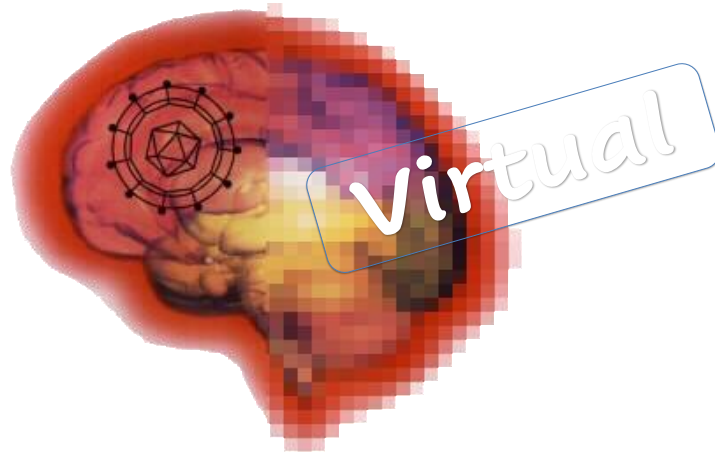


Meeting Agenda

18th International Symposium on **NeuroVirology**

Held jointly with the
**2022 Conference on
HIV in the Nervous System**



October 11-14, 2022



ISNV Meetings Committee

Lynn Pulliam (Co-Chair)
Brian Wigdahl (Co-Chair)

Lena Al-Harathi
Bruce Brew
Michael Nonnemacher

Avindra Nath
Chris Power
Valerie Wojna



Agenda for the 18th International Symposium on NeuroVirology and 2022 Conference on HIV in the Nervous System

The 18th International Symposium on NeuroVirology and 2022 Conference on HIV in the Central Nervous System will be held virtually on October 11-14, 2022. Offered as an abbreviated version of our traditional symposium, this year's virtual symposium will showcase leaders in the field of neurovirology as well as top investigators and clinicians from around the world who are on the leading edges of basic, translational, and clinical research.

All times are Eastern Daylight Time (EDT)

Tuesday, October 11th

Welcome and Opening Remarks

12:00 pm (EDT) Bruce Brew, President, International Society for NeuroVirology (ISNV)
Lynn Pulliam, Co-Chair, ISNV Meetings Committee

NIH/NIMH session: Epigenetic Mechanisms Regulating HIV/CNS Latency
Session Chairs: Howard Fox: University of Nebraska, Omaha, NE
Sara Gianella Weibel: University of California, San Diego, CA

12:15 pm Jeymohan Joseph: NIMH, Bethesda, MD
Meeting Goals and Welcome Remarks

12:20 pm Ron Collman: University of Pennsylvania, Philadelphia, PA
Epigenetic Landscape of HIV-1 Infection in Primary Human Macrophage: Plenary Talk

12:40 pm Lena Al-Harhi: Rush University, Medical Center, Chicago, IL
Epigenetic regulation of HIV in astrocytes: Interface with b-catenin pathway informing cure strategies

12:55 pm Jonathan Karn: Case Western Reserve University, Cleveland, OH
Control of HIV Latency in Microglia by Inflammation and Interactions with Astrocytes and Neurons

1:10 pm Tariq Rana: University of California, San Diego
Epigenetic and Epitranscriptomic Regulation of HIV Infection

1:25 pm Haitao Hu: University of Texas Medical Branch, Galveston, Texas
Epigenetic Suppression of HIV in Myeloid Cells by the BRD4-Selective Small Molecule Modulator ZL0580

1:40 pm Susana Valente: UF Scripps Biomedical Research, Jupiter, FL
The Block-and-Lock Strategy for Human Immunodeficiency Virus Cure: Lessons Learned from Didehydro-Cortistatin A

1:55 pm Lishomwa (Lish) Ndhlovu: Weil Cornell Medicine, New York, NY
Host epigenetic marks as predictors of HIV persistence: Implications for HIV Cure Trials

2:10 pm Session Chairs
Q & A and Research Priorities Discussion

2:25 pm Dianne Rausch, NIMH, Bethesda MD
Closing comments

Session I: COVID and the Brain
Session Chair: Ken Tyler

2:30 pm **Plenary**
E. Wesley Ely, M.D., MPH (Vanderbilt University)
Rebuilding After COVID: Saving the Injured Brain

3:05 pm **Plenary**
Gwenaëlle Douaud, Ph.D. (University of Oxford)
SARS-CoV-2 is associated with changes in brain structure in UK Biobank

3:40 pm **Plenary**
Bruce James Brew AM, MBBS, DMedSci, DSc, FRACP, FAAN (University of New South Wales and University of Notre Dame Sydney)
Long covid cognitive impairment: natural history and potential pathogenesis - brake failure?

