth FRETting"

Talk 5) **Carlos A. Paladini**, Ph.D., Univ. of Texas at San Antonio, San Antonio, TX  
"Hunting neurons deep in the brain: developing in vivo methods to suit your research questions"

Break (posters available for viewing) 9:40 – 10:00 AM

Presidential Lecture 10:00 – 11:00 AM

Introduction: **Dr. Johnny He**, Ph. D., UNTHSC, Fort Worth, TX, USA

**Dr. Antonello Bonci**, M.D., Scientific Director, NIDA, NIH (Currently on sabbatical)  
Synaptic Plasticity, Section Chief, NIDA IRP, NIH/NIDA, Baltimore, MD, USA  
"From optogenetics to a novel treatment against cocaine abuse"

Symposium 2 11:00 – 12:15 PM

**The Biology of Adenosine**

Chair: **Jonathan Geiger**, Ph.D., Univ. North Dakota, Grand Forks, ND

Talk 1) **Anusha Mishra**, OHSU, Portland, OR  
"The purinergic system in astrocyte biology and neurovascular coupling."

Talk 2) **Munjai Acharya**, University of California Irvine, Irvine, CA  
"Targeting astrocytic adenosine kinase to remediate radiation-induced brain injury"

Talk 3) **Ursula Sandau**, OHSU, Portland, OR  
"Transient use of a systemic adenosine kinase inhibitor attenuates epilepsy development in mice"

Meet the Mentors Luncheon 12:15 – 2:00 PM  
*Sponsored by the Early Career Investigator Committee*

Additional Council Meeting (Planning of next conference) 12:15 – 2:00 PM

Lunch Break 12:15 – 2:00 PM

Co-Chairs: **Gurudutt Pendyala**, Ph.D., Univ. of Nebraska Med. Ctr., Omaha, NE,  
**Sylvia Fitting**, Ph.D., University of North Carolina, Chapel Hill, NC, and  
**Michael Nonnemacher**, Ph.D., Drexel University, Philadelphia, PA

**Part I Predoctoral** (5 min presentations)

Talk 1) **Michael Ohene-Nyako**, Rush University (Napier Lab)

“The blood-brain barrier is dysregulated in the hippocampus of Meth self-administering HIV-1 transgenic rats”

Talk 2) **Omalla Allan Olwenyi**, University of Nebraska Medical Center (Byrareddy Lab)

“Retinoic Acid (RA) enhances the Recovery of Replication Competent Virus from Latent SIV infected cells by activating  $\alpha 4\beta 7$ -expressing cells”

Talk 3) **Farah Shahjin**, University of Nebraska Medical Center (Yelamanchili Lab)

“Role of extracellular vesicles in HIV-1 and methamphetamine induced neurotoxicity”

Talk 4) **Hang Liu**, Temple University (Ho Lab)

“Changes of TLR3 Signaling Activation during Astroglial Differentiation”

Talk 5) **Jamie Marino**, Drexel University (Nonnemacher Lab)

“Effect of HIV-1 Tat-induced senescence on astrocytes and BMECs in a blood brain barrier model”

Talk 6) **Yuqing Gong**, University of Tennessee Health Sciences Center (Kumar Lab)

“Novel elvitegravir nanoformulation for drug delivery across the blood-brain barrier to achieve HIV-1 suppression in the CNS”

**Q & A session part I**

**Part II Postdoctoral** (5 min presentations)

Talk 1) **Silvia Torices**, Ph.D., University of Miami (Toborek Lab)

“HIV alters Occludin-Alix-Cav-1 interactions in human brain vascular pericytes”

Talk 2) **Hina Singh**, Ph.D., University of California at Riverside (Kaul Lab)

“Effect of IFNAR1 Deficiency on Neuronal and Astrocytic Cell Markers”

Talk 3) **Purnima Gupta**, Ph.D., Florida International University (Nair Lab)

“Efficacy studies of Magneto-electric nanoparticle bound Cas9/gRNA/Naltrexone to treat opioid addiction and neuroAIDS”

Talk 4) **Stephanie Matt**, Ph.D., Drexel University (Gaskill Lab)

“Role of dopamine-mediated conformational changes of CCR5 in HIV infection of macrophages”

Talk 5) **Andrew Atkins**, Ph.D., Drexel University (Wigdahl Lab)

“Validation of in silico predictions for gRNA specificity targeting HIV-1 proviral sequences using unbiased detection of CRISPR/Cas9 cleavage events”

*Q & A session part II*

Break / Poster mounting **T01-T58** for Poster Session (2) 3:45 – 4:00 PM

NIH Workshop on Research Priorities & Grant Writing 4:00 – 5:00 PM

Participants:

