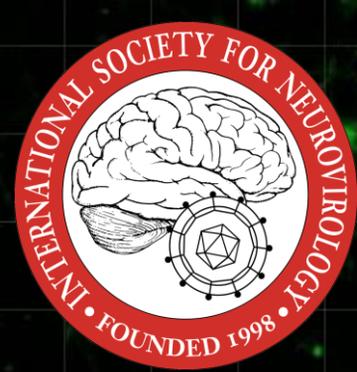


# NEWS IN NEUROVIROLOGY

Official newsletter of the  
*International Society for NeuroVirology*

Editor: Tory Johnson, PhD | Associate Editor: Fred Krebs, PhD



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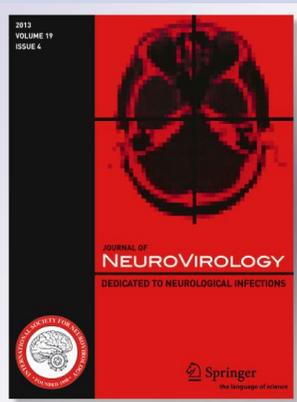
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**Journal of  
NeuroVirology**  
**Impact Factor 2.3**



## A Message from the President

By Bruce Brew

The 16<sup>th</sup> International Symposium on NeuroVirology and the 2019 Conference on HIV in the Nervous System was held this past November at the Westin Buckhead Atlanta, Atlanta, GA, USA. The meeting was a tremendous success. Taking advantage of this venue, the symposia had a strong presence of attendees and speakers from the Centers for Disease Control and Prevention (CDC), Emory, and Georgia State University.

Over 200 scientists and students attended the meeting. The symposium consisted of 160 poster presentations, 16 scientific sessions, 20 plenary speakers, 2 lectureships, and 2 special events; all over a span of 4 ½ days. A total of 54 speakers took to the platform to present their work.

To cap off the opening reception, Dr. Sandra Harris-Hooker, Ph.D., Professor and Executive Vice-Dean, Morehouse School of Medicine, led a discussion addressing diversity, inclusion, and equity in research and healthcare. This was a relevant topic among our attendees and a lively conversation ensued.

Additional highlights included updates from the CDC in a session led by James Sejvar and colleagues, Drs. Maddox and Lopez. Emerging CNS viral threats, chronic wasting disease, and acute flaccid myelitis were some of the timely topics covered in detail that captured the attention of all audience members.

Faculty members of the Emory Center for AIDS Research (CFAR) hosted an important session and shared some of their research data in the areas of the impact of inflammation on dopamine, motivation, and motor function, and autonomic neuropathy and gastrointestinal function of people living with HIV.

An important aspect of the meeting was the emphasis on trainees. The meeting included two platform sessions by Investigators-in-Training and a mentorship event, titled, "Work/Life Balance." The panel consisted of two women and two men, all at different stages of their careers, who gave the audience great insights into their work versus life at home.



Junior investigators describe their research in the first of two Investigators-in-Training sessions.

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# A Message from the President

Continued from page 1

This critical topic resonated with the attendees as audience members also shared their experiences. From the feedback received, this was an impactful discussion, a subject matter we will certainly see again at a future ISNV gathering.

This year's meeting included both the Audrey Gilden lectureship and the Paradigm Builder lectureship. Dr. Nagel delivered the Gilden lectureship where she discussed her exciting research on Varicella zoster virus and amyloid-associated diseases. Dr. Khalili presented cutting-edge data on his work in HIV eradication using CRISPR in the Paradigm Builder Lectureship.

The Pioneer Award was presented to Dr. Lynn Pulliam and the Society hosted a gala dinner in her honor. Several of the past Pioneer awardees attended the dinner and named certificates were given to students honoring the Pioneers (see page 4).

I would like to thank Drs. Walter Royal and Bill Tyor for their support as co-chairs of the local organizing committee. Their tireless efforts helped contribute to the success of the meeting. I must also acknowledge key support and financial sponsorships from Gilead, Celgene, Excision BioTherapeutics, Mercodia, Drexel University Institute for Molecular Medicine & Infectious Disease, Drexel University College of Medicine, UCSF, Morehouse School of Medicine, Emory University Center for AIDS Research, St. Vincent's Hospital Sydney, Lewis Katz School of Medicine at Temple University - Center for Neurovirology and Comprehensive NeuroAIDS Center, Journal of NeuroVirology and Foundation for NeuroVirology. Their support was critical to the success of the symposium.

