ISNV

International Society for NeuroVirology

Vol. 7(1)
February 2007

ISNV Publications Subcommittee: K. Khalili (Chair), B. Brew
J. Clements, P. Ferrante, E. Major

10th Anniversary of the First International Symposium on NeuroVirology

Brian Wigdahl, Ph.D. • Philadelphia, PA

The field of Neurovirology is an interdisciplinary area of investigation that encompasses a number of seamless interactions with such disciplines as basic and clinical virology, molecular and cellular neurobiology, neuropathology, and neuroimmunology. As a distinct field that has been established only within the last 30 years, Neurovirology has developed rapidly and will continue to grow due to its basic and clinical importance. During the past 10 years, the International Society for NeuroVirology (ISNV) has played a major role in helping to nurture this important and ever expanding area of biomedical science.

ISNV was founded in 1998 to foster the growth of neurovirologic investigation and to complement the efforts of the Journal of NeuroVirology (JNV) in disseminating important experimental observations to the scientific community. The centerpiece of the Society's activities has been the annual International Symposium on NeuroVirology. The first International Symposium on NeuroVirology was held in Philadelphia in the Spring of 1997 to bridge the gap between the basic and clinical scientists working in the area of neurovirology and related disciplines. The symposium series continues to provide a platform for communicating, discussing, and utilizing the latest information derived from new approaches, including the current use of genomics and proteomics to unravel the impact of viral infection on neurologic function at the molecular level. The salient feature of this Symposium series rests in its breadth, which encompasses three different avenues pertaining to viral-induced neurological disorders: basic science, animal models, and clinical manifestations. Since the first Symposium in Philadelphia in 1997 (Kamel Khalili, Chair), meetings have been held in New London, New Hampshire (1999, Kamel Khalili and Gene Major, Co-Chairs), San

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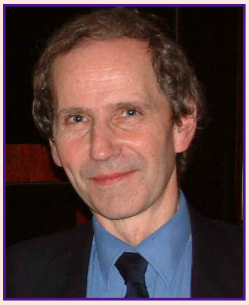
Message from the President

Peter G. E. Kennedy, M.D., Ph.D. • Glasgow, UK



The last year has seen some exciting developments for the Society. We just had a highly successful 7th ISNV Symposium that took place last June in Philadelphia. This was attended by 350 people and provided an exciting scientific forum for scientists and clinicians right across the career spectrum, from young investigators to established leaders in the field. I extend my warm thanks and congratulations to the International Organising Committee Co-Chairs, Drs Brian Wigdahl, Jennifer Gordon, Janice Clements and Lynn Pulliam. Novel features of the meeting were the Paradigm Builder Lecture given by Charles Weissman, the Outstanding Women in NeuroVirology lectureship delivered by Dr Diane Griffin, and a special ISNV Workshop on Multiple Sclerosis chaired by Dr Antonina Dolei. In addition, six gifted young "Investigators-In-Training" received plaques named individually after each of the Society's previous winners of the Pioneer in NeuroVirology award. This year's Pioneer awardee was Dr Bill Narayan who was honoured for his seminal contributions over forty years to our knowledge of the neuropathogeneis of a range of virologic infections, including avian influenza, visna, HIV, Borna and SIV. Having trained in NeuroVirology with Bill at Johns Hopkins University, it was a particular pleasure for me to present the award to him.

Dr. Opendra "Bill" Narayan 2006 Pioneer Award Winner

There have also been a number of changes to the

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Kamel Khalili, Ph.D. • Philadelphia, PA

Research in Dr. Langford's lab has a broad focus on NeuroAIDS and HIV-associated CNS complications. Her main area of interest involves cells of the neurovascular unit and signaling at the blood-brain interface. In close collaboration with the HIV Neurobehavioral Research Center at UCSD, Dr. Langford's work includes in vivo studies of neuropathological changes observed in specific HIV patient cohorts. For example, a recent publication (Journal of NeuroVirolology., 12: 100-107, 2006, Langford et al.), provide evidence that despite the limited CNS penetration of many antiretroviral medications, highly active anti-retroviral therapy (HAART) is at least partially effective in suppressing CNS viral replication.

