

ISNV

International Society for NeuroVirology

Volume 1

Number 1

May 1999

Message from the President

BRIAN WIGDAHL, Ph.D. • HERSHEY, PA



I would like to take this opportunity to welcome you as a Founding Member of the International Society for NeuroVirology. The Society was established to expand communication among researchers and clinical scientists in order to increase their knowledge of neurovirology, to promote the clinical application of this knowledge, and to prevent and treat viral-induced neurological diseases. We will accomplish this goal through international meetings, the official bi-monthly publication, the Journal of NeuroVirology, and the Reviews of NeuroVirology, a new on-line journal. Since we established the International Society for NeuroVirology several months ago, we have initiated a number of projects relative to the success of the society. First and foremost, we have pursued an aggressive campaign to expand membership with a number of international mailings of the newly designed application pamphlet and advertisements in the Journal of NeuroVirology, the official journal of the society. The ISNV application pamphlet has also been distributed at a large number of international meetings. To continue to expand the ISNV membership roster, I would also like to encourage all society members to urge their colleagues, including their young scientists in training, to join the Society. This coming year will also include continued enhancement of the society's web site and the addition of new Board Members. For additional news and updates, please remember to visit our web site at www.isnv.org. We look forward to your participation in the Society and related activities during 1999 and into the new millennium.

Inaugural Issue ISNV Newsletter

E. O. MAJOR, Ph.D. • BETHESDA, MD



As the ISNV begins its first full year of activity, one of its goals is to increase communication among all its members and interactions with other investigators in the field of virology. The Newsletter intends to help achieve that goal by providing a forum for information in this scientific field as well as highlighting news of ISNV members, breaking news in the world of viruses, and comments on the literature, meetings and open editorial essays. The Newsletter will attempt to summarize the critical issues in the field of neurovirology, and bring a context of this research area into focus with other areas in which viruses and infectious disease processes are in play. The editorial staff welcomes everyone's opinion, their insights into this or other areas of investigation, and their assistance launching the Society and its written representation. From the editors: E. O. Major, S. Jacobson, and T. Weber.

BOARD OF DIRECTORS

JOSEPH BERGER, USA
JANICE CLEMENTS, USA
FRANÇOISE GRAY, FRANCE
STEVEN JACOBSON, USA
PETER KENNEDY, UK
KAMEL KHALILI, USA

EUGENE MAJOR, USA
MITSUHIRO OSAME, JAPAN
LYNN PULLIAM, USA
VOLKER ter MEULEN, GERMANY
THOMAS WEBER, GERMANY
BRIAN WIGDAHL, USA

IN THIS ISSUE:

- JNV Summary
- ISNV Pioneer Award
- Prion Update
- HIV Neuroscience Summary

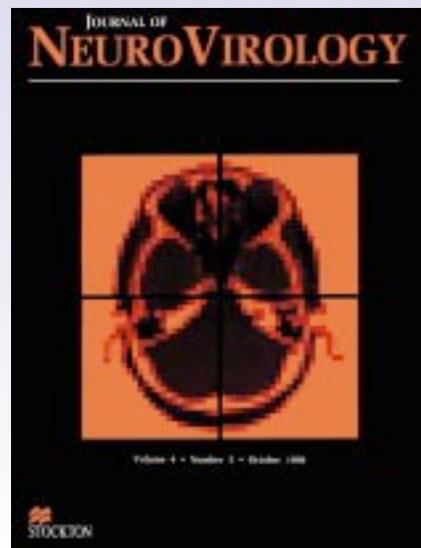
From the Desk of the Editor-in-Chief

KAMEL KHALILI, Ph.D. • PHILADELPHIA, PA



JNV is quickly approaching its 5th year with Stockton Press. We are very pleased that this young journal has played an important role in the field of neurovirology. The Journal remains dedicated to understanding the molecular pathogenesis of viral-induced neurological diseases. It also provides a unique forum for communication among basic and clinical scientists. During the past four years, JNV has published more than 200 papers authored by distinguished investigators and physicians in the area of molecular pathogenesis of CNS diseases, molecular neurovirology, epidemiology, experimental animal models for nervous system diseases, and development of therapeutic strategies. JNV

has also recently dedicated a number of its pages to interesting and informative clinical case studies. In order to bring the latest discoveries in specific areas to its readership, the Journal has devoted several issues to particular topics including: HTLV-1 and HAM/TSP, Brain tumors,