**Dr. Yu (Woody) Lin**, M.D., Ph.D., NIDA, NIH, Bethesda, MD, USA

**Dr. Vasudev Rao**, Ph.D., NIMH, NIH, Bethesda, MD, USA

**Dr. Rao Rapaka**, Ph.D., NIDA, NIH, Bethesda, MD, USA

Poster Session (2) 5:00 – 8:30 PM

**Posters T01-T58**

JNIP Editorial Board Meeting 8:00 – 10:00 PM

**Friday April 12, 2019**

Breakfast & Perkin Elmer presentation 7:00 – 8:00 AM

Symposium 3 8:00 – 9:30 AM

**Glia, Toxins & Drugs of Abuse** (in collaboration with the **Neurotoxicity Society**)

Chair: **Italo Mocchetti**, Ph. D., Georgetown University, Washington, DC

Talk 1) **Gilles J Guillemin**, Ph.D., Macquarie University, NSW, AUS

“Glia, tryptophan metabolism and neurodegenerative diseases “

Talk 2) **Jean Harry**, Ph.D., NIH/NIEHS, RTP, NC

“Modulatory ability of toxicants to shift regulatory processes of microglia and neuroinflammation“

Talk 3) **Julie K. Andersen**, Ph.D., The Buck Institute, Novato, CA

“Senolytics as novel potential therapeutics for Alzheimer’s and Parkinson’s disease”

Talk 4) **Eliseo Eugenin**, Ph.D., University of Texas Medical Branch, Galveston, TX

“Role of Glial cells in the pathogenesis of NeuroHIV”

Talk 5) **Kathleen Maguire-Zeiss**, Ph. D., Georgetown University Med Ctr, Washington, DC

“Aberrant proteins incite a complex glial inflammatory response”

2<sup>nd</sup> Adarsh Kumar Lecture – (DISC Lecture) 9:30 – 10:30 AM

Introduction: **Dr. Kelly Jordan-Scuitto**, Ph.D., Univ. of Pennsylvania, Philadelphia, PA

**Dr. Susan Amara**, Ph.D., Scientific Director, NIH/NIMH, Bethesda, MD, USA

“Neurotransmitter transporters & the cellular mechanisms of amphetamines: a presynaptic perspective”

Break 10:30 – 10:45 AM

Symposium 4

10:45 – 12:15PM

**Blood-Brain Barrier Dysregulation Due to Drugs of Abuse and Pathogens**

Co-chairs: **Dionna Williams**, Ph.D., John Hopkins University, Baltimore, MD  
**Howard E. Gendelman**, M.D., University of Nebraska Medical Center, Omaha, NE

Talk 1) **Jorge Alvarez**, Ph.D., Univ. of Pennsylvania, Philadelphia, PA  
“The blood meningeal barrier orchestrates the development of neuroinflammatory responses”

Talk 2) **MaryPeace McRae**, Pharm.D., Ph.D., Virginia Commonwealth Univ, Richmond, VA  
“Opiates and HIV-1 perturb the cellular/regional biodistribution of antiretrovirals in the brain by disrupting the blood-brain barrier and efflux transporter function”

Talk 3) **Michal Toborek**, Ph.D., University of Miami, Miami, FL  
“Pericytes and BBB in substance abuse”

Talk 4) **Richard Daneman**, Ph.D., University of California, San Diego, CA  
“Regulation of the Blood-Brain Barrier in Health and Disease”

Lunch (on your own) 1:00 PM

Exploration of Portland and surroundings Afternoon

**Saturday April 13, 2019**

Breakfast 7:00 – 8:00 AM

Symposium 5

8:00 – 9:40 AM

**Addiction, Genetics and Neuroimmune Signaling**

Chair: **Tamara Phillips**, Ph.D., VA Portland Health Care System, Research and Development Service, Portland, OR; Department of Behavioral Neuroscience, Portland Alcohol Research Center, and Methamphetamine Abuse Research Center, Oregon Health & Science University, Portland, OR

Talk 1) **Kathleen Grant**, Ph.D. Oregon National Primate Research Center, OHSU, OR  
“Immunoreactive Effects of Long-Term Voluntary Ethanol Consumption in Non-Human Primates”

Talk 2) **Robert Hitzemann**, Ph.D. OHSU, Portland, OR  
“Genetic Findings from Mouse to Macaque to Man: Neuroimmune Function and Excessive Ethanol Consumption”

Talk 3) **William Hoffman**, M.D., Ph.D., VA Portland Health Care System, OHSU, Portland, OR  
“The Relationship Between Interleukin-6 and Functional Connectivity in Methamphetamine Users”

Talk 4) **Jennifer Loftis**, Ph.D., VA Portland Health Care System, OHSU, Portland, OR  
“A Potential Neuroimmune-Based Treatment for Methamphetamine Addiction”

Break 9:40 – 10:00 AM

Bill Narayan Memorial Lecture

10:00 – 11:00 AM

Introduction: **Howard Fox**, M.D., Ph.D., Univ. of Nebraska Medical Center, Omaha, NE

**Dr. Scott W. Wong**, Ph.D., Vaccine and Gene Therapy Institute & Oregon Health & Science University, Portland, OR, USA

“Herpesvirus- and lentivirus-mediated neuroinflammation in the non-human primate”

