# ISNV

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## Lynn Pulliam Gives the 2009 Women in Neuroscience Lectureship

Brian Wigdahl, Ph.D. • Philadelphia, PA

Dr. Lynn Pulliam received her undergraduate training from Northwestern University. After receiving her B.A. degree in Biology in 1969 she moved to the west coast to begin her graduate studies at the California State University and received a M.S. degree in Microbiology in 1975. She continued her graduate training at the University of California at San Francisco (UCSF) and received her Ph.D. degree in 1983 in Experimental Pathology – Neuropathology. After obtaining her doctorate, she was appointed as assistant professor of Laboratory Medicine at UCSF and Chief of Microbiology at the Department of Veteran's Affairs in San Francisco. In 1992, she was promoted to associate professor and appointed adjunct associate professor of medicine. In 1998, Dr. Pulliam was promoted to professor in both departments. In 1992, Dr. Pulliam was appointed Associate Chief of Staff of Research at the VA Medical Center in San Francisco. After early research efforts in clinical microbiology with an emphasis on Streptococcus, Dr. Pulliam turned her attention to virology and the herpesvirus family, in particular herpes simplex virus (HSV). Her early studies with this virus focused on utilizing three-dimensional cell cultures to study the interaction of HSV with cellular elements present in aggregated brain elements. These studies were published in collaboration with Jim Baringer. A number of years later, this system would be again utilized by Dr. Pulliam and collaborators to study the interaction of factors secreted from HIV-infected macrophages on the cellular physiology of these aggregated human brain cultures. Over the next two decades, Dr. Pulliam and colleagues were the first to show that blood monocytes from individuals infected with HIV release "toxins" that kill or damage neurons in the brain. This observation demonstrated that the dementia associated with HIV infection may not be caused by direct HIV infection of brain cells but rather by infiltrating immune cells themselves. These and other observations have changed the way scientists look at HIV infection of the brain.

Dr. Pulliam further reported that a subset of blood monocytes, called $CD69^+$, released this "toxin," which in turn caused brain cells to turn on genes in the brain to program themselves for death. There was a substantial increase in $CD69^+$ monocytes from individuals with HIV dementia that was not seen in patients with AIDS alone or control HIV negative individuals. In a follow-up study, $CD69^+$ was elevated in individuals with Alzheimer's disease, indicat-

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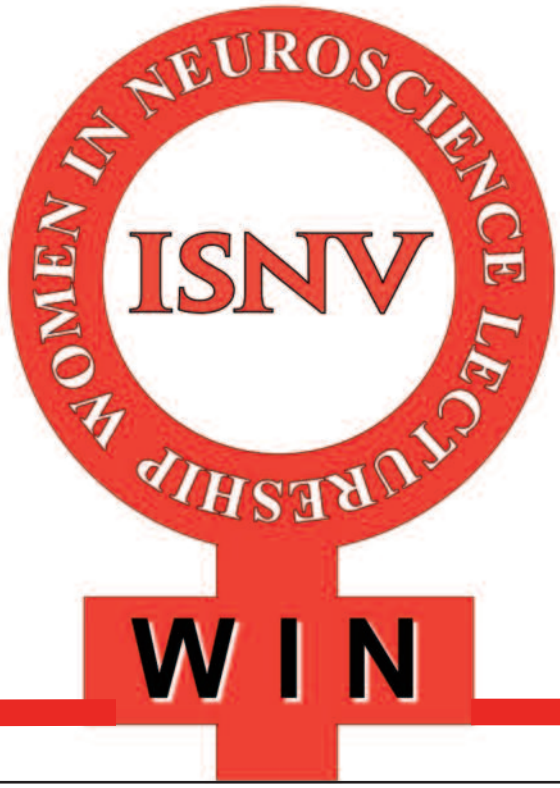
ing that this monocyte subset could be predictive of dementia as well as a target for therapeutics for dementia.

Dr. Pulliam and her fellow researchers recently reported that Tat, a protein secreted by HIV, inhibits neprilysin, the major protein that degrades amyloid beta (Aβ). Aβ accumulation is thought to be an early event in Alzheimer's disease. Dr. Pulliam looked at brains from autopsies of individuals with HIV dementia and saw an increase in Aβ associated with those individuals who had been HIV infected the longest. All individuals were on antiretroviral therapy. This suggests that while individuals with HIV now live longer, they run an increased risk of developing an Alzheimer's-like dementia.

Dr. Pulliam has clearly made major observations centered on the mechanisms of neuroinflammation and HIV dementia. She has used HIV-seropositive patient monocyte/macrophages and gene expression microarrays to develop a phenotype predictive of HIV dementia. Several new proteins discovered from these microarrays have been identified and are being shown to facilitate HIV infection. In addition, she is interested in HIV infection and aging by studying HIV and its proteins and how they can modulate Aβ production in the brain.

Dr. Pulliam has been a major supporter of women in science and was a founding member of the Committee on Women in NeuroVirology, we are pleased to recognize her scientific achievements through the Women in Neuroscience Lectureship. Congratulations, Lynn.

**The Women in Neurovirology (WIN) Committee of the International Society for NeuroVirology has elected to sponsor a lectureship to emphasize and celebrate the major contributions of outstanding women in the advancement of biomedical science and in particular neurovirology and related disciplines. This lectureship was initiated at the 7th International Symposium on NeuroVirology. Previous Awardees include Dr. Diane Griffin, Johns Hopkins University and Dr. Gabriele Zu Rhein, University of Madison, Wisconsin.**




## The Women in Neuroscience Lectureship

The International Society for NeuroVirology will accept nominations for the 10th International Symposium on NeuroVirology for the Fall of 2010.
Please send all inquiries and nominations to mail@isnv.org

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