NeuroAIDS (which also covered the Neuroscience of HIV-1 Infection Conference), a special supplement devoted to the First International Symposium of NeuroVirology in May 1997, and another special issue devoted to Chemokines in February 1999. In 1996 the first 'impact' factor was 1.833, in the Virology category 9/19, and Neurosciences category 77/144. We were extremely pleased to receive the most recent Impact Factor for 1997 of 2.457, with an increase to 8/14 in Virology and 51/149 in Neurosciences. This is a testament to the quality and consistent standards of the papers that are published in this successful journal. JNV is proud to be an international journal for and by both basic and clinical scientists. The Editors look forward to an exciting year ahead in partnership with the International Society for NeuroVirology.

Pioneer in NeuroVirology Award

JANICE CLEMENTS, Ph.D. • BALTIMORE, MD

The International Society for NeuroVirology will be presenting its First Annual Pioneer in NeuroVirology Award to Dr. Richard T. Johnson, Professor of Neurology at The Johns Hopkins University School of Medicine. The award recognizes Dr. Johnson for his many important contributions to the field of neurovirology, and will be presented at the Second International Symposium of NeuroVirology, a Gordon Research Conference, to be held in June 1999. Dr. Richard Johnson's interest in viral infections of the central nervous system began in the 1960's when he was in the Department of Viral Diseases at Walter Reed Army Institute of Research. He worked with Dr. Edward Buescher, a virologist, and characterized the effects of enterovirus infections in the central nervous system. He then went on to the Massachusetts General Hospital where he trained in neurology. Dr. Johnson has been the leader in synthesizing the fields of virology and neurology. The major part of Dr. Johnson's career was at the Johns Hopkins University School of Medicine as the Dwight D. Eisenhower Professor of Neurology, a position he held from 1969 until his appointment as neurologist-in-chief and director of the



RICHARD T. JOHNSON Johnson is past President of the American Neurological Association, has served on many advisory boards including the National Multiple Sclerosis Society, the ALS Society of America, the Department of Defense, the National Institutes of Health, and the National Academy of Science. His international prizes include the Humboldt Prize for Senior U.S. Scientists, the Order of Hipolito Unanue conferred by the President of Peru, the Jean Martin Charcot Award for the International Federation of Multiple Sclerosis Societies, and the first Association of British Neurologists Multiple Sclerosis Society Research medal.

Department of Neurology in 1988. Both his clinical and basic research work over the past 30 years have focused on infections of the nervous system and neurovirology. Dr. Johnson is considered by many to be a founding father of neurovirology and is responsible for training many leaders in the field. Dr.

Mad Cows & Englishmen

An Update on Prions

THOMAS WEBER, M.D. • HAMBURG, GERMANY

FEATURED BRIEF

A recent report by the CJD surveillance unit from Edinburgh hints at an increase in the cumulative incidence of deaths from variant CJD (vCJD) in the UK. The total number of definite cases is 38 and of probable cases

2. Although this appears to be alarming, the high rate of nine deaths from vCJD in the 4th quarter of 1998 needs to be viewed with great caution given the long incubation period of 30 and more years.

