



CURRICULUM VITAE
AVINDRA NATH

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DEMOGRAPHIC INFORMATION

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Date and place of birth: Dec 1, 1958; Saskatoon, Canada.

Specialty Board: American Board of Psychiatry and Neurology (certified in Neurology) 1988.

Licensure: Dec 1983-Federal licensing exam (FLEX)
Dec 1983 – present (inactive). Illinois (36-71038)
Aug 1988-1992 Texas (H4027)
June 1990 - Aug 1997. Manitoba (1313-649)
Aug 1997-Mar 2003. Kentucky (33317)
Nov 2002-present. Maryland (D0059549)

EDUCATION AND TRAINING

July 1976 - June 1982 Medical Student and Internship, C.M.C. Ludhiana, India.

Sept 1982 - June 1983 Graduate Student, Neuroscience, University of Texas Medical Branch, Galveston, Texas. (Lab Chief: B. Haber; Program Director: W. Willis)

RESIDENCY

July 1983 - June 1986 Department of Neurology, University of Texas Health Science Center, Houston, Texas. (Chairman: F.M. Yatsu)

FELLOWSHIPS

July 1986 - Dec 1988 Research Fellow in Neurovirology/Immunology, Department of Neurology, University of Texas Health Science Center, Houston, Texas. (Lab Chief: J.S. Wolinsky)

Dec 1988 - May 1990 Visiting Associate, Section of Molecular Virology and Genetics, Laboratory of Viral and Molecular Pathogenesis, National Institute of Neurological Diseases and Stroke, National Institutes of Health, Bethesda, Maryland (Section Chief: E.O. Major; Lab Chief: M.E. Dubois-Dalcq)

FACULTY POSITIONS

Aug 2002-present: Professor, Department of Neurology and Department of Neuroscience. Director, Richard T. Johnson, Division of Neuroimmunology and Neurological Infections, Johns Hopkins University, Baltimore, Maryland.

July 2000- Aug 2002: Professor, Department of Neurology and Department of Microbiology and Immunology, University of Kentucky, Lexington, Kentucky

Sept. 1997-June 2000: Associate Professor, (Tenured 7/99) Department of Neurology and Department of Microbiology and Immunology, University of Kentucky, Lexington, Kentucky.

July 1996-Aug 1997: Head, Research group on Neurovirology and Neurodegenerative Diseases, University of Manitoba, Winnipeg, Manitoba, Canada.

April 1996-Aug 1997: Associate Professor, Department of Medicine (Section of Neurology) and the Department of Medical Microbiology, University of Manitoba, Winnipeg, Manitoba, Canada

June 1990-Mar 1996: Assistant Professor in the Department of Internal Medicine (Section of Neurology) and the Department of Medical Microbiology, University of Manitoba and Health Science Center, Winnipeg, Manitoba, Canada.

RESEARCH ACTIVITIES

PUBLICATIONS IN PEER REVIEWED JOURNALS

(Trainees supervised are underlined; *Senior author; #Selected for news release)

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1. Li, W, Malpica-Llanos T, Gundry R, Cotter R, Sacktor, N, McArthur J, **Nath A***. Nitrosative stress with HIV dementia causes decreased L-prostaglandin D synthetase activity. *Neurology* (in press)
2. Mahadevan A, Shankar SK, Satishchandra P, Ranga U, Chickabasaviah YT, Santosh V, Vasanthapuram R, Pardo-Villamizar C, **Nath A***, Zink MC. Characterization of HIV infected cells in infiltrates associated with CNS opportunistic infections in patients with HIV clade C infection. *J Neuropathology Experimental Neurology* (in press)
3. Wojna V, Skolasky RL, McArthur JC, Maldonado E, Hechavarria R, Mayo R, Selnes O, Ginebra T, de la Torre T, Garcia H, Kraiselburd E, Melendez-Guerrero LM, Zorilla CD, **Nath A**. Spanish validation of the HIV Dementia Scale in women. *AIDS Patient Care and STDs*, in press, 2007.
4. Wojna, V, Robles L, Skolasky RL, Mayo R, Selnes OA, de la Torre T, Maldonado E, **Nath A**, Melendez L, Lasalde-Dominicci J. Associations between cigarette smoking with viral immune profile and cognitive function in human immunodeficiency virus seropositive women. *J Neurovirology*, in press, 2007.
5. Opii WO, Sultana R, Abdul H, Ansari MA, **Nath A**, Butterfield A. Oxidative Stress and Toxicity Induced by the Nucleoside Reverse Transcriptase Inhibitor (NRTI) - 2', 3'-dideoxycytidine (ddC): Relevance to HIV Dementia. *Expt Neurol* 2007; 204: 29-38.
6. Hahn K, Robinson B, Anderson C, Li W, Gartner S, Simpson D, Morgello S, **Nath A***. Differential effects of HIV infected macrophages on dorsal root ganglia neurons. *Expt Neurol* (in press).
7. Schifitto G, Navia BA, Yiannoutsos CT, Marra CM, Chang L, Ernst T, Jarvik JG, Miller EN, Singer EJ, Ellis RJ, Kolson DL, Simpson D, **Nath A**, Berger J, Shriver SL, Millar LL,

Colquhoun D, Lenkinski R, Gonzalez RG, Lipton SA; the Adult AIDS Clinical Trial Group (ACTG) 301 and 700 Teams and the HIV MRS Consortium. Memantine and HIV-associated cognitive impairment: a neuropsychological and proton magnetic resonance spectroscopy study. *AIDS*. 21:1877-1886; Sept 2007

8. Eugenin EA, King JE, **Nath A**, Calderon TM, Zukin RS, Bennett MV, Berman JW. HIV-tat induces formation of an LRP-PSD-95- NMDAR-nNOS complex that promotes apoptosis in neurons and astrocytes. *Proc Natl Acad Sci U S A*. 2007 Feb 27;104(9):3438-43.
9. Chauhan A, Hahn S, Gartner S, Pardo CA, Netesan SK, McArthur J, **Nath A**. Molecular programming of endothelin-1 in HIV-infected brain: role of Tat in up-regulation of ET-1 and its inhibition by statins. *FASEB J*. 2007 Mar;21(3):777-89.
10. Robinson B, Li Z, **Nath A***. Nucleoside reverse transcriptase inhibitors and human immunodeficiency virus proteins cause axonal injury in human dorsal root ganglia cultures. *J Neurovirol*. 2007 Apr;13(2):160-7.
11. Rumbaugh JA, Li G, Rothstein J, **Nath A**. Ceftriaxone protects against the neurotoxicity of human immunodeficiency virus proteins. *J Neurovirol*. 2007 Apr;13(2):168-72.