Lastly, I am most grateful to all those who attended the symposium, presented their novel research, and engaged in discussions making the ISNV the major venue for advancing the field of neurovirology.

I look forward to seeing everyone at our next gathering in the spring of 2021.



Symposium attendees dining with colleagues at the Pioneer Award Dinner held on Friday evening in the Westin Buckhead Atlanta in Atlanta, GA.



Dr. Avindra Nath (left) thanks Dr. Kamel Khalili (right) for his leadership of the Journal of NeuroVirology. The journal is currently in its twenty-fifth year of publication.

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# Lynn Pulliam Recognized as the 2019 Pioneer in NeuroVirology

By Fred Krebs

Dr. Lynn Pulliam was recently recognized as the recipient of the 2019 Pioneer in NeuroVirology Award. The award was announced and presented on November 15<sup>th</sup>, 2019, during the 16<sup>th</sup> International Symposium on NeuroVirology and 2019 Conference on HIV in the Nervous System.

Dr. Pulliam received her B.A. in Biology in 1969 from Northwestern University, followed by her M.S. degree in Microbiology from the California State University in 1975. She continued at the University of California in San Francisco and received her Ph.D. degree in 1983 in Experimental Pathology – Neuropathology. Dr. Pulliam trained with neurologist Dick Baringer at UCSF in a large neurovirology and neuroimmunology group and originally studied HSV in chimeric mouse brain aggregates. She was later offered the position of Director of Microbiology at the San Francisco Veterans Affairs Medical Center and Assistant Professor at UCSF. She has appointments in Laboratory Medicine and Medicine at UCSF and has served on the most prestigious committees at UCSF, including the promotion and tenure committee for years. She held the position of Director of Research at the San Francisco VA Medical Center for 7 years, which is the largest VA research center in the U.S. She is the first woman to hold this position nationally with oversight of 200 PIs and \$80M/year in research funds.



Dr. Lynn Pulliam is the recipient of the 2019 Pioneer in NeuroVirology Award.

Dr. Pulliam's research has focused on HIV neuroimmunology, biomarkers for HIV neurocognitive impairment, and the effects of HIV and aging. She was the first to develop a human brain aggregate model used to study species-specific viruses. She used these brain aggregates to show human CMV infection of monocyte/microglia in the brain and later to show that HIV neuropathogenesis was caused by soluble factors from HIV-infected monocyte/macrophages - now known as a cytokine storm – rather than the virus. She went on to show that gp120 is toxic to brain cells and that HIV Tat inhibits neprilysin and elevates soluble amyloid beta. Her work on monocyte gene expression in PTSD resulted in separate clinical trials for women with PTSD. She began studying monocyte exosomes and their immune consequences early in exosome discovery. She recently reported that neuron-derived exosomes in the plasma have protein targets that correlate with cognitive impairment and differ in men and women. Her research has also included HIV coinfection with hepatitis C and the association between a monocyte interferon gene expression profile and neurocognitive impairment in this cohort, as well as the effects of

chronic inflammation on modified lipid uptake in HIV-infected subjects. These projects highlight basic and translational research associated with inflammation.

Dr. Pulliam was one of the original members of the ISNV and has served as President and Meetings Co-Chair for many years. She was also the recipient of the 2009 Women in Neuroscience Lectureship. Dr. Pulliam has won several scientific awards on the effects of HIV in the brain, including the Prize in Neurovirology from Drexel and the Northern California Research Institute award for research and leadership. She teaches medical residents and infectious disease fellows year-round at UCSF and has received the UCSF Departmental Teaching award. She is committed to mentoring nationally through the International Society for NeuroVirology. Her research has been funded by the NIH for over thirty years and she continues to serve as a reviewer for the NIH on multiple study sections and for numerous scientific journals.

The Pioneer in NeuroVirology Award is presented in recognition of outstanding individual achievement in the field of neurovirology. Each International Symposium on NeuroVirology honors a worthy recipient of this award. Pioneers in NeuroVirology have been recognized by the International Society for NeuroVirology since 1999. Dr. Pulliam is the 15th Pioneer in NeuroVirology to be recognized by the Society. By conferring this award, the ISNV recognizes Dr. Pulliam as a true pioneer for her extensive contributions to neurovirology and beyond.