On the international front, Dr. Langford is an honorary Assistant Professor in the Department of Neurology at Addis Ababa University, Ethiopia, where, in collaboration with pathologists at Addis Ababa University, she is conducting neuropathological analyses of Ethiopian individuals infected with HIV-1C. Complementing this research, Dr. Langford's lab at UCSD is investigating differences in the crosstalk between cerebral endothelial cells (CEC) and various HIV-1 "clades" dominant through out the world. In this regard, initial studies from her lab show that some clades of HIV-1 induce distinct gene expression profiles in CEC exposed to virus. These differences could explain, in part, the different neuro-virulence properties described in some HIV populations from specific regions of the world. Moreover, alternative-signaling interactions between HIV-1 clades and endothelial cells of the blood-brain barrier may contribute to barrier integrity and endothelial cell fitness.

Because the penetration of some components of HAART may be influenced by these changes, interactions in CEC exposed to various anti-retroviral drugs used to treat HIV infection becomes increasing important. Thus, a second major focus of Dr. Langford's is drug-induced signaling changes in CEC treated with physiologic concentrations of HIV protease inhibitors. It is believed that growth factors produced by the host in response to HIV infection provide protection, in some cases, from HIV-mediated host cell death. Studies from Langford et al., show that astrocyte-derived fibroblast growth factor 2 (FGF2) protects CEC from the toxic effects of the HIV protein gp120 (Langford et al., BMC Neuroscience, 6(1):8, 2005). However, when CEC are grown in media containing physiological concentrations of some HIV protease inhibitors, FGF2 is no longer able to protect CEC form gp120 toxicity (unpublished).

As a member of the San Diego Ethiopian-American Study Group, Dr. Langford also addresses healthcare disparities regarding HIV prevention, treatment and transmission among Ethiopian immigrants living in the San Diego Community. Moreover, as Chair of the Scientific Advisory Board for People to People, Inc., www.peoplepeople.org, she enjoys participating in projects that directly benefit Ethiopia in areas such as education, healthcare, housing, and capacity building.

Second HIV Infection and the Central Nervous System: Developed and Resource-Limited Settings

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Bethesda, USA

For registration and more information:
http://synapse.neurology.unc.edu/venice/

ISNV Highlight - Igor Grant, M.D.

Dianne Langford, Ph.D. • Philadelphia, PA

HIV-associated CNS disorders affect approximately 40% of those individuals infected with HIV. Founded in 1989 with support from the National Institutes of Health, the HIV Neurobehavioral Research Center (HNRC) was created to perform translational research elucidating the etiology, pathogenesis, neurobehavioral manifestations, treatment and prevention of HIV associated CNS disease. The HNRC has made significant contributions to the development and improvement of methods used to evaluate cognitive changes in HIV-associated CNS dysfunction. For detailed information regarding the HNRC's many research projects, resources, and development programs, please visit, www.hnrc.ucsd.edu.

The Director of the HNRC for 17 years, Dr. Igor Grant began his career at UCSD in 1972 as Assistant Professor of Psychiatry, School of Medicine after completing medical studies at the University of British Columbia, and internship and residency at the University of Pennsylvania. Today, Dr. Grant is also Professor and Executive Vice-Chair of Psychiatry. In collaboration with UCSD and VA investigators in Psychiatry, Medicine, Neurosciences, Radiology, Pediatrics, Ophthalmology, and Pathology, Dr. Grant is a leader in the study of neuropsychological, neuroradiological, neurological, psychiatric, and neuropathological changes in persons with HIV infection. He is the founding Editor of the Journal of the International Neuropsychological Society and founding co-editor of the journal AIDS and Behavior.

Dr. Grant has witnessed many changes in the HIV community in San Diego and describes major phases in the HNRC's development, each which builds on the other to more effectively meet the needs of the HIV patient population. Neuropathological changes observed and characterized by HNRC investigators in the late 80's and 90's led to detailed investigations into the neurocognitive and neuropsychological changes linked to HIV infection. Translational studies focusing on the biological underpinnings of neurological changes compared ante-mortem cognitive performance with post-mortem neuropathological characteristics. Following establishment of positive correlation between cognitive impairment and loss of markers for synaptic complexity and connections, the HNRC blazed the path towards increased understanding of the "real-life" implications of HIV-associated CNS dysfunction. Studies from HNRC investigators showed that in the absence of advanced medical manifestation, subtle cognitive impairments such as memory and attention disorders contributed to inability to hold a job, decreased adherence to anti-retroviral medication and led to more rapid disease progression and ultimately, death.