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12. Rumbaugh J, Bachani M, Tikhonov I, Pauza D, **Nath A**. A monoclonal antibody against HIV Tat attenuates neurotoxicity via glutamate receptors. *Retrovirology*. 2006 Dec 21;3 Suppl 1:P54.
13. Wojna V, Skolasky RL, Hechavarria R, Mayo R, Selnes O, McArthur JC, Melendez LM, Maldonado E, Zorrilla CD, Garcia H, Kraiselburd E, **Nath A**. Prevalence of human immunodeficiency virus-associated cognitive impairment in a group of Hispanic women at risk for neurological impairment. *J Neurovirol*. Oct;12(5):356-64; 2006.
14. #Irani D, Anderson C, Gundry R, Cotter R, Moore S, Kerr, D, McArthur JC, Sacktor N, Pardo C, Jones, M, Calabresi P, **Nath A***. Cleavage of Cystatin C in the CSF of patients with Multiple Sclerosis. *Ann Neurol* 59:237-247; 2006.
15. Patel J, Galey, D, Jones J, Ray P, Woodward J, **Nath A**, Mumper R. HIV-1 Tat-coated nanoparticles result in enhanced humoral immune responses and neutralizing antibodies compared to alum adjuvant. *Vaccine* 24:3564-3573: 2006.
16. Wang T, Allie R, Conant K, Haughey N, Turchan-Chelowo J, Hahn K, Rosen A, Steiner J, Keswani S, Jones M, Calabresi PA, **Nath A*** Granzyme B mediates neurotoxicity through a G-protein coupled receptor. *FASEB J* Jun;20(8):1209-11.
17. Shapshak P, Duncan R, **Nath A**, Turchan J, Kanguane P, Rodriguez H, Duran EM, Ziegler F, Amaro E, Lewis A, Rodriguez A, Minagar A, Davis W, Seth R, Elkomy FF, Chiappelli F, Kazic T. Gene Chromosomal Organization and Expression in Cultured Human Neurons Exposed to Cocaine and HIV-1 proteins gp120 and tat: Drug Abuse and NeuroAIDS. *Frontiers in Bioscience* 11, 1774-1793, May 1, 2006
18. Shapshak P, Duncan R, Turchan J, **Nath A**, Minagar A, Kanguane P, Davis W, Chiappelli F, Elkomy F, Seth R, Kazic T. Bioinformatics Models In Drug Abuse and NeuroAIDS: Using and Developing Databases, *Bioinformatics*, 1 (3), 86-88, 2006. www.bioinformation.net
19. Aksenov MY, Aksenova MV, **Nath A**, Ray PD, Mactutus CF, Booze RM. Cocaine-mediated enhancement of Tat toxicity in rat hippocampal cell cultures: the role of oxidative stress and D1 dopamine receptor. *Neurotoxicology*, 27: 217-228; 2006.
20. Aksenova MV, Silvers JM, Aksenov MY. **Nath A**, Ray PD, Mactutus CF, Booze RM. HIV-1 Tat neurotoxicity in primary cultures of rat midbrain fetal neurons: changes in dopamine transporter binding and immunoreactivity. *Neurosci Lett* 395: 235-239; 2006.

21. Wilson, ME, Allred, KF, Bisotti, AJ, Chauhan, A, Bruce-Keller, AJ, **Nath, A**. Estrogen suppresses Tat-induced transcription in glial cells. *AIDS Research and Human Retroviruses*, 2006 Apr;22(4):350-6
22. Sui Y, Bittel L-S, Li S, Loganathan R, Pinson D, Dhillon N, **Nath A**, Kolson D, Narayan O, Buch S. CXCL10-induced Cell Death in Neurons: Role of Calcium Dysregulation. *Eur J Neuroscience*, 2006 Feb;23(4):957-64.
23. **Nath A***, Venkataramana A, Reich DS, Cortese I, Major EO. Progression of Progressive Multifocal Leukoencephalopathy despite treatment with beta-interferon. *Neurology* Jan 66: 149-50; 2006. Letter to the editor and reply. *Neurology* 66:1787-1788; 2006.
24. Wallace DR, Dodson S, **Nath A**, Booze RM. Estrogen attenuates gp120- and tat1-72-induced oxidative stress and prevents loss of dopamine transporter function. *Synapse*. 2006 Jan;59(1):51-60.
25. Riedel D, Ghate M, Nene M, Paranjape RS, Mehendale SM, Bollinger RC, Sacktor N, McArthur JC, **Nath A***. Screening for HIV dementia in an HIV, clade C-infected population in India. *J. Neurovirol* 2006 Feb;12(1):34-8
26. Robinson B, Turchan J, Anderson, C, Chauhan A, **Nath A***. Modulation of HIV infection by anticonvulsant drugs. *Journal of Neurovirology* 2006 Feb;12(1):1-4
27. Turchan-Cholewo J, Liu Y, Gartner S, Jie C, Peng X, Chu K, Chen C, Chauhan A, Haughey N, Cutler R, Mattson M, Pardo C, Conant K, Sacktor N, McArthur JC, Hauser KF, Gairola C, **Nath A*** Increased vulnerability of ApoE4 neurons to HIV proteins and opiates: protection by diosgenin and L-deprenyl. *Neurobiology of Disease*, 2006 Jul;23(1):109-19.
28. Caporello E, **Nath A**, Slevin J, Galey D, Steiner J, Hamilton G, Williams L, Haughey NJ. The Immunophilin Ligand GPI1046 Protects Neurons From the Lethal Effects of the HIV-1 Proteins gp120 and Tat by Modulating Endoplasmic Reticulum Calcium Load. *Journal of Neurochemistry*, Jul;98(1):146-55; 2006
29. Venkataramana A, Pardo C, McArthur JC, Kerr, D, Irani D, Griffin J, Burger P, Reich D, Calabresi P, **Nath A***. Immune reconstitution inflammatory syndrome in the CNS of HIV infected patients. *Neurology* 2006 Aug 8;67(3):383-8. *Highlight and commentary*: by Alessandro Di Rocco. p 373.
30. Cass W, Theodore S, **Nath A**, Steiner J, Young K, Maragos, W. Inhibition of Tumor Necrosis Factor-Alpha Signaling Prevents Human Immunodeficiency Virus-1 Protein Tat and Methamphetamine Interaction. *Neurobiology of Disease* Sep;23(3):663-8; 2006.
31. Schifitto G, Yiannoutsos CT, Simpson DM, Marra CM, Singer EJ, Kolson DL, **Nath A**, Berger JR, Navia B, and the Adult AIDS Clinical Trials Group (ACTG) 301 Team. A Placebo-Controlled Study of Memantine for the Treatment of HIV-Associated Sensory Neuropathy. *J Neurovirology* Aug;12(4):328-331; 2006.

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32. Kendall, SL, Anderson CF, **Nath A**, Turchan-Cholewo J, Mactutus, CF, Booze RM. Gonadal steroids differentially modulate neurotoxicity of HIV and cocaine: testosterone and ICI 182,780 sensitive mechanism. *BMC Neurosci* 6:40-48, 2005
33. Clark JP 3rd, Sampair CS, Kofuji P, **Nath A**, Ding JM. HIV protein, transactivator of transcription, alters circadian rhythms through the light entrainment pathway. *Am J Physiol Regul Integr Comp Physiol*. 2005 Sep;289(3):R656-62.
34. Pocernich CB, Boyd-Kimball D, Poon HF, Thongboonkerd V, Lynn BC, Klein JB, Calebrese V, **Nath A**, Butterfield DA. Proteomics analysis of human astrocytes expressing the HIV protein Tat. *Brain Res Mol Brain Res*. 2005 Feb 18;133(2):307-16.
35. Pocernich CB, Fai Poon H, Boyd-Kimball D, Lynn BC, **Nath A**, Klein JB, Allan Butterfield D. Proteomic analysis of oxidatively modified proteins induced by the mitochondrial toxin