Special Event: Mentorship/Diversity Event – Career exploration
Moderator: Maria Nagel

4:15 pm **Roundtable discussion of career experts**
Archana Gupta, PhD – Staff Scientist, Product Applications, ThermoFisher
Barbara Liepe, PhD – Account Manager, Meso Scale Discovery
Laura Jaeger, PhD – Associate Director, Office of New Drug Research, FDA
Diane Rausch, PhD – Director, NIMH Division of AIDS Research
Nirzari Parikh, PhD – Editorial Business Director, Fishawack Health

4:45 pm **Open discussion**

Wednesday, October 12th

Session II: HIV Neuropathogenesis and Co-morbidities
Session Chair: Chris Power

12:00 pm
(EDT)

Plenary

Navneet Dhillon, Ph.D. (Kansas University Medical Center)

Extracellular Vesicles as Biomarkers and Purveyors of Virus associated Cardio-pulmonary complications

12:35 pm

Natarajaseenivasan Kalimuthusamy, Ph.D. (Lewis Katz School of Medicine at Temple University)

Cocaine upregulates mitochondria-derived vesicular pathway for selective removal of oxidized cargo

Session III: HERVS
Session Chair: Steve Jacobson

1:00 pm

Plenary

Hervé Perron, Ph.D. (GeNeuro SA, Geneva)

Human Endogenous retroviruses (HERVs) express neuropathogenic proteins, which can be activated by environmental pathogens: a post-infectious HERV-driven disease concept

1:35 pm

Plenary

Renee Douville, Ph.D. (University of Winnipeg)

Antivirals for ALS

Session IV: Global Neurovirology/Emerging Pathogens
Session Chair: Avindra Nath

2:15 pm

Plenary

Thiravat Hemachudha, M.D. (Chulalongkorn University, Thailand)

A Plausible Leap Towards Rabies Palliation and Treatment

2:50 pm

Plenary

CT Tan, M.D. (University Malaya)

An update on the emerging neuro-viral infection in Asia: Henipavirus, EV71 and dengue virus encephalitis

Thursday, October 13th

Session V: HIV/Cure Eradication

Session Chairs: Tricia Burdo and Kamel Khalili

12:00 pm
(EDT)

Plenary

David Margolis, M.D. (University of North Carolina at Chapel Hill)

Addressing challenges to HIV eradication

12:35 pm

Yasmeen Albalawi, Ph.D. (Jouf University, Saudi Arabia)

CD4DIM CD8BRIGHT T cells home to the brain and mediate HIV neuroinvasion

12:55 pm

João Mamede, Ph.D. (Rush University Medical Center)

HIV Innate Sensing in Microglia Activates the cGAS/STING Pathway of Inflammation

1:15 pm

Suzanne Queen (Johns Hopkins University School of Medicine)

CSF Escape in the SIV/Macaque Model of HIV CNS Disease

Special event: Investigator-in-Training talks

Session Chairs: Jay Rappaport, Ruth Brack-Werner, Walter Royal

1:35 pm

Shuhui Liu (Icahn School of Medicine at Mt. Sinai)

Functional cure of HIV brain disease in chronically ECOHIV-infected mice by therapeutic vaccination with gag-pol mosaic vaccine

1:50 pm

Michael Rudy (University of Colorado School of Medicine)

Monoclonal antibody improves paralysis outcome in a delayed-treatment mouse-model of Enterovirus D68-induced paralysis

2:05 pm

Rachel Berman (Drexel University College of Medicine)

A targeted sgRNA library-based approach for selection of CRISPR/Cas9-gRNA pairs used in an HIV-1 cure strategy

2:20 pm

Zhan Zhang (Atlanta VA Medical Center, Emory School of Medicine)

Honokiol reverses HIV-associated neurocognitive disorders in a SCID mouse model

2:35 pm

Natalie Castell (Johns Hopkins University School of Medicine)

Deficient B cell responses correspond with encephalitis in SIV-infected macaques

2:50 pm

Yisel Cantres-Rosario (University of Puerto Rico)

Disrupted Interferon type I signaling in peripheral monocytes from cognitive impaired patients and human brain organoids

Session VI: Vaccine and Therapeutic Initiatives

Session Chair: Walter Royal

3:15 pm

Plenary

Galit Alter, Ph.D. (Ragon Institute of MGH, MIT and Harvard)

Using Systems Serology to Define Correlates of Immunity to Respiratory Pathogens

3:50 pm Pragney Deme, Ph.D. (Johns Hopkins University School of Medicine)
Neutral sphingomyelinase-2 regulates late stage of HIV biogenesis

Friday, October 14th

Session VII: Extracellular vesicles/neuroinflammation
Session Chair: Ilker Sariyer

12:00 pm **Plenary**
(EDT) Ashok K. Shetty, Ph.D. (College of Medicine, Texas A&M University)
Promise of Human MSC-derived EVs for Preventing TBI-Induce Chronic Neuroinflammation

12:35 pm Maria Nagel, Ph.D. (University of Colorado School of Medicine)
Zoster-associated Prothrombotic Plasma Exosomes and Increased Stroke Risk

Session VIII: Special Topics in Neurovirology
Session Chair: Maria Nagel

1:00 pm **Plenary**
Daniel Pastula, M.D., MHS (University of Colorado School of Medicine)
An Overview of Monkeypox Virus and its Neuroinvasive Potential

1:35 pm Chanida Fongsaran, Ph.D. (University of Texas Medical Branch)
SARS-CoV2 infected mice display signs of neurological sequelae

1:55 pm Christy Niemeyer, Ph.D. (University of Colorado School of Medicine)
VZV infection of human olfactory epithelium causes amyloid deposition in the absence of increases in proinflammatory cytokines

Closing Remarks and Meeting Adjournment

2:15 pm Bruce Brew, President, International Society for NeuroVirology (ISNV)

Plenary Speaker:



Ronald Collman, M.D.
Department of Medicine and Microbiology
University of Pennsylvania's Perelman School of
Medicine

*Epigenetic Landscape of HIV-1 Infection in Primary
Human Macrophage: Plenary Talk*

NIH/NIMH session: Epigenetic Mechanisms Regulating
HIV/CNS Latency
12:20 pm, Tuesday, October 11th

Ronald Collman, M.D., is Professor of Medicine and Microbiology at the University of Pennsylvania's Perelman School of Medicine, and Director of the Penn Center for AIDS Research. Dr. Collman received his undergraduate and MD degrees at Boston University School of Medicine, clinical residency and Pulmonary fellowship at Temple University and the University of Pennsylvania School of Medicine, respectively, and postdoctoral training in Microbiology at Penn. Dr. Collman has a longstanding molecular virology research program focused on HIV infection and regulation in myeloid cells, role of cell tropism in viral pathogenesis including neuropathogenesis, as well as coreceptor use and cell targeting in natural and non-natural host SIV infection. He also has a major research interest in the human microbiome and virome.



Lena Al-Harhi, Ph.D.
Department of Microbial Pathogens and Immunity
Rush Initiative to Maximize Student Development
(Rush-IMSD)
Rush University Medical Center

*Epigenetic regulation of HIV in astrocytes: Interface
with b-catenin pathway informing cure strategies*

NIH/NIMH session: Epigenetic Mechanisms Regulating
HIV/CNS Latency
12:40 pm, Tuesday, October 11th

Dr. Lena Al-Harhi is a Professor and Chair of the Dept. of Microbial Pathogens and Immunity and the Program Director of Rush Initiative to Maximize Student Development (Rush-IMSD) at Rush University Medical Center in Chicago, IL. Her research is primarily focused on HIV/host interactions, with a special emphasis on bridging basic and clinical science. She studies mechanisms contributing to HIV-Associated Neurocognitive Disorders (HAND), including intersect with drugs of abuse, and the contribution of the CNS to the HIV reservoir. She specifically probes the role of astrocytes as a reservoir for HIV and the dynamic cross talk between Wnt/beta-catenin signaling, inflammatory mediators and HIV as they converge to impact HIV

neuropathogenesis and latency. The Wnt/beta-catenin pathway is vital for proper CNS development and homeostasis. Her group demonstrated that astrocytes have robust level of Wnt/beta-catenin signaling, which on one hand restricts HIV transcription in astrocytes and on the other supports key astrocytic functions. However, in response to HIV, inflammatory signals, or drugs of abuse, the expression of Wnt/beta-catenin signaling is greatly disrupted which enhances HIV replication and initiates a series of adverse effects on astrocytes that compromises their prototypical functions and leads to neuronal injury. Her lab uses a number of state-of-the art methodologies to probe HIV/host interactions and expanding the studies to ZIKA and SARS-CoV-2, such as chimeric human/mouse glial cells in humanized mice, cerebral brain organoids, and iPSC-derived glial cells



Jonathan Karn, Ph.D.
Department of Molecular Biology and Microbiology
Case Western Reserve School of Medicine

Control of HIV Latency in Microglia by Inflammation and Interactions with Astrocytes and Neurons

NIH/NIMH session: Epigenetic Mechanisms Regulating HIV/CNS Latency
12:55 pm, Tuesday, October 11th

Dr. Jonathan Karn, Ph.D. is Distinguished University Professor, Reinberger Professor and Chairman of Molecular Biology and Microbiology, Case Western Reserve School of Medicine, Cleveland, Ohio. He is an internationally recognized virologist who has made seminal contributions to the study of transcriptional control in HIV and the molecular basis of HIV latency. The laboratory was one of the first groups to demonstrate latency of HIV in microglial cells and HIV silencing by neurons, work that has been recognized by the Drexel Medicine Outstanding Scientific Achievement Award in Translational Medicine (2016) and the Paradigm Builder Lectureship Award, International Society for NeuroVirology (2016). Current work from the group uses models of latently infected iPSC-derived microglial cells (iMG), cerebral organoids and humanized mice to study how HIV can establish latent infections in microglial cells and respond to inflammatory signals. The work has shown that HIV latency is reinforced in the normal CNS environment by signals from astrocytes and healthy neurons. By contrast, damaged neurons cause HIV-reactivation in microglia. Dr. Karn has therefore proposed that emergence of HIV from latency in microglia underlies both neuroinflammation in the CNS and the initiation and progression of HAND.



Tariq Rana, Ph.D.
Department of Genetics, V/C for Innovation in Therapeutics
University of California San Diego School of Medicine

Epigenetic and Epitranscriptomic Regulation of HIV Infection

NIH/NIMH session: Epigenetic Mechanisms Regulating
HIV/CNS Latency
1:10 pm, Tuesday, October 11th

Dr. Tariq Rana is a multidisciplinary scientist who is developing new therapies to treat infectious diseases, cancer, and immune disorders. He is a Distinguished Professor and Head of Genetics, V/C for Innovation in Therapeutics, at the University of California San Diego School of Medicine, where his laboratory employs mechanisms and technologies of RNA, stem cells, and chemical biology to discover new pathways implicated in human disease. Dr. Rana's research focuses on elucidating the function of regulatory RNAs, and his team has helped to uncover RNAi, chemical rules to develop RNA medicines, fundamental structural and functional features of small RNAs, and RNP complexes required for gene silencing in human cells. Several technologies developed by his group have been used to develop small molecules and biological therapeutics. Dr. Rana has served as a member or chair of several scientific advisory boards and numerous institutional, national, and international committees, and has received multiple teaching and research awards. Some of his awards include the Presidential Talent Award, a Research Career Award from the National Institutes of Health, Outstanding Scientific Achievement Award from Nature and Johnson & Johnson, and NIH Director's Avant-Garde Award which is given to individual scientists of exceptional creativity with high-impact research that opens new areas of HIV/AIDS research and cure. Dr. Rana is an elected fellow of the National Academy of Inventors and the AAAS for "distinguished contributions to the field of chemical biology, particularly using chemistry to study RNA regulation and gene silencing to treat human disease.



Haitao Hu, Ph.D.
Department of Microbiology and Immunology
University of Texas Medical Branch (UTMB) John Sealy
School of Medicine

*Epigenetic Suppression of HIV in Myeloid Cells by the BRD4-
Selective Small Molecule Modulator ZL0580*

NIH/NIMH session: Epigenetic Mechanisms Regulating
HIV/CNS Latency
1:25 pm, Tuesday, October 11th

Haitao Hu is an Associate Professor of Microbiology and Immunology at the University of Texas Medical Branch (UTMB) John Sealy School of Medicine. Research in his lab focuses on mechanisms of host-virus interactions, antiviral immunity, and vaccine development for RNA viruses, including HIV. An ongoing research program is to understand host mechanisms regulating HIV infection in target cells, including myeloid cells and various CD4 T-cell subsets. His lab is particularly interested in host epigenetic regulation of HIV proviral transcription and latency in cell reservoirs, such as microglia, macrophages, and T cells. A long-term goal is to identify effective approaches targeting epigenetic mechanisms to disrupt or enforce HIV latency. Dr. Hu received his PhD in the Drew Weissman laboratory at the University of Pennsylvania where he employed mRNA for HIV envelope delivery and investigated its impact in HIV immunopathogenesis. He subsequently did his postdoc training at the US Military HIV Research Program where he studied mechanisms for differential susceptibility of human cells, including antigen-specific T cells and monocytic cell subsets, to HIV infection. He joined UTMB in 2015 as a tenure-track Assistant Professor and was promoted to tenured Associate Professor in 2021.



Susana Valente, Ph.D.
Department of Immunology and Microbiology
University of Florida Scripps Biomedical Research

*The Block-and-Lock Strategy for Human Immunodeficiency
Virus Cure: Lessons Learned from Didehydro-Cortistatin A*

NIH/NIMH session: Epigenetic Mechanisms Regulating
HIV/CNS Latency
1:40 pm, Tuesday, October 11th

Susana Valente, PhD is the Professor and Chair of the Department of Immunology and Microbiology at the University of Florida Scripps Biomedical Research. Her laboratory focuses on the characterization of molecular interactions occurring within a host cell that are critical for HIV replication. The ultimate goal is to develop therapeutics that inhibit HIV-1 replication, with special focus on those that help to reduce, eradicate, or suppress the reservoir of latently infected cells.

To that end, they also place major efforts into the understanding of the epigenetic mechanisms that regulate HIV-1 latency in CD4+T memory T cells.



Lishomwa (Lish) Ndhlovu, M.D., Ph.D.
Department of Immunology in Medicine Division of
Infectious Diseases and Neuroscience
Brain and Mind Research Institute
Weill Cornell School of Medicine

*Host epigenetic marks as predictors of HIV persistence:
Implications for HIV Cure Trials*

NIH/NIMH session: Epigenetic Mechanisms Regulating
HIV/CNS Latency
1:55 pm, Tuesday, October 11th

Lishomwa (Lish) Ndhlovu MD, PhD is a Professor of Immunology in Medicine in the Division of Infectious Diseases and Neuroscience at the Brain and Mind Research Institute at Weill Cornell Medicine. The thrust of his research program is confronting the challenges of HIV and aging and is developing specific strategies to prevent, slow or eliminate complications associated with HIV. His team combines immunology, virology and epigenetic methods exploring molecular mechanism of HIV pathogenesis and persistence through pre-clinical and clinical investigations and has expanded towards finding an HIV cure. He has also become increasingly involved in bringing the same urgency and focus to the COVID-19 pandemic and exploits immuno-epigenetic approaches to resolve molecular mechanisms regulating SARS-CoV-2 infection across tissues and cell types in people with and without HIV. His lab is largely supported by individual, and consortia grants from the NIH. He is a member of the International Neuro-HIV Cure Consortium and Co-leader of the NIH - funded Martin Delaney Collaboratory for HIV Cure “HOPE” and NIDA funded U01-SCORCH program documenting single cell opioid responses in the brain in the setting of HIV. He is an elected Fellow of the American Academy of Microbiology and serves as Co-Editor in Chief of the journal, AIDS Research and Human Retroviruses.



E. Wesley Ely, M.D., M.P.H.
Department of Medicine
Vanderbilt University Medical Center

Tennessee Valley Veteran's Affairs Geriatric Research
Education Clinical Center (GRECC)

Rebuilding After COVID: Saving the Injured Brain

Session I: COVID and the brain
2:30 pm, Tuesday, October 11th

E. Wesley Ely, MD, MPH, is an internist, pulmonologist, and critical care physician. Dr. Ely earned his MD and MPH at Tulane University School of Medicine and the Tulane School of Public Health and Tropical Medicine. He serves as the Grant W. Liddle endowed chair in medicine and is a physician-scientist and tenured Professor at Vanderbilt University Medical Center. He is also the Associate Director of aging research for the Tennessee Valley Veteran's Affairs Geriatric Research Education Clinical Center (GRECC) in Nashville, TN. Dr. Ely founded and is the codirector of the Critical Illness, Brain Dysfunction, and Survivorship (CIBS) Center. He has spent over 25 years designing and conducting NIH and VA funded clinical trials and cohort studies in the areas of delirium and acquired-dementia, including Alzheimer's Disease and Related Dementias (ADRD), sepsis, and most recently COVID-19. Dr. Ely is the author of a book of narrative non-fiction entitled *Every Deep-Drawn Breath*, from which he is donating 100% net proceeds to establish an endowment to help ICU and COVID survivors and their family members rebuild their lives.



Gwenaëlle Douaud, Ph.D.
University of Oxford

SARS-CoV-2 is associated with changes in brain structure in UK Biobank

Session I: COVID and the brain
3:05 pm, Tuesday, October 11th

Professor Douaud's body of work is at the interface between basic neuroscience, methodological imaging development and clinical application. It focuses on translational research from imaging methods to applied human neuroscience, such as brain maturation and ageing, and with a particular emphasis on neurodegenerative disorders (Alzheimer's disease, movement disorders and motor neuron disease). Her group pursues two main lines of research, first by investigating the basal ganglia in health and movement disorders using high resolution MRI at 7T, second by

working on (very) large imaging datasets to identify - and make sense of - relevant clinical information. As part of the team who have developed the brain imaging pipeline of UK Biobank, this has also led the group more recently to study the effects on the brain associated with COVID-19.



Bruce James Brew, AM, MBBS, DMedSci, DSc, FRACP, FAAN
University of New South Wales and
University of Notre Dame Sydney

Long covid cognitive impairment: natural history and potential pathogenesis - brake failure?

Session I: COVID and the brain
3:40 pm, Tuesday, October 11th

Bruce Brew is a neurologist-researcher with a longstanding interest in viral infections (especially HIV) and their effects on the brain. He is particularly interested in the intersection of viral neuropathogenesis, immunology and the kynurenine pathway. He became interested in whether covid could be associated with brain disease at the beginning of the pandemic when he noticed that non-hospitalized patients were complaining of cognitive difficulties. He is Professor of Medicine (Neurology) University of New South Wales and University of Notre Dame, Director of the Peter Duncan Neurosciences Unit St Vincent's Centre for Applied Medical Research and neurologist at St Vincent's Hospital Sydney Australia.



Navneet Kaur Dhillon, Ph.D.
Division of Pulmonary and Critical
University of Kansas Medical Center

Extracellular Vesicles as Biomarkers and Purveyors of Virus associated Cardio-pulmonary complications

Session II: HIV Neuropathogenesis and co-morbidities
12:00 pm, Wednesday, October 12th

Dr. Navneet Kaur Dhillon, Ph.D. is a Professor and Director of Pulmonary research in the Division of Pulmonary and Critical at the University of Kansas Medical Center. She is an international leader in studying disorders of the pulmonary circulation, including the cellular and molecular pathogenesis of pulmonary hypertension in the setting of HIV infection, and illicit drug use.

Primary research efforts are aimed at understanding mechanistically how HIV-1 and drugs of abuse contribute alone and in concert to the vascular dysfunction associated with pulmonary hypertension. The other focus of the lab is to unravel the interplay of macrophages, T cells, cytokines and chemokines in lung pathology associated with viral infections. Current research is aimed at elucidating the role of non-coding RNAs in the regulation of proliferative and anti-proliferative cascades in pulmonary smooth muscle cells and investigating the role of inflammatory cell-derived extracellular vesicles in pulmonary vascular remodeling. Dr Dhillon recently also began to question the relationship of alterations in the circulating extracellular vesicles with the severity of illness in patients infected with SARS-CoV-2; and how these changes damage the endothelial cells resulting in exacerbated pulmonary vascular injury in COVID19 disease.



Herve Perron, Ph.D.
GeNeuro SA, Geneva

Human Endogenous retroviruses (HERVs) express neuropathogenic proteins, which can be activated by environmental pathogens: a post-infectious HERV-driven disease concept

Session III: HERVs
1:00 pm, Wednesday, October 12th

During his PhD, Professor Perron isolated and characterized a novel retroviral element from Multiple Sclerosis (MSRV), itself defining a novel family of human endogenous elements (HERV-W) that now appears to be implicated in other autoimmune diseases such as chronic inflammatory demyelinating polyradiculoneuropathy or type 1 diabetes. Presently, as Chief Scientific Officer of Geneuro, a Swiss-French Biotech, Professor Perron is actively involved in the research and therapeutic development for diseases involving HERVs such as Multiple Sclerosis, Amyotrophic lateral Sclerosis in collaboration with the NIH/NINDS (USA) and psychoses displaying both systemic and brain inflammation in collaboration with FondaMental Foundation (France and Switzerland). More recently, he launched a new collaborative program on COVID-19 and HERV activation in severe or post-COVID forms, for which he is now PI in an EU-granted program (HERVCOV).



Dr. Renée N Douville, Ph.D.
Department of Biology
University of Winnipeg

Division of Neurodegenerative Disorders
St. Boniface Hospital Research Centre

Antivirals for ALS

Session III: HERVs
1:35 pm, Wednesday, October 12th

Dr. Renée N Douville is a Professor in the Department of Biology at the University of Winnipeg (since 2011) and a Principal Investigator in the Division of Neurodegenerative Disorders at the St. Boniface Hospital Research Centre (since 2021). She is best known for her expertise on human endogenous retroviruses and their potential roles in neurological disease. She obtained her Ph.D. in Immunology from the University of Manitoba in 2007. Her first postdoctoral fellowship was at Johns Hopkins University in Neurology with Dr. Avindra Nath's team, where she published a seminal report on endogenous retrovirus-K (ERV-K) in Amyotrophic Lateral Sclerosis (ALS). During that time, she also completed the Leadership and Management in the Life Sciences program at the Johns Hopkins University Carey Business School. She then went on to work as a postdoctoral fellow with Dr. John Hiscott and Dr. Rongtuan Lin at the Lady Davis Institute at McGill University. Over the last few years, her work has been largely focused on the discovery of a new viral protein in ERVK called conotoxin-like protein (CTXLP) found to be strongly expressed in ALS. Recently, the Douville lab has also shown the potential benefit of therapeutically targeting the ERVK integrase enzyme as a strategy to treat motor neuron disease. It is our continued mission to investigate whether antiviral drugs targeting ERVK could be used to treat neurodegenerative diseases like ALS, and other ERVK-associated conditions.



Thiravat Hemachudha, M.D., FACP
Department of Medicine and Neurology
Faculty of Medicine
Chulalongkorn University

A Plausible Leap Towards Rabies Palliation and Treatment

Session IV: Global Neurovirology/Emerging Pathogens
2:15 pm, Wednesday, October 12th

Thiravat Hemachudha, is a Professor of Medicine and Neurology specializing in clinical, virological, and immunological studies in encephalitis. He serves on the WHO Expert Advisory

Panel on Rabies. He established WHO-CC on Rabies Pathogenesis and Prevention at Queen Saovabha Memorial Institute, and WHO-CC on research and training on viral zoonosis and TRC EID-health science centre at Faculty of Medicine with the aim to increasing preparedness and improving diagnostics for zoonotic pathogens. He has been engaging in the management of rabies patients and in the rabies pathophysiologic studies in patients and animal model and development of novel therapeutics for more than 3 decades.



Chong-Tin TAN, M.D.
Department of Neurology
University of Malaya

*An update on the emerging neuro-viral infection in Asia:
Henipavirus, EV71 and dengue virus encephalitis*

Session IV: Global Neurovirology/Emerging Pathogens
2:50 pm, Wednesday, October 12th

CT Tan is the Emeritus Professor of Neurology, University of Malaya. He is the Leader of the Nipah virus encephalitis investigating team in the University of Malaya, that discovered the virus and characterised the clinical disease. He has also been involved in the investigations of other central nervous system and muscles infections, including TB meningitis, cryptococcal meningitis, neuro-melioidosis, and Sarcocystis nesbitti. He is the Editor-in-Chief of Neurology Asia, the official journal of the ASEAN Neurological Association and Asian and Oceanian Association of Neurology.



David Margolis, M.D.
Department of Medicine, Microbiology & Immunology, and
Epidemiology
University of North Carolina at Chapel Hill

Addressing challenges to HIV eradication

Session V: HIV/Cure Eradication
12:00 pm, Thursday, October 13th

David Margolis became interested in HIV as the pandemic emerged during his medical training. He has cared for people with HIV and studied the interactions between HIV and the host cell on the molecular level for his entire career. For more than 2 decades, he and many collaborators

have begun to understand the molecular basis of HIV latency, develop drug and immunotherapy approaches to target persistent HIV, to develop the tools needed to cure HIV infection. He is the director of the UNC HIV Cure Center, principal investigator for the NIH-sponsored Collaboratory of AIDS Researchers for Eradication (<http://www.delaneycare.org>), and a Sarah Graham Keenan Distinguished Professor of Medicine, Microbiology & Immunology, and Epidemiology at the University of North Carolina at Chapel Hill.



Galit Alter, Ph.D.
Ragon Institute of Massachusetts General Hospital
(MGH), Massachusetts Institute of Technology (MIT),
and Harvard

*Using Systems Serology to Define Correlates of
Immunity to Respiratory Pathogens*

Session VI: Vaccine and Therapeutic Initiatives
3:15 pm, Thursday, October 13th

Dr. Alter's work focuses on the development of systems biology tools to define the humoral correlates of immunity against infectious diseases. These efforts include the development of "Systems Serology" - a humoral profiling approach which enables her to comprehensively dissect the immune response. This novel antibody-OMIC platforms enables the dissection of pathogen- or vaccine-specific humoral immune responses at an unprecedented depth. Coupled to machine learning and artificial intelligence, her work unveils the mechanistic basis of protective immunity across pathogens, often pointing to unexpected correlates of humoral immunity against infection.



Ashok K. Shetty, Ph.D.
Department of Molecular and Cellular Medicine
Texas A&M University College of Medicine

*Promise of Human MSC-derived EVs for Preventing
TBI-Induce Chronic Neuroinflammation*

Session VII: Extracellular vesicles/neuroinflammation
12:00 pm, Friday, October 14th

Dr. Ashok K. Shetty is a tenured Professor in the Department of Molecular and Cellular Medicine at the Texas A&M University College of Medicine. He is also the Associate Director at the TAMU Institute for Regenerative Medicine. Dr. Shetty has received worldwide recognition for his pioneering work in stem cell- and stem cell-derived extracellular vesicle therapy for brain

disorders. His current research studies are focused on testing the efficacy of human MSC- and NSC-derived extracellular vesicles for improving brain function in conditions such as TBI, aging, and Alzheimer's disease. He has also made seminal contributions to Gulf War Illness research. Two of his preclinical study results have served as the basis for ongoing clinical trials in Gulf War veterans. His work has appeared in many high-impact journals in the fields of stem cells, extracellular vesicles, and neuroscience. Dr. Shetty has received >16,900 citations with an h-index of 64. He is among the top 1% of researchers across all fields for the total number of citations received. Dr. Shetty has served on two NIH study sections and one VA study section as a Chartered Member. Besides, he has served as a member of >70 other study section panels. Dr. Shetty is the founding editor and *Co-Editor-in-Chief* of the journal, *Aging & Disease* and Associate Editor of six Neuroscience journals. He is also a member of the Editorial Board of *The Journal of Extracellular Vesicles*, *Aging Cell*, and *Stem Cells*. Dr. Shetty is a Fellow of the American Society for Neural Transplantation and Repair.



Daniel Pastula, M.D., MHS
Department of Neurology, Medicine (Infectious Diseases),
and Epidemiology
University of Colorado School of Medicine & Colorado
School of Public Health

*An Overview of Monkeypox Virus and its Neuroinvasive
Potential*

Session VIII: Special Topics in Neurovirology
1:00 pm, Friday, October 14th

Dr. Daniel Pastula is an Associate Professor of Neurology, Medicine (Infectious Diseases), and Epidemiology at the University of Colorado School of Medicine and Colorado School of Public Health. He is a board-certified neurologist, CDC-trained medical epidemiologist, and veteran of the U.S. Public Health Service with interests in neuro-infectious diseases, public health, and outbreak investigation and control.

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Philadelphia, Pennsylvania**

Journal of NeuroVirology

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