The next phase of the HNRC's growth was largely driven by the development of highly active anti-retroviral therapy (HAART). Dr. Grant points out that an important question then became, "Do patients who survive longer benefit neurologically from HAART?" The development of biomarkers to detect both impairment and improvement by using the CSF as a window to the brain provided much needed evidence that some anti-retrovirals may provide better benefit in the CNS. For example, studies from the HNRC and others have shown that using a CNS penetrating anti-retroviral that drives down virus in the CSF leads to improved cognition. Over the past 17 years the HNRC has grown, from a limited group of research projects and core functions, into an infrastructure of support mechanisms to promote numerous HIV-related research programs. Among these programs, Dr. Grant serves as the Director of the CNS HIV AntiRetroviral Therapy Effects Research (CHARTER) program the California NeuroAIDS Tissue Network (CNTN), and the Center for Medicinal Cannabis Research (CMCR) and as the Program Project Director for NeuroAIDS: Effects of Methamphetamine and HCV.

When asked where he sees the HNRC in the next five years, Dr. Grant replied, "It would be great if we went out of business!" He quickly explained that he was referring to eradication of HIV. Dr. Grant mentioned that, "Although enrollment of recruits into HNRC programs has not decreased over the years, the face of HIV has changed." He explained that today people of color contribute significantly to the HIV population, making up approximately 40-50% of newly infected individuals. In line with changes in HIV CNS disease progression and the increase in diversity among groups infected, Dr. Grant stated that the goals for the HNRC include increased focus on host and viral genetics as well as cofactors such as drug abuse and HCV infection and how these play a role in disease manifestation and response to treatment. Internationally, Dr. Grant emphasized the HNRC's commitment to serve as a catalyst for capacity building in developing countries to create sustainable and renewable resource programs geared towards fighting HIV. Dr. Grant expressed that in resource limited settings, 3rd rate science is unacceptable, but rather we must strive to conduct the highest quality science within inherent limitations. He hopes that in collaboration with investigators from developing regions, the HNRC could foster, through training and organization, the development of autonomously functioning "Centers of Excellence" for NeuroAIDS research with current collaborations in China, India, Brazil, Romania, and Ethiopia.

Asked to comment on the most effective approach to eradicate HIV, Dr. Grant responded, "How shall I put this? The single biggest barrier in preventing HIV transmission to women and children has to do with cultural beliefs and attitudes towards the status of women in many parts of the world." Politics have also hampered dissemination of methods to reduce spread of HIV, such as sex education of older children, widespread condom distribution, and needle exchange.

Among the many hats worn by Dr. Grant, "one of the most important" he points out, is that of a teacher. As evidenced by his most recent award, Annual Faculty Award for Excellence in Teaching from UCSD, Dr. grant contributes significantly to teaching and training of students from all levels at UCSD. Dr.

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Message from the President (continued)

2006 Investigators-In-Training Award Winners

Society's governance. Three new members have recently been invited to serve on the ISNV Board, Drs Jennifer Gordon, Ehud Lavi and Monique Lafon, and we look forward to working with all three. We have also formed a new ISNV Subcommittee concerned with International Affairs, chaired by Dr Mahendra Kumar of the University of Miami Miller School of Medicine. This addition to the other six subcommittees has a very important remit, including the recruitment and involvement of scientific colleagues across the globe, in particular Asia, Africa, the Far East and South America. Increasing the Society's membership outside North America and parts of Europe continues to be challenging, but it is clearly essential to achieve this goal in order to realise the wider aspirations of our Society. I should also add that last year I commissioned a routine audit of the Society's finances, and I am pleased (but certainly not surprised) to report that this was highly satisfactory. I would like to thank Dr Kamel Khalili, our Society's treasurer, for all his excellent work over many years. In January 2007, this treasurer's role will be taken over by Dr Brian Wigdahl.