- 3-nitropropionic acid in human astrocytes expressing the HIV protein tat. *Brain Res Mol Brain Res*. 2005 Feb 18;133(2):299-306.
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 37. Williams MA, Turchan J, Lu Y, **Nath A**, Drachman DB. Protection of human cerebral neurons from neurodegenerative insults by gene delivery of soluble tumor necrosis factor p75 receptor. *Exp Brain Res*. 2005 Sep;165(3):383-91
 38. Shankar SK, Mahadevan A, Satishchandra P, Kumar RU, Yasha TC, Santosh V, Chandramuki A, Ravi V, Nath A. Neuropathology of HIV/AIDS with an overview of the Indian scene. *Indian J Med Res*. 2005 Apr;121(4):468-88.
 39. Helke KL, Queen SE, Tarwater PM, Turchan-Cholewo J, **Nath A**, Zink MC, Irani DN, Mankowski JL. 14-3-3 protein in CSF: an early predictor of SIV CNS disease. *J Neuropathol Exp Neurol*. 2005 Mar;64(3):202-8.
 40. Zhang C, Gehlbach P, Gongora C, Cano M, Fariss R, Hose S, **Nath A**, Green WR, Goldberg MF, J. Zigler S, Jr, Sinha D A potential role for b- and g-crystallins in the vascular remodeling of the eye. *Developmental Dynamics*, 234:36-47; 2005.
 41. Hollman AM, Christian DA, Ray PD, Galey D, Turchan J, **Nath A**, Bhattacharyya D. Selective Isolation and Purification of Tat Protein via Affinity Membrane Separation. *Biotechnol Prog*. 2005 Apr 1;21(2):451-459.
 42. Flora G, Pu H, Lee YW, Ravikumar R, **Nath A**, Hennig B, Toborek M. Proinflammatory synergism of ethanol and HIV-1 Tat protein in brain tissue. *Experimental Neurology*, Volume 191, Issue 1, January 2005, Pages 2-12.
 43. Andras IE, Pu H, Tian J, Deli MA, **Nath A**, Hennig B, Toborek M: Signaling mechanisms of HIV-1 Tat-induced alterations of claudin-5 expression in brain endothelial cells. *J Cerebral Blood Flow and Metabolism*. 2005 Mar 30
 44. El-Hage N, Gurwell JA, Singh IN, Knapp PE, **Nath A**, Hauser KF. Synergistic increases in intracellular Ca(2+), and the release of MCP-1, RANTES, and IL-6 by astrocytes treated with opiates and HIV-1 Tat. *Glia*. Jan 2005
 45. Singh IN, El-Hage N, Campbell ME, Lutz SE, Knapp PE, **Nath A**, Hauser KF. Differential involvement of p38 and JNK MAP kinases in HIV-1 Tat and gp120-induced apoptosis and neurite degeneration in striatal neurons. *Neuroscience*. 2005;135(3):781-90
 46. Hussain NS, Rumbaugh J, Kerr D, **Nath A**, Hillis SE. Effects of Prednisone and Plasma Exchange on Cognitive Impairment in Hashimoto's Encephalopathy. *Neurology* 2005 Jan 11;64(1):165-6.
 47. Porntadavity S, **Nath A**, Prachayasittikul V, Cota-Gomez A, Flores SC, St Clair DK. Different roles of Sp family members in HIV-1 Tat-mediated manganese superoxide dismutase suppression in hepatocellular carcinoma cells. *DNA Cell Biol*. 2005 May;24(5):299-310.
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- 2004**
50. **Nath A**, Berger J. HIV Dementia. *Curr Treat Options Neurol*. 2004 Mar;6(2):139-151
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52. Avison MJ, **Nath A**, Greene-Avison R, Schmitt FA, Greenberg RN, Berger JR. Neuroimaging correlates of HIV-associated BBB compromise. *J Neuroimmunol*. 2004 Dec;157(1-2):140-6.
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54. Miagkov A, Turchan J, **Nath A**, Drachman DB. Gene transfer of baculoviral p35 by adenoviral vector protects cerebral neurons from apoptosis. *DNA and Cell Biology*. 2004 Aug; 23 (8): 495-501.
55. Haughey NJ, Cutler RG, Tamara A, McArthur JC, Vargas DL, Pardo CA, Turchan J, **Nath A**, Mattson MP. Perturbation of sphingolipid metabolism and ceramide production in HIV-dementia. *Ann Neurol*. 2004 Feb;55(2):257-67.
56. Self RL, Mulholland PJ, **Nath A**, Harris BR, Prendergast MA. The human immunodeficiency virus type-1 transcription factor Tat produces elevations in intracellular Ca²⁺ that require function of an N-methyl-D-aspartate receptor polyamine-sensitive site. *Brain Res*. 2004 Jan 2;995(1):39-45.
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60. Singh IN, Goody RJ, Dean C, Ahmad NM, Lutz SE, Knapp PE, **Nath A**, Hauser KF. Apoptotic death of striatal neurons induced by HIV-1 Tat and gp120: differential involvement of caspase-3 and endonuclease G. *J Neurovirol* 2004; 10: 141-151.
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66. Flora G, Lee YW, **Nath A**, Hennig B, Maragos W, Toborek M*. Methamphetamine potentiates HIV-1 Tat protein mediated activation of redox-sensitive pathways in discrete regions of the brain. *Exp Neurol* 179:60-70; 2003

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71. **Nath A**. Book review on "The Neurology of AIDS". (Eds.) HE Gendelman, SA Lipton, L Epstein, and S Swindells. J NeuroVirology 4: 469-470; 1998.

1997

72. #Berger JR*, **Nath A**. HIV dementia and the basal ganglia. InterVirology,40:122-131; 1997

73. **Nath A***, Geiger JD. Implications of Tat-Induced Neurotoxicity Towards Pathogenesis of HIV-1 Encephalopathy. In: Adaptation Biology and Medicine. (Eds.) Sharma BK, Takeda N, Singal PK. Narosa Publishing House. 187-192; 1997.

1996-86

74. #**Nath A***, Power C, Geiger JD. Interactions of HIV-1 with Astrocytes. In: Perspectives in Drug Discovery and Design. (Eds.) Fantini J, Sabatier J-M, Leiden, The Netherlands 5:3042, 1996.
75. **Nath A**. Book review on "HIV, AIDS and the Brain". (Ed.) R. Price. Canadian Journal of Infectious Diseases 1994
76. **Nath A***, Ma M. Infection of Human Fetal Astrocytes with HIV. In: Technical advances in AIDS research in the human nervous system. (Ed.) Major EO; Plenum Publishing Corporation, New York, NY. 1994
77. **Nath A**, Jankovic J*. Motor disorders in patients with human immunodeficiency virus infection. In: Progress in AIDS Pathology. (Eds.) Rotterdam H and Sommers SC; Field & Wood Medical Publishers, Inc. New York, NY. 159-166, 1989
78. **Nath A**. Irradiation as an immune suppressive agent and long term side effects. (Position paper for the National Multiple Sclerosis Society (U.S.A.) 1-37,1986

XX. ABSTRACTS

Since year 2000, I have authored nearly 20 abstracts/yr. Below is a partial list.