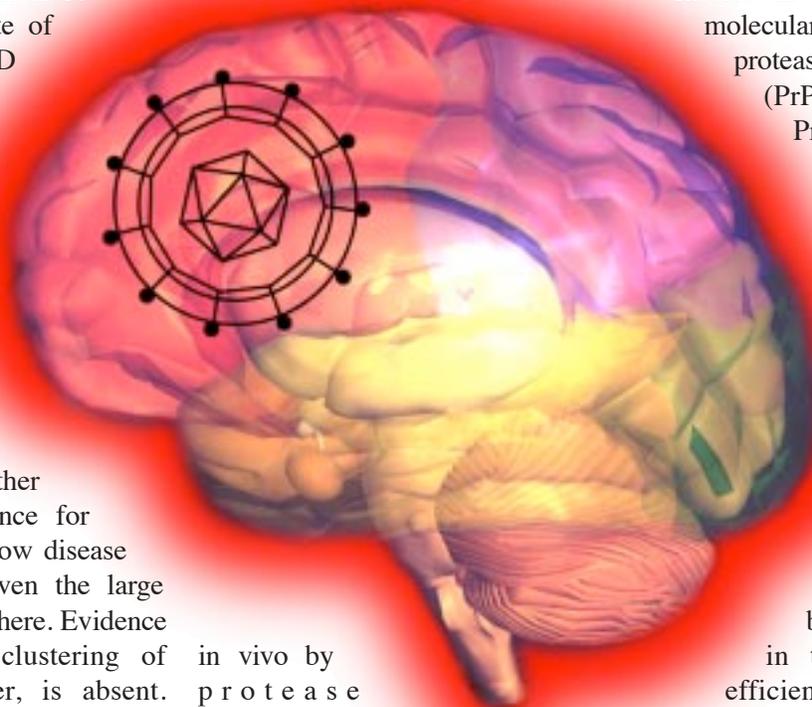
The occurrence of all but one case in the United Kingdom provides further epidemiological evidence for transmission of mad cow disease (BSE) to humans, given the large number of BSE cases there. Evidence for a geographical clustering of vCJD cases, however, is absent. Prions, the putative agents of spongiform encephalopathies, spread via the gastrointestinal tract and autonomic nerve tracts to the spinal cord and brain. Hematogenous spread is

mediated by B-lymphocytes. In accordance with the protein-only hypothesis of prion propagation, infectivity should be propagated *in vitro* and

in vivo by protease resistant prion protein (PrP^{Sc}) only. Recent experimental findings, however, failed to show propagation of infectivity

by PrP^{Sc} in transgenic mice. Experimental findings in knockout mice with ectopic expression of the prion protein in T lymphocytes or hepatocytes provide independent evidence for the need of additional factors in prion replication. The molecular mechanisms by which protease sensitive prion protein (PrP^C) is converted into PrP^{Sc} involves the transition from alpha helical conformation to a beta sheet structure.

The discovery of prions in yeast and fungi has greatly helped to elucidate their functions. In *S. cerevisiae* the prion-like state [PSI⁺] is characterized by a significant decrease in translation termination efficiency, leading to the production of abnormally extended polypeptides. [PSI⁺] strains exhibit enhanced tolerance to heat and chemical stress in response to environmental changes.



The "Featured Brief" section of the newsletter will highlight an area of international importance that the editors feel deserves special attention. An update of current activity and information on a "featured" topic should help keep members aware of fast paced studies and new results. The Editors are always interested in your ideas for future articles and brief comments on its topics.

HIV and the Nervous System: Emerging Issues

DIANNE RAUSCH, Ph.D. • BETHESDA, MD

A recent symposium, "HIV and the Nervous System: Emerging Issues," probed the effects of Human Immunodeficiency Virus (HIV) infection on the nervous system. The meeting was held in Washington D.C. on April 14-16, 1999, under the joint sponsorship of the National Institute of Mental Health and the National Institute of Neurological Disorders and Stroke in cooperation with

Dr. Al Kerza-Kwiatecki. The symposium had three cardinal purposes: to bring together diverse perspectives – immunological, virological, and neurological – on the effects of HIV on the nervous system; to review current research findings; and to identify pivotal questions for future research, especially on pathogenesis and therapeutics.

see HIV & CNS

ISNV WEBnotes

FRED KREBS, Ph.D. • HERSHEY, PA

Since its inception, the ISNV web site (<http://www.isnv.org>) has provided global access to information about the goals of the Society, benefits of membership, international meetings sponsored by the ISNV, and the Journal of NeuroVirology, the official journal of the ISNV. The site also includes links to web pages that describe other meetings and organizations related to the field of neurovirology, as well as member-contributed links to graduate education programs related to the study of neurovirology, postdoctoral positions available in related fields, and laboratory web pages maintained by members of the ISNV. Future enhancements will include an online version of the ISNV Newsletter and a searchable membership database.

Activity in the ISNV Office

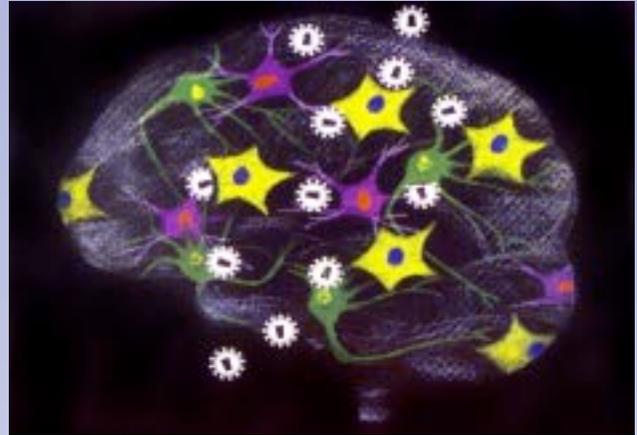
One of our main objectives since the establishment of the ISNV is to have at least two hundred members within the first year. To reach this goal we have conducted mass mailings, disseminated Society materials at national and international meetings, and published a membership application form in each JNV issue. We are extremely pleased to report that, at the printing of this Newsletter, we are nearing our goal. At the first meeting of the Board of Directors in December, members voted to expand the Society's Board to include additional international representation. An important goal for the year ahead is to solicit corporate funding to assist with future Society activities.

First Annual Gordon Conference Preview

The first Gordon Research Conference on Neurovirology which will take place on June 6-10, 1999 at Colby Sawyer College in New London, New Hampshire. This conference will provide a unique opportunity for both basic scientists and clinicians with an interest in viral infections of the nervous system to share their expertise and knowledge. It will offer discussion on topics such as HIV-1 neuropathogenesis, transmissible encephalopathies, pathogenesis of demyelinating diseases, a new link for viruses with human diseases, and the latest efforts on the development of molecular and cellular therapeutic strategies for CNS disease. The conference organizers are Kamel Khalili, Ph.D. and Eugene O. Major, Ph.D.



HIV & CNS



The meeting was opened by Dr. Gary Nabel, who has recently been appointed the Director of the new NIH Vaccine Research Center. The five sessions – Immunology, Viral Load in the CNS, HIV and the Blood Brain Barrier, HIV Co-Receptors in the CNS, and Therapeutics – reflected currently active research areas. The keynote speakers in these sessions, Drs. Cedric Raine, William Hickey, George Shaw, Richard Ransohoff, and William Powderly, respectively, addressed these research areas broadly, while the speakers within each session focused more specifically on issues of HIV in the nervous system. Although our understanding of HIV-associated dementia (HAD), its associated clinical and neurological pathology, and the mechanisms responsible for the pathology has increased over the past two decades, many questions are still unanswered. In addition, new issues have emerged within the current climate of improved therapeutics. Since anti-retroviral therapies do not efficiently penetrate the CNS, the nervous system remains vulnerable to reservoirs of HIV-infected cells located in the periphery and in the central nervous system. Furthermore, although the new combination therapies have been very successful at arresting disease progression, Dr. Powderly reported the sobering observation that as many as 30 percent of patients are failing these drug therapies, giving rise to new drug-resistant viral variants. Questions about HAD outpace answers. The broad outlines of HAD pathogenesis are well accepted, but the detailed mechanisms of neurotoxicity remain elusive. This meeting successfully highlighted important issues concerning the effects of HIV on the nervous system, and provided a forum for discussion of future research priorities.

Future ISNV Related Activities

Third International Symposium on NeuroVirology, San Francisco, CA, Sept. 2000, Chair, Lynn Pulliam, Ph.D.

Fourth International Symposium on NeuroVirology, Barga, Italy, Sept. 2001, Chair, Gene Major, Ph.D.