I was both delighted and honoured to be invited by the Board after the International meeting last June to serve as President of the ISNV for a second three year term of office. I have accepted this challenge and feel very privileged to be able to represent an organisation that is so vibrant and has such a wealth of enthusiasm and talent among its members. I shall continue to carry out the duties of the position to the very best of my ability, and I continue to be most grateful for the invaluable support and advice of the other Officers and colleagues, including Robert Fujinami (Vice-President), Kamel Khalili (Editor-in-Chief of the Journal of NeuroVirology), Brian Wigdahl (Treasurer), Jennifer Gordon, and Walter Atwood (Secretary).

The next ISNV symposium will take place in the fall of 2007 in San Diego, and with Dr Igor Grant as the meeting Chair, who I know will do an outstanding job. I hope that all of you will be able to attend this meeting, and also that you will try to recruit at least one new member of the Society. If that happened then we would rapidly see a significant expansion in our numbers.

ISNV Highlight - Igor Grant, M.D. (continued)

Grant states, "The most exciting aspect of my interactions with students is when one of our trainees receives an independent grant or scholarship." Dr. Grant expressed excitement and joy over the next ISNV meeting to be held in San Diego in 2007, then added quickly in jest, "Be careful with whom you ride the airport shuttle …"

10th Anniversary of the First International Symposium on NeuroVirology (continued)

Francisco, California (2000, Lynn Pulliam, Chair), Dusseldorf, Germany (2002, Gabriele Arendt, Chair), Baltimore, Maryland (2003, Janice Clements and Avindra Nath, Co-Chairs), Sardinia, Italy (2004, Antonina Dolei, Kamel Khalili and Pasquale Ferrante, Co-Chairs), and Philadelphia, Pennsylvania (2006, Brian Wigdahl, Jennifer Gordon, Janice Clements, and Lynn Pulliam, Co-Chairs). The 8th International Symposium is scheduled for the Fall of 2007 in San Diego, California with Igor Grant serving as the Chair. During the past decade, Society membership has grown to more than 350 investigators from over 20 countries.

More than 250 different investigators from across the globe have presented their latest results orally at the International Symposia on NeuroVirology over the past 10 years. In addition to the scientific Plenary Sessions more than 1,300 posters have been presented with the abstracts published in JNV. The quality of the presentations has been exceptional and this is a tribute to the scientific excellence and the growing number of investigators working in the area of neurovirology and related disciplines. This is a tribute to the strength of the Society and its membership and has allowed the Organizing Committees to select new faces each year for the oral presentations with little or no repetition of presenters from year to year. Perhaps the cornerstone of the Symposium has been the tremendously popular Investigators in Training Sessions with Travel Awards presented to more than 60 graduate students, postdoctoral fellows, and clinical fellows. Another highlight of the Symposium over the years has been the presentation of the Pioneer in NeuroVirology Award to a neurovirologist for his or her extraordinary life-long scientific achievements. Previous recipients of this prestigious award are Richard T. Johnson (1999), Volker ter Meulen (2000), Neal Nathanson (2002), Michael B. A. Oldstone (2003), Hilary Koprowski (2004), and Opendra Narayan (2006). The 2007 Pioneer in NeuroVirology will be presented at the 8th International Symposiun on NeuroVirology in San Diego, California.

The ability to provide travel awards to trainees and plenary speakers and to partially defray other administrative costs of the Symposia has been made possible by generous support provided primarily by the National Institute for Mental Health and National Institute for Neurologic Disorders and Stroke through the funding of R13 conference grants over the years. At various times, supplementary support has also been received from the National Cancer Institute, National Institute for Drug Abuse, and National Institute on Aging. The Society and Symposium have strived for inclusivity and equality at all levels including gender, under-represented minorities, age, international heritage, as well as economic and personal challenges.

Contact the ISNV Administrative Office at:
Phone: 215-204-0680 • Fax: 215-204-0681 • Email: mail@isnv.org • Web: www.isnv.org

ISNV Newsletter printed by

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