1. **Nath A**, Li, W, Haughey N, Anderson C, McArthur J, Sacktor N. Oxidative and Nitrosative Stress Markers in CSF Correlate with Active HIV dementia. American Academy of Neurology (Scientific program highlights) 2006
2. Rumbaugh J, Rothstein J, **Nath A**. Ceftriaxone protects against the neurotoxicity of human immunodeficiency virus (HIV) proteins American Academy of Neurology (Scientific program highlights) 2006
3. Li W, Gundry R, Malpica-Llanos T, Esposito D, Burgess D, Barnes A, Creighton J, Sacktor N, McArthur J, Cotter R, **Nath A**. Nitration of Prostaglandin D2 Synthase in CSF of HIV patients with active dementia or history of IV drug use. Conference on

Retrovirology and Opportunistic Infections (Young investigator award to Wenxue Li)
2006

4. Galey D, Woodward J, **Nath A**. Cytokine and chemokine induction by HIV proteins and HIV infection in astrocytes. 8th Conference on Retroviruses and Opportunistic Infections. Received travel grant from conference. 2002
5. *. Turchan, C. Gairola, G. Schifitto, JR Berger, H. Elford, **A. Nath**. Reversal of neuronal mitochondrial dysfunction caused by CSF from HIV demented patients with novel antioxidants. American Academy of Neurology [S63.004] (selected for press release and for Scientific Program Highlights Plenary Session). (www.healthscout.com). 2002
6. J Turchan, D. Galey, K. Hauser, C. Anderson, **A. Nath**.. Role of opioid receptors in mediating neurotoxicity caused by morphine and HIV proteins. Neuroimmune circuits and Infectious disease. (received travel grant from conference). 2002
7. Turchan JT, Anderson C, Hauser KF, Liu Y, Booze RM, Maragos W, Wise P, **Nath A**. Mechanisms of estrogen protection against HIV proteins, methamphetamine and cocaine neurotoxicity. Society for Neuroscience 2000, Abstract #5890 (Platform; selected for press release). 2000
8. **Nath A**. Viral Proteins and Their Roles in HIV-Related Neuropathogenesis. Neuroscience of HIV Infection 2000, Journal of NeuroVirology: S8, 241.(plenary lecture), 2000
9. Haughey N, **Nath A**, Geiger JD. HIV-1 regulatory protein Tat and Tat fragments induced calcium in human brain cells. Fifth Annual Conference on HIV/AIDS Research, Winnipeg, Manitoba, 1995. Canadian Journal Infectious Diseases 1995; 6(Suppl B) Abstract # 109 (received first prize), 1995

INVENTIONS, PATENTS, COPYRIGHTS

Provisional US Patents:

Tat as an immunogen, filed 4/2002.

Diosgenin for Treatment of Neurodegenerative Diseases	(JHU Ref.: 4382); 2004
Role of Kv Channels in Neuroregeneration and Protection	(JHU Ref.: 4986); 2006
Role of Lominoid compounds as neuroprotective agents	(JHU Ref: 5038); 2006
Tat ELISA	(JHU Ref: 5087); 2006

CLINICAL STUDIES

1. Co-investigator. A double blind multicenter trial to assess the efficacy of Cyclosporine A in chronic progressive Multiple Sclerosis 1986-1988. Sandoz Pharmaceuticals. Principal Investigator: J.S. Wolinsky
2. Co-investigator. A double blind multicenter trial to access the efficacy of Sulfasalazine in the treatment of Multiple Sclerosis. 1993-96. National Multiple Sclerosis Society. Principal Investigator: J. Noseworthy.
3. Co-investigator. Canadian genetic susceptibility study in Multiple Sclerosis. 1994-1997. National Multiple Sclerosis Society. Principal Investigators: G. Ebers and D. Sadavonick.
4. Co-investigator. Incidence of Alzheimer's disease in the Cree population. 1990-1991. National Institutes of Health. Principal investigator. H. Hendrie
5. Co-investigator. A randomized, double-blind, placebo-controlled, phase 3 study of Roquinimex (Linomide) in relapsing remitting Multiple Sclerosis. (1996-97) Pharmacia. Study director: Carlota Johnsen; Medical Director: Per Gjørstup.
6. Co-investigator. A phase III randomised double blind multicentre study to evaluate the safety and efficacy of 1592U89 in HIV-1 infected patients with AIDS dementia complex. (1996-97) Glaxo-Wellcome Inc.
7. Co-investigator. TNFR-IgG in Multiple sclerosis. (1996-97). Hoffman-La Roche Ltd.

8. AIDS Clinical Trials Group: Role of memantine in the treatment of HIV dementia (#301) (1997-2000)
9. AIDS Clinical Trials Group: Role of Cidofovir in the treatment of progressive multifocal leukoencephalopathy (#363). (1998-2000)
10. High dose cyclophosphamide in treatment of Multiple Sclerosis. (2003-present)
11. AIDS Clinical Trials Group. Role of minocycline in treatment of HIV dementia (2006-present)

EXTRAMURAL SPONSORSHIP

CURRENT RESEARCH FUNDING (Direct costs only)

P01 MH 70056 Nath (Program Director) 09/08/03-06/30/07 2.88 calendar month
 NIH/NIMH/NIAID \$899,293

Immunophilin ligands for HIV dementia and peripheral neuropathy

The major goals of this program project are to determine the underlying mechanisms of neuroprotection and to conduct a phase 2 clinical trial using select immunophilin ligands.

P01MH070306 (Clements)/Project 5 (Nath) 12/01/2003-11/30/2008 1.92 calendar month
 NIH \$846,080

CNS and Peripheral Viral Reservoirs in an SIV Model of HIV HAART

To determine the mechanism of regulations of HIV affection in Astrocytes

NIH/University of Puerto Rico (Wonja) 09/01/04-06/30/09 .48 calendar month
 Pathophysiology of HIV Dementia in Women \$45,871

Aims of this study are to determine the association between HIV dementia and a) drug abuse, b) gonadal hormone dysfunction, and c) oxidative stress.

R01NS039253 NINDS (Nath) 07/01/99-05/31/10 2.40 calendar month*
 Role of HIV Tat Protein in Pathogenesis of HIV Dementia \$231,250

Propose to determine HIV clade specific differences in Tat effects on brain cells.

R01AI058842-01A2 (Mumper) 04/15/05-12/31/09 .48 calendar month
 NIH/University of Kentucky \$44,031

Nanoparticle HIV Protein Vaccines for Cellular Responses

Purpose of this project is to develop the use of nanoparticles for vaccination against the HIV gag and Tat proteins

TR 3760-A-3 (PI: Calabresi) 10/01/05 – 9/30/10 .24 calendar month
 National MS Society \$846,080

Mechanisms of neurodegeneration and strategies for neuroprotection in MS

The major goals of this grant are to allow full scientific projects to proceed using the models developed in the NMSS Center Grant, and to support development of MRI and OCT as outcome measures for pilot neuroprotective clinical trials in MS.

NINDS (McArthur P.I.) Co/PI 04/01/06-03/31/11 .96 calendar month
 P30 MH075673-01 \$938,993

Center for novel therapeutics for HIV-associated cognitive disorders

The major goal of this Clinical Outcomes Core is to validate new outcome measures for epidemiological research and treatment trials.

Neuroscience (MD832) (4/yr) Med III
Immunity Infection and Disease (MI822/MD822)(4/yr) Med II

Physician Assistants

Lecture on Neuro-AIDS (1998)

Graduate Students

Aging of the Nervous System (ANA 710, GRN 710, PGY 710, PHA710) (1/yr)

American Academy of Neurology

NeuroAIDS Course; lecture on HIV dementia (2000)

Unusual manifestations of HIV infection (2001, 2002)

JOHNS HOPKINS UNIVERSITY (2002-PRESENT)

Medical students

Clinical skills in Neurology (6/yr)

Seminars/ Grand rounds

Neurology grand rounds 2002, 2003

Neuroimmunology seminar series 2002

Neurovirology/immunology journal club (organizer; held weekly) 2002-2004

Neuro-AIDS discussion group (organizer; held monthly; present 2/yr)

Graduate students

Advanced Virology Course (HIV neuropathogenesis) 2005; Course director 2007

Neuroimmunology Course (Neuroimmunopathogenesis of HIV infection) 2004

(Role of viral proteins in HIV neuropathogenesis) 2006

Pathobiology Graduate Program Retreat: Immune reconstitution syndrome, 2006

American Academy of Neurology

Neuroinfectious diseases Course (lecture on HIV dementia) 2005, 2007

Neurological complications of medical disease Course (HIV manifestations) 2006,

Marine Biological Laboratories, Woodshole

Neuroimmunology Course (Neuropathogenesis of HIV infection), 2005

FASEB Neuroimmunology Course

Neuropathogenesis of HIV infection, 2006

MENTORING

Undergraduate Students

1. Laura Robins 1991; University of Manitoba
2. Vincent Hartloper 1991-92; University of Manitoba, awarded scholarship through Career Start Program, Canada
3. Phillip Cheng 1992; University of Manitoba, awarded scholarship through Challenge Program, Manitoba
4. Preet Sandhu 1993-94; University of Manitoba, awarded scholarship through Career Start Program, Canada
5. Mona Singal 1996-97; University of Manitoba, awarded internship by the Pediatric AIDS Foundation.
6. Cathy Scott 1997; University of Manitoba
7. Latanga M Watkins 1998; University of Kentucky, awarded National Medical Fellowship
8. Traci Hendrick 1998
9. Jeffery Tuttle 1999
10. Susan Roth 2000-2002; University of Kentucky, awarded Student Internship by Pediatric AIDS Foundation
11. Rob Slevin 2000, 2001; University of Kentucky, awarded Student Internship by Pediatric AIDS Foundation
12. Ryan Phillip 2001; University of Kentucky

13. Emily Capirello 2003-05 Johns Hopkins University.
14. David Wheeler 2005-06 Johns Hopkins University
15. Tanya Malpica 2005-07 Johns Hopkins University

B.Sc Med. Students

1. Duane Hartley 1992-93. Received scholarship through Thorlakson Foundation. Expression of adhesion molecules and components of extracellular matrix in HIV encephalopathy and Multiple Sclerosis. Completed residency in Internal Medicine
2. Karen Psooy 1993-94. Received scholarship through Health Sciences Centre Foundation. The Tat protein of Human immunodeficiency virus is toxic to human fetal neurons. Received awards for the best oral presentation and the Neuroscience award. Completed residency in Urology
3. Kendiss Olafson 1994-95. Received MMSF Jack Wilt Memorial Scholarship award for achievement on her project on the localization of Tat in rat brain *in vivo*.
4. Bodo Knudsen 1995-96. Electrophysiological responses to HIV Tat protein. Received Neuroscience award. Completed residency in Urology.

Graduate Students

1. Anestis Tsiourantanis 1992-1994. Effect of HIV-1 envelope protein gp120 on intracellular calcium in pre-synaptic terminals.
2. Mehui Ma 1992-97. Ph.D. awarded 1997 Characterization of binding molecules for gp120 and Tat in human brain.
Received graduate studentship from Manitoba Health Research Foundation 1993-96 and graduate studentship from the National Health Research Development Program of Canada 1996-1997. Completed residency in Neurology, University of Kentucky.
3. Peiqin Chen 1994-97. M.Sc. awarded 1997. Cytokine induction by HIV-Tat protein in brain cells. Currently, Research Scientist, DNA sequencing facility, University of Pennsylvania.
4. Norman Haughey 1994-1999. Ph.D. awarded 1999. Co-supervised with Dr. J.D. Geiger. Modulation of intraneural calcium in response to HIV-Tat. Awarded best prize for poster presentation at the Fifth Annual Conference on HIV/AIDS Research, Winnipeg, Manitoba, 1995. Currently, Assistant Professor, Johns Hopkins University.
5. Melina Jones 1995-2002 PhD awarded 2002. Awarded University of Manitoba studentship 1995-97 and University of Kentucky studentship 2000-01. Currently, Research Associate, Department of Neurology, Johns Hopkins University.
6. David Galey 1999-2004 PhD awarded 2004. Received studentship from Neuroscience training grant, University of Kentucky
7. Barry Robinson 2000-2005. PhD awarded 2005. Received NINDS minority studentship.
8. Lauren Macusch: 2006: graduate student in Neuroscience, JHU, did 3month rotation.
9. Tory Johnson: 2006: graduate student in Pathobiology Program, JHU, did 3 month rotation
10. Valerie Toodle: 2007: graduate std in Pathobiology Program, JHU, did 3 month rotation

Post-doctoral Fellows

1. Monica Furer M.D. 1991-92. Adhesion and emperipolesis of lymphocytes by human astrocytes. Awarded first prize at Canadian Surgical Society Meeting 1992. Currently, Neurosurgeon, Calgary.
2. Micheal Silverman M.D., F.R.C.P.C. 1991-92. Autoantibodies to galactocerebroside in HIV patients. Awarded MRC Centennial scholarship. Currently Infectious Disease Consultant in Toronto.
3. Jankai Liu MD, MSc. 1995-97. Development of recombinant antibodies to HIV-Tat using the phage display system. Currently, Associate Professor, Bethune University, China.

4. Jianguo Cheng MD, PhD. 1995-96. Electrophysiology of HIV-Tat protein. Currently, Assistant Professor, Department of Neurosurgery, University of Louisville.
5. Clark Holden PhD 1995-1998. Effect of HIV-gp120 on intracellular calcium in brain cells. Awarded Manitoba Health Research Council fellowship 1995-97 and Medical Research Council fellowship 1997-1999. Co-supervised with Dr. Jonathan Geiger, University of Manitoba.
6. Gilian Henry PhD. 1995-98. NMR structure of Tat protein. Co-supervised with Dr. Joseph O'Neil, University of Manitoba. Currently, Associate Professor, University of Manitoba.
7. Jadwiga Turchan PhD. 2000-2004. Neurotoxicity of HIV proteins and drugs of abuse. Currently, Research Associate, Department of Anatomy and Neurobiology, University of Kentucky, Lexington, KY
8. Katrin Hahn MD, 2003-2005. Pathogenesis of HIV mediated peripheral neuropathy. Received travel award from Conference on Retroviruses and Opportunistic Infections, 2005.
9. David Galey PhD 2005-2006. Interactions of HIV-tat and promyelocytic leukemia protein. Received travel award from Conference on Retroviruses and Opportunistic Infections, 2005.
10. David Wang PhD 2004-present. Neurotoxic properties of granzyme B. Received travel award from Society for Neuroimmune Pharmacology.
11. Guanhan Li PhD 2005-present. Sequencing of tat from HIV infected brain tissue.
12. Nicoline Schiess MD, 2006-present. Received fellowship award from National Multiple Sclerosis Society.

Residents

1. John Embil, Internal Medicine: HIV infection and CNS lymphomas. Currently, Assistant Professor, University of Manitoba
2. Seyed Mirsattari, Neurology: HIV infection and headaches; HIV infection and Parkinsonism; HIV infection and Paroxysmal dyskinesias. Currently, Post doctoral fellow, University of Ontario.
3. Micheal Dobbs, Neurology. Role of splenectomy in management of PML. Currently, Assistant Professor, Department of Neurology, University of Louisville, Louisville, KY.
4. Jeffrey Rumbaugh, 2003-04 Neurology. Interactions of MMPs and viral proteins. Received travel award from American Neurological Association, and first prize for poster presentation at Society Neuroimmune Pharmacology Meeting. Currently, Assistant Professor, Department of Neurology, Johns Hopkins University
5. David Reidel, 2004-5. Internal Medicine. Dementia and peripheral neuropathy in HIV-clade C infected populations. Currently, Fellow, Infectious Diseases
6. Ryan Miller, 2004- Fellow in Endocrinology. Effect of HIV proteins on gonadal hormone regulation
7. Arun Venkatesan 2005-06. Effects of methamphetamine and HIV on neural stem cells

Technicians

1. Carol Anderson 1993-present
2. Vincent Hartloper 1992-93
3. Tanis Benedictson 1995-97
4. Andrew 1996-97
5. Phillip Ray 2000-present
6. Rollie Reed 2001-present
7. Elizabeth Hall 2001-2002
8. Robert Slevin 2003-4
9. Stacey Fredrick 2003-2004.

Junior Faculty

1. Christopher Power MD. 1995-97. Currently, Professor, Neurology, University of Calgary
2. William Maragos MD, PhD. 1998-2000. Currently, Associate Professor, Neurology, University of Kentucky
3. Annadora Bruce-Keller, PhD 1999-2002. Currently, Assistant Professor, Anatomy and Neurobiology, University of Kentucky
4. Valerie Wojna, MD, 1999-03. Currently, Professor, Neurology, University of Puerto Rico
5. Ashok Chauhan PhD, 2000-present. Currently, Assistant Professor, Neurology, Johns Hopkins University.
6. Carlos Pardo MD, 2002-4. Assistant Professor, Neurology, Johns Hopkins University.
7. Sanjay Keswani MD, 2002-4. Assistant Professor, Neurology, Johns Hopkins University
8. Jeffrey Rumbaugh, 2004-present Assistant Professor, Neurology. Interactions of MMPs and viral proteins. Received Weir Mitchel award from American Academy of Neurology 2005 and K08 from NIMH, NIH.
9. Wenzou Li, 2004-present. Research Associate, Neurology. Interactions of Tat and NMDA receptor, Received travel award from American Society for Neurochemistry 2005.
10. Arun Venkatesan 2006-present. Instructor, Neurology. Effects of methamphetamine and HIV on neural stem cells. Received K08 from NIDA, NIH.

Visiting Professors

1. Zenzhong Li, (2001-2) Vice Chair, Department of Anatomy, Shandong University, China

EDITORIAL BOARDS

1999-2005: Editorial board, Journal of Neurovirology

2006-present: Senior Associate editor, Journal of Neurovirology

2000- Guest Editor, Journal of Psychopharmacology

2001-2003: Section Editor: Current Treatment Options in Infectious Diseases (Nervous system Infections). (Vol 3, Nov 2001; Vol 4, Nov 2002).

2003- Co-Editor, Book on "Clinical Neurovirology" Publisher, Marcel Dekker.

2003-2006: Editorial Board, "Current HIV Research" Publisher, Bentham Science"

2004-International review team, Kuwait Medical Journal

AD HOC REVIEWER (*>5 manuscripts/yr)

AIDS, American Journal of Pathology, *Annals of Neurology, Archives of Neurology, Brain Research, Canadian Journal of Neurological Sciences, European Journal of Neuroscience, Glia, Journal of Biological Chemistry, Journal of Biological Psychiatry, Journal of Immunology, Journal of Virology, Journal of Neuroimmunology, Journal of Neuropathology and Experimental Neurology, Journal of Neuroscience, *Journal of Neurovirology, Molecular and Cellular Biochemistry, Movement Disorders, *Neurology, Neuroscience, Proceedings of National Academy of Sciences, USA,

ORGANIZATIONAL ACTIVITIES

Graduate Student Committees

1. Paul Hazelton University of Manitoba; Thesis: Temperature Sensitive Reassortants of Reovirus; Supervisor: Kevin Coombs (1991-97)
2. Chen Yi University of Manitoba; Thesis: Drug resistant mutations of the reverse transcriptase gene of HIV in patients with HIV dementia; Supervisor: Christopher Power (1995-97)
3. Stephen Kerr University of New South Wales, Australia; Thesis: The importance of excitotoxin quinolinic acid in the pathogenesis of AIDS dementia complex (external examiner). Supervisor: Bruce Brew. (1997)

4. Ting Li University of Kentucky; Supervisor: Jiayou Zhang (1998-2002)
5. Arvind Bansal, University of Kentucky; Supervisor: Rosemarie Booze (1999-2000)
6. Shane Rau, University of Kentucky, Supervisor: Phyllis Wise (2000-2002)
7. Chava Pocernick, University of Kentucky, Supervisor: Alan Butterfeild (2000-2002)
8. Adrian, University of Kentucky, Supervisor: Glen Telling (2000-2001)
9. Terry Blake Ball, University of Manitoba, Supervisor: Frank Plummer, External examiner (2001)
10. Jaroslaw Kanski, University of Kentucky, Supervisor: Alan Butterfield, External examiner (2001)
11. Micheal Jernigan, University of Kentucky, Supervisor: James Geddes (2001-2002)
12. Emily Overholser, Johns Hopkins University, Supervisor; Janice Clements (2003-4)
13. Kris Helke, Johns Hopkins University, Supervisor; Joseph Mankowski (2003-7)
14. Karen Yao, Johns Hopkins University and NIH, Supervisor; Steve Jacobson (2005)
15. Anna Kvanvig, Dept Neuroscience, Johns Hopkins University, Supervisor: Paul Worley (2006)
16. Courtney Rory Goodwin, MD, PhD program, Dept of Neuroscience, Johns Hopkins University, Supervisor: John Latera (2006)
17. Justyna, Dept of Comparative Medicine, JHU (2005-07)

University Committees

- 1991-1993. Medical Students admission committee, University of Manitoba
 1992-1997. Graduate student committee, Department of Medical Microbiology, University of Manitoba.
 1996 University of Manitoba Medical School Accreditation subcommittee on Governance and Administration
 1997-2002. Medical Students admission committee, University of Kentucky
 1997-2002. Neurology Residents selection committee, University of Kentucky
 1998-2000. Faculty Search Committee, Department of Microbiology and Immunology, University of Kentucky, Lexington, KY
 1999. Search Committee for Director of Head and Spinal Cord Injury Research Group, University of Kentucky.
 2000-2002: MD, PhD Student Advisory Committee, University of Kentucky
 2001. New Economy development committee, University of Kentucky
 2001. Futures Task Force, University of Kentucky
 2001. Search committee for Chair, Department of Physiology, University of Kentucky
 2003. Faculty search committee, NINDS, NIH.
 2005-present: Promotion and Tenure committee, Department of Neurology, Johns Hopkins University

State/ Provincial Committees

- 1994-95 Consultant, Economic Innovation and Technology Council Health Research Task Group of Manitoba
 1998-2003. Member, Professional advisory committee, National Multiple Sclerosis Society, Kentucky Chapter.

National Committees/Conferences

- 1992 Co-Chair, Neurobiology session, Canadian Congress of Neurological Sciences
 1994-95 Co-Chair, "Infection and AIDS" platform session of the American Academy of Neurology
 1995 Co-Chair of the Basic Science Track of the Canadian Association for HIV Research Meeting
 1996 Co-chair, Infection and AIDS II platform session of the American Academy of Neurology

1998-present. Neurology Subcommittee of the Complications of HIV Disease Research Agenda Committee, AIDS Clinical Trials Group
1999 Chair, Session on Signals for neuronal/glial injury in HIV infection, NINDS AIDS Program Panel
1999 Chair, Basic science discussion group of NIDA workshop on "Metabolic disorders in the pathogenesis of nervous system damage in HIV infected drug users"
1999-present; Internal Advisory Committee, SNRP program, University of Puerto Rico.
2000: "HIV and the peripheral nervous system" workshop, NINDS, NIH.
2001: Neuro-AIDS Planning Panel, NINDS, NIH
2002, 2004, 2007: American Academy of Neurology (Abstract reviewer for CNS Infections/ AIDS/ Prion Disease Session).
2002: Brain banking workshop, NIDA, NIH
2003: Focus group for evaluation of Modular Grant Application process, NIH
2005-present: Federal Drug Administration (FDA), Member, Immunology advisory group.
2005: NINDS Workshop: Selective adhesion molecule inhibitors and CNS disease (http://www.ninds.nih.gov/news_and_events/proceedings/selective_adhesion_2005.htm)
2005: Chair, session on Inflammation and pathogenesis in the Brain; Workshop on Neurobiology of HIV, Psychiatric and Substance Abuse Comorbidity, NIDA and NIMH
2006-present: NIDA External Scientific AIDS Workgroup (meets twice a year)
2006: Organizer, Overview of Neuro-AIDS, drug abuse and inflammation, NIDA
2006: Co-chair, HIV and Prion Disease platform session, American Academy of Neurology.
2006, 2007: Abstract reviewer (neuroimmunology), American Neurological Association meeting
2006: External advisory committee member; Program project grant, "Molecular Biology of Viral-Glial gene interactions in Brain" Temple University
2006: External Advisory committee member; Program project grant, Univ Pennsylvania
2006-09: Chair elect, Section of Neuroinfectious Diseases, American Academy of Neurology
2007: Elected member, Translational Research and Drug Development Committee, AIDS Clinical Trials Group

International Committees/Conferences

1994 Chair of the Basic Science session of the Satellite Symposium of The Tenth International Meeting on AIDS, on "Neuroscience of HIV Infection".
1995-98: Membership committee, International Conference on Adaptive Medicine.
1996-2002: Organizing Committee, International Conference on Neuroscience of HIV Infection
1996-2004. Scientific committee, International AIDS Conference
2000-2006: Finance committee, Society on Neuroimmune Pharmacology
2001-02. International Advisory Committee, 4th International Symposium on NeuroVirology.
2003: Chair, Workshop on Neuro-AIDS, 5th International Symposium on NeuroVirology.
2005: Chair, Session IV, International Workshop on JC Virus/PML and Multiple Sclerosis, Philadelphia
2006: Chair and abstract discussant, Neuro-AIDS scientific session, Conference on Retroviruses and Opportunistic Infections, Denver.
2007: Chair, Session on Mechanisms of Neuropathogenesis. Conference on HIV infection and the Central Nervous System: Developed and Resource-Limited Settings, Venice, Italy.
2007: Organization committee: 8th International Conference of Neurovirology. San Diego, CA

MEMBERSHIP IN PROFESSIONAL SOCIETIES

1983-present: American Academy of Neurology (Fellow since 1996).
1994-present: American Association for Advancement of Science
1995-present: Society for Neuroscience
1998-present: International Society for NeuroVirology (Founding Member)

1999-present: American Neurological Association (Elected)
2000-present: Society on Neuroimmune Pharmacology (Charter member and member of Finance Committee)
2001-present: Section on Neuro-infectious Diseases, American Academy of Neurology (Chair elect)
2002-present: American Society for Virology (life member)
2002-present: American Society for Microbiology
2003-present: American Society for Biochemistry and Molecular Biology

GRANT REVIEW COMMITTEES

1. Natural Sciences and Engineering Research Council of Canada; External reviewer 1991, 1996.
2. Health Science Centre Research Foundation, Winnipeg.
Internal reviewer 1991-93.
External reviewer 1994, 2003, 2004.
3. National Health Research Development Program, Canada.
External reviewer 1993-94.
Internal reviewer, AIDS panel 1996.
4. Manitoba Health Research Council.
Internal reviewer 1994-97,
Member Overview Committee 1995.
5. British Columbia Health Research Foundation; External reviewer 1995.
6. Alzheimer Society of Canada; External reviewer 1996.
7. Heart and Stroke Foundation, Canada; External reviewer 1996
8. Medical Research Council of Canada; External reviewer 1996-98.
9. Muscular Dystrophy Association; External reviewer 1996
10. Canadian Foundation for AIDS Research 1998
11. Department of Defense, Panel on Prion Diseases 2002.
12. Center for AIDS Research, University of Kentucky, Chair, Developmental grants, 2003
13. Canadian Institute for Health Research, Virology and Viral pathogenesis panel, 2005
14. National Multiple Sclerosis Society, Panel A, regular member, 2005-07.
15. National Institutes of Health,
NIAID
Adhoc reviewer for National Cooperative Drug Discovery Groups for Treatment of HIV Infection, 1996.
Special Emphasis Panels for Centers for AIDS Research, 1997-99.
NIDA
Special Emphasis Panel ZDA1-RXL-E-19. 1998
Chair, Special Emphasis Panel 2004
NINDS
Special Emphasis Panel ZNS1 SRB P(01) 1998
Chair, Special Emphasis Panel ZNS1 SRB-A 02. 2002
Special Emphasis Panel (brain banks) 2003
Chair, Special Emphasis Panel ZNS1 SR-A (01) (Neuro-AIDS studies), 2003
NIMH
Special Emphasis Panel (non-human primates for HIV/CNS disease) ZMH1-BRB-T-01; 1999
Training grant panel 2001, 2003, 2004
Chair, Special emphasis panel (molecular makers for HIV dementia),2004
Special emphasis panel (R13 grants), 2007
AARR-2 (adhoc member) 1999, 2000

AARR-6 (ad hoc member) 1999-2001
AARR-5 (regular member) 2000-2004 (renamed NAED in 2003); Chair, special emphasis panel 2002.
NIA Site visit team 2001
NIAAA Special emphasis panel ZAA1CC(10) 2003.
NAED Special emphasis panel, March, 2006

RECOGNITION

ACADEMIC AWARDS AND DISTINCTIONS

1985-1986 Chief Resident, Department of Neurology, University of Texas Health Science Center, Houston, Texas.
1986 Texas Neurological Society: For excellence in Neurological Research.
1988-1990 Scholarship, Fogarty International Center, N.I.H. Bethesda, Maryland.
1990-1993 Scholarship, Health Science Centre Research Foundation, Winnipeg, Manitoba. (1992-93 declined)
1992-1995 Scholarship and establishment grant, Manitoba Health Research Council (1993-95 declined)
1993-1998 Scholarship, National Health and Research Development Program (1997-98 declined)
1997-2002 Scientist Award, Medical Research Council of Canada, (declined)
1999. Faculty Research Award, University of Kentucky
1999. Clinical Clerkship Teaching Award, University of Kentucky
2001-2002 Endowed Professorship, University of Kentucky (2002-5 declined)
2002 Governor's certificate of recognition for Science and Engineering award
2006-09: Chair elect, Section of Neuroinfectious Diseases, American Academy of Neurology

INVITED PRESENTATIONS

Keynote/plenary speaker

1. Nov 1995. IV World Congress of the International Society for Adaptive Medicine. Presented "Maladaptation in HIV Encephalopathy".
2. July 1996. "Role of viral proteins in mediating neurotoxicity" Neurological AIDS Research Consortium meeting, Johns Hopkins University, Baltimore, Maryland.
3. Sept 1996. "Role of Tat protein in mediating HIV dementia". Institute of Human Virology Meeting. Baltimore, Maryland.
4. Feb 1999. NINDS AIDS Program Panel, Miami, Florida. "HIV viral proteins are the ammunition that trigger AIDS dementia"
5. April 1999. HIV and the Nervous System: Emerging Issues, Washington DC. (organized by NIMH and NINDS). "Virotoxins and HIV dementia"
6. September 1999. NIDA workshop on "Metabolic disorders in the pathogenesis of nervous system damage in HIV infected drug users" Presented, "Dopaminergic and Non-dopaminergic Interactions between HIV Proteins and Drugs of abuse" and moderated basic science discussion group.
7. June 2000. Plenary lecture, "Role of Viral Proteins in HIV dementia" Neuroscience of HIV infection Conference, Edinburgh, UK
8. Jan 2001. Plenary lecture, Neuro-AIDS symposium, National Institute of Mental Health and Neurosciences, Bangalore, India.
9. June 2001. Inaugural lecture (Therapeutic approaches to HIV dementia), Division of Neurovirology and Neurodegenerative diseases, St. Boniface Research Center, Winnipeg, Manitoba

10. Mar 2002. NIH Brain Bank Workshop (Combined effects of drug abuse and HIV infection on the brain: Correlations between experimental, pathological and clinical studies).
11. Apr 2002. 3rd Pfizer symposium on "Immunopathogenesis of Infections and Inflammatory diseases of the brain" (HIV proteins in HIV neuropathogenesis).
12. Aug 2002. NIMH workshop on Progressive Multifocal Leukoencephalopathy (Lack of PML in India and Africa. Is there is biological explanation?).
13. Nov 2002. NIMH and NINDS Workshop on Viral and Host Genetics (Role of ApoE genes in HIV neuropathogenesis)
14. Dec 2003. Invited speaker. NIH workshop on Glial Inflammation in HIV dementia and other chronic neurodegenerative diseases.
15. Mar 2004. Invited speaker. Society for Neuroimmune Pharmacology
16. June 2004. Key note address. Japanese Society of Pathology (HIV neuropathogenesis)
17. June 2004. Invited speaker. NIH workshop on molecular markers for HIV dementia
18. July 2004: Invited speaker. NIDA cutting edge seminars: Animal models for Neuro-AIDS and drugs abuse.
19. Aug 2004. Invited speaker. Workshop on AIDS in India. Organized by NIH in Bangalore, India.
20. Aug 2004. Invited speaker. Rare Neuroimmunologic Disorders Symposium (Diagnostic markers in Multiple Sclerosis using Proteomics).
21. October 2004. Plenary lecture. Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Washington DC (Update on Neuropathogenesis of HIV Infection).
22. June 2005. Invited speaker. 5th Annual Conference of Specialized Centers in Neuroscience, College Park, MD (Neuropathogenesis of HIV Infection)
23. June 2005. Invited speaker. Symposium on Autoimmunity, Baltimore, MD (Interplay between T cells and neurons: The neuron is the looser)
24. June 2005. Invited speaker. American Society for Neurochemistry, Madison, WI (Neuropathology of HIV infection: Clinical overview)
25. Nov 2005. Invited speaker. World Congress of Neurology, Sydney, Australia (Neuromuscular complications of HIV infection)
26. Dec 2005. Invited speaker and session chair. Workshop on Neurobiology of HIV, Psychiatric and Substance Abuse Co-morbidity, Bethesda, MD organized by NIMH and NIDA (Effects of drugs of abuse on HIV infection)
27. March 2006. Orientation Talk: Overview of Neuro-AIDS, drug abuse and inflammation, Organized by NIDA, Rockville, MD
28. May 2006. Invited speaker; HIV Preclinical-Clinical Therapeutics Research Meeting" (Immunophilins in HIV dementia: challenges in collaborations with industry)
29. May 2006: Grass Lecture. Rocky Mountain Neuroscience Society, Aurora, Colorado. (Mechanisms of virus induced neurotoxicity: Using HIV as a model)
30. June 2006: Invited speaker, College on Problems of Drug Dependence, Scottsdale, Arizona (Effects of methamphetamine on progression of HIV dementia)
31. July 2006: Invited speaker, Symposium on Opioids, HIV and Opportunistic infections at the International Narcotics Research Conference, Minneapolis (Modulation of HIV replication and HIV induced neurotoxicity by opiates in genetically susceptible populations)
32. July 2006: Invited speaker, Rare Neuroimmunologic Disorders Symposium, Baltimore, MD (Granzyme and neurotoxicity)
33. December 2006: Invited speaker, Symposium on Neuro-AIDS, Indian Academy of Neuroscience, Silver Jubilee meeting. Lucknow, India. (HIV neuropathogenesis).
34. Feb 2007: Invited speaker, NIDA and NIMH sponsored– Asian and Pacific Islanders Work Group, Santa Monica, CA (The study of viral and host genetics in HIV neuropathogenesis in Asian populations may be a unique research opportunity)

35. Apr 2007: Invited speaker, Society of Neuroimmune Pharmacology Meeting, Salt Lake City (New insights into HIV neuropathogenesis)
36. Apr 2007: Invited speaker, HIV infection and the Central Nervous System: Developed and Resource-Limited Settings, Venice, Italy (Pathogenesis of immune reconstitution syndrome)
37. May 2007: Keynote speaker, Kentucky HIV/AIDS Conference "Building Bridges" (Neurological complications of HIV infection)
38. June 2007: Invited speaker, European Neurological Society (Neurological complications of HIV infection in the post-HAART era)

Visiting Professorships

1993

1. Dec. Presented "Infection of astrocytes with HIV and a novel HIV binding protein on astrocytes", at a special symposium organized by the National Institutes of Health on "Technical Advances in AIDS Research in the Nervous System".
2. Oct. Department of Infectious Diseases, University of Minnesota, Minneapolis. Presented, "Role of astrocytes in HIV encephalopathy"
3. 1991-94 Invited speaker. Multiple Sclerosis Society of Manitoba (Annual meetings, family support groups, community meetings in Winnipeg and rural cities in Manitoba).

1995

4. Oct. Laboratory of Molecular Medicine and Neuroscience, NINDS, NIH. Presented, "Neurotoxic properties of HIV-Tat".
5. June. Visiting professor, Faculty of Pharmacy, University of Toronto and St. Michaels Hospital, Toronto. Presented, "Excitotoxic properties of HIV-Tat"

1996

6. Jan. Visiting Professor to the Laboratory of Molecular Medicine and Neuroscience, National Institute of Neurological Disorders and Stroke, NIH, Bethesda, MD. Presented, "Neurotoxic properties of HIV-1 Tat protein".
7. Nov. Visiting professor to the Montreal Neurological Institute, Montreal, Quebec. Presented the Killam Lecture on "Pathogenesis of HIV Dementia".

1997

8. Jan. Alberta Heritage Visiting Professor to Department of Clinical Neurosciences, University of Calgary. Presented, "HIV Encephalopathy".
9. Feb. Department of Neurology, University of Toronto. Presented, "HIV Dementia"

1998

10. Jan. University of Cincinnati. "HIV dementia".
11. April. NINDS, NIH, Bethesda, MD. "Brain as a reservoir and target of HIV infection".
12. June. Alzheimer's Disease Research Center, University of Kentucky. "Molecular basis of HIV dementia".

1999

13. May. National Teleconference for the Kentucky-Indiana Chapter of the National Multiple Sclerosis Society.
14. June. MS101: Multiple sclerosis awareness weekend, Kentucky-Indiana Chapter of the National Multiple Sclerosis Society.
15. September. Department of Physiology, University of Kentucky "Physiological basis of HIV dementia"
16. October. Visiting Prof University of Indiana
17. November. Visiting Prof Johns Hopkins University, Baltimore MD
18. November. NINDS Neuro-AIDS workshop, Baltimore, MD
19. December. NIDA – Asian Pacific