Symposium 6

11:00 – 12:30 PM

**Exosomes in Neuronal Infections and Drugs Abuse**

Co-Chairs: **Santosh Kumar**, Ph. D., UTHSC, Memphis, TN

**Ling Cao**, M.D., Ph.D., University of New England, Biddeford, ME

Talk 1) **Elena V Batrakova**, Ph.D., UNC, Chapel Hill, NC

“Macrophage-derived extracellular vesicles target inflamed brain and deliver therapeutic proteins for treatment of neurodegenerative disorders”

Talk 2) **Servio Ramirez**, PhD, Temple University, Philadelphia, PA

“Extracellular vesicles: Mediators and biomarkers of pathology along CNS barriers”

Talk 3) **Santosh Kumar**, Ph. D., UTHSC, Memphis, TN

“Circulating plasma exosomal cytochrome P450 and antioxidant enzymes and cellular processes”

Talk 4) **Mikin Patel**, Ph.D.cand., Vanderbilt Univ., Nashville, TN

“Role of exosomes in synapse formation”

Open Business Meeting / Lunch

12:30 – 1:30 PM

Symposium 7

1:30 – 3:30 PM

**SNIP Member Symposium: Neuropharmacology & Neuroimmunology**

Co- Chairs: **Siddappa Byrareddy**, Ph.D., Univ. of Nebraska Med. Ctr., Omaha, NE  
and **Dr. Yu (Woody) Lin**, M.D., Ph.D., NIDA, NIH, Bethesda, MD, USA

Talk 1) **Alejandra Borjabad**, Ph.D., Icahn School of Medicine at Mount Sinai, New York, NY  
“Epigenetic Therapy Approach in HIV-mediated Neurocognitive Impairment in Mice”

Talk 2) **Ernest Chivero**, Ph.D., Univ. of Nebraska Med Ctr., Omaha, NE

“Combinatorial effects of HIV Tat and cocaine-mediated activation of microglial NLRP3: Implications for NeuroHIV”

Talk 3) **Rick Meeker**, Ph.D., University of North Carolina, Chapel Hill, NC

“Neuroprotective and anti-inflammatory properties of the neurotrophin receptor ligand, LM11A-31, in animal models of HIV neuropathogenesis”

Talk 4) **Kimberly Williams**, Ph.D., University of Pennsylvania , Philadelphia , PA

“Suppression of Macrophage-Induced Neurotoxin Production via Estrogen Receptor Signaling”

Talk 5) **Ana Sanchez**, A.B., Ph.D., Univ. California San Diego, La Jolla, CA  
“Protease Inhibitors Effects on Vascular Smooth Muscle Cells”

Talk 6) **Jay McLaughlin**, Ph.D., University of Florida, Gainesville, FL  
“Microglia-mediated neuroinflammation bidirectionally modulates morphine reward”

Talk 7) **Marina Aksenova**, Ph.D., University of South Carolina, Columbia, SC  
“Inhibition of the DEAD Box RNA Helicase 3 prevents HIV-1 Tat- and cocaine-induced neurotoxicity by targeting microglia activation”

Talk 8) **Allison Andrews**, Ph.D., Temple University, Philadelphia, PA  
“Characterization of differential monocyte subtype responses in cocaine-induced neuroinflammation”

Break 3:30 – 4:00 PM

Symposium 8 4:00 – 5:30 PM

**Systemic Mechanisms of Neuroimmune Communication & Glymphatics**

Co-Chair: **Michelle Erickson**, Ph.D., UW, Seattle, WA  
**Kelly Jordan-Sciutto**, Ph.D., UPenn, Philadelphia, PA

Talk 1) **William Banks**, Ph.D., UW, Seattle, WA  
“The Neuroimmune Axes of the Blood-brain Barrier”

Talk 2) **Jeffrey Iliff**, Ph.D., OHSU, Portland, OR  
“Glymphatic and meningeal lymphatic function in health and disease”

Talk 3) **Yisel Cantres-Rosario**, Ph.D., Univ. PR, San Juan, PR  
“Macrophage cathepsins as mediators of HAND”

Talk 4) **Michelle Erickson**, Ph.D., UW, Seattle, WA  
“Systemic mechanisms of neuroimmune communication from the lungs: implications for Alzheimer's disease and depression”

Break 5:30 – 7:00 PM

Banquet 7:00 – 10:00 PM

Opening by SNIP President of 2019 Scientific Conference, **Dr. Johnny He**, Ph. D., Interim Chair & Professor, Microbiology, Immunology & Genetics, University of North Texas Health Science Center, Fort Worth, TX, USA, and transfer of SNIP presidency.

Banquet and Award Ceremony hosted by the next SNIP president, **Dr. Sulie L. Chang**, Ph.D., Professor of Biological Sciences and Director of the Institute of NeuroImmune Pharmacology, Seton Hall University, South Orange, NJ

Announcement, Adjournment of Conference