# 2019 Investigators-In-Training Award Winners

ISNV Investigators-in-Training Committee  
Jay Rappaport (co-chair), Ruth Brack-Werner (co-chair),  
Walter Royal III, Susan Weiss, Lena Al-Harhi, Antonina Dolei

The ISNV and the Investigator-In-Training (IIT) Committee would like to offer their congratulations to the 2019 IIT award winners and their mentors. The presentations were all outstanding. This year's award winners, recognized at the Pioneer Award Dinner during the 16<sup>th</sup> Symposium, were:

**Asit Kumar**, M.Sc., Ph.D., Postdoctoral Fellow

Johns Hopkins University School of Medicine, Baltimore, Maryland, USA.

Mentor: Dr. Norman Haughey

**Bahareh Torkzaban**, Ph.D. Candidate

Lewis Katz School of Medicine at Temple University, Philadelphia, Pennsylvania, USA

Mentor: Dr. Kamel Khalili

**Yuqing Gong**, Ph.D. Candidate

The University of Tennessee Health Science Center, Memphis, Tennessee, USA

Mentor: Dr. Santosh Kumar

**Ke Liao**, M.S., Ph.D. Candidate

University of Nebraska Medical Center, Omaha, Nebraska, USA

Mentor: Dr. Shilpa Buch

**Ana Beatriz DePaula-Silva**, Ph.D., Postdoctoral Fellow

University of Utah School of Medicine, Salt Lake City, Utah, USA

Mentor: Dr. Robert Fujinami

**Matthew Lauver**, Ph.D. Candidate

Penn State College of Medicine, Hershey, Pennsylvania, USA

Mentor: Dr. Aron Lukacher

**Sara Nass**, Ph.D., Postdoctoral fellow

Virginia Commonwealth University, Richmond, Virginia, USA

Mentor: Dr. Kurt Hauser

**Andrew Atkins**, Ph.D., Postdoctoral Fellow

Drexel University College of Medicine, Philadelphia, Pennsylvania, USA

Mentor: Dr. Brian Wigdahl

Investigator-In-Training award winners received their certificates at the 2019 Pioneer Award dinner on Friday evening. Award winners are pictured with Pioneers in NeuroVirology in attendance at the meeting [Drs. Khalili (2010), Gendelman (2016), Kennedy (2018), Nath (2012), and Wigdahl (2013), left-to-right]



# Dr. Maria Nagel Delivers the Audrey Steinman Gilden Lectureship

By Fred Krebs

Dr. Maria Nagel was selected this year to deliver an address in the Audrey Steinman Gilden Lectureship series. Dr. Nagel delivered her address during the 16<sup>th</sup> International Symposium on NeuroVirology and 2019 Conference on HIV in the Nervous System on November 13<sup>th</sup>, 2019.

Dr. Maria Acena Nagel is a clinician-scientist who received her B.A. at the University of Chicago and her M.D. at the University of Illinois. She completed Neurology residency and a 3-year NIH-funded neurovirology fellowship in 2009 with renowned neurovirologist and Chair of Neurology, the late Dr. Don Gilden, focusing on the biology of varicella zoster virus (VZV). She was appointed Instructor in 2006, Assistant Professor in 2009, and Associate Professor in 2015 in the Department of Neurology with a secondary appointment in Ophthalmology. Dr. Nagel has made significant contributions to the clinical manifestations and pathogenesis of diseases caused by VZV, particularly VZV vasculopathy, and has published over 112 papers and book chapters. Her research is primarily funded through P01 and R01 grants from the National Institutes of Health. Her lab focuses on the mechanisms by which VZV produces persistent inflammation and clinical disease, as well as how virus contributes to amyloid-associated diseases – with an eye towards identifying potential therapeutic targets. Dr. Nagel holds a patent on a new class of antiviral drugs to treat CNS disease. She also serves as mentor to numerous postdoctoral fellows and students, and is dedicated to supporting diversity in the health-related sciences.



Dr. Peter Kennedy (left) presents the Audrey Gilden Lectureship series plaque to Dr. Maria Nagel (right).

The Audrey Steinman Gilden Lectureship recognizes investigators whose cutting-edge research achievements have made important contributions to understanding the molecular pathogenesis of neurotropic virus infection. The lectureship was established by Dr. Don Gilden, who contributed significantly to the disciplines of neuroscience and neurovirology through his groundbreaking work on lymphocytic choriomeningitis virus, varicella zoster virus, and multiple sclerosis. A 2007 recipient of the ISNV Pioneer in NeuroVirology award, Dr. Gilden established this lectureship in honor of his wife, Audrey. Dr. Nagel is the 6<sup>th</sup> person in the Audrey Gilden Lectureship series to be featured as a leading investigator in the field of neurovirology.

## New ISNV Committee on Mentorship, Inclusion, and Diversity

By Lynn Pullinam

Committee Members: Jennifer Gordon, Walter Royal, Fatah Kashanchi, James Lockensgard, Valerie Wojna

As with all things, the ISNV is evolving when it comes to ways we can support the next generation of individuals going into science. We began with a Women in Neuroscience subcommittee in 2006 that supported and recognized women. We heard back from our junior male scientists that they needed mentoring also, so we transitioned the committee into the Junior Scientist Committee. That brings us to now where we feel diversity and inclusion also need to be addressed and celebrated. This new committee will focus on how we as scientists can provide ideas of diversity and inclusiveness through mentoring all junior investigators. We hope to motivate and connect through our experiences the many different pathways to success. The more we interact with young scientists, the more we can identify with their struggles and even relate to them with our own personal stories. Mentoring isn't just about how to write a grant (although that doesn't hurt), it is also how to navigate the scientific community, funding, review boards, collaborations, and career opportunities. We are certainly not unlike other businesses but maybe a lot more competitive! This year, the new Mentorship, Inclusion, and Diversity Committee hosted a panel discussion on "Time Management and Work-Life Balance." Many of our junior investigators were there and participated in discussions about peer mentorship, family balance, stress reduction techniques, and time management.

# Dr. Kamel Khalili delivers the Paradigm Builder Lectureship

By Dianne Langford

The International Society for NeuroVirology has honored Dr. Kamel Khalili with the 2019 Paradigm Builder Award for his numerous and outstanding contributions to the field. Dr. Khalili is Chair of the Department of Neuroscience and Director of the Center for Neurovirology at Temple University School of Medicine in Philadelphia. Khalili employed molecular strategies to understand pathways by which human neurotropic viruses inflict injuries to brain, especially to glial cells, and ensure their persistent and productive infection. He has extensively studied the glial tropic JC virus, the etiologic agent of the fatal demyelinating disease, progressive multifocal leukoencephalopathy (PML), a long-standing project that has led him to identify several novel proteins and pathways, including Pur alpha, a single stranded nucleic acid binding protein. He showed that the Tat protein of HIV augments JCV replication, offering a mechanistic model for the higher incidence of PML observed in individuals with AIDS. Further, he and his team uncovered a novel mechanism by which Tat activates the HIV promoter via recruitment of NF $\kappa$ B. Khalili's extensive investigation of the oncogenic potential of JC virus in cell and animal models gave him the opportunity to discover several pathways that are perturbed by the JCV regulatory proteins, T-antigen and Agnoprotein. Interestingly, both of these proteins were detected in the several types of human brain tumors. In the last few years, Khalili and his colleagues have pioneered the employment of a CRISPR-based gene editing strategy for complete eradication of HIV in infected cells by excising the entire integrated viral DNA from the host chromosome, with no off-target effects. This technique has been effective for inactivating HIV *ex vivo*, in HIV patient samples, and *in vitro*, in several animal models.

These results include evidence, for the first time, that HIV can be eliminated from HIV infected mice. These efforts offer new alternative avenues for permanent inactivation of HIV in the clinic. His team has developed gene editing technology for inactivation of neurotropic viruses including JCV and HIV. Khalili's persistent and impactful contributions to science for over 30 years have earned him the Pioneer in NeuroVirology Award by his peers.

He has trained over twenty-three graduate students, seventeen M.D./Ph.D. students, fifty-four postdoctoral fellows and eighteen visiting scholars.

Dr. Khalili has authored over 450 scholarly publications in highly regarded journals.



Dr. Lynn Pulliam (right) presents the Paradigm Builder Lectureship plaque to Dr. Kamel Khalili (left) .

## Share your news with us!

By Fred Krebs

One goal of the ISNV newsletter is to connect our members as part of a community with a common interest in neurovirology. To meet that goal, the ISNV communications committee will utilize this newsletter and our social media presence (Twitter) to share news about our members important events, research and careers. Follow ISNV on Twitter at @joinISNV.

If you just published a paper, received a new grant or prestigious award, or were recently promoted, we want to hear from you! If you would like ISNV to Tweet or retweet your paper or highlight your event, send a short summary of your news to Tory Johnson ([tjohn109@jhmi.edu](mailto:tjohn109@jhmi.edu)). We're looking forward to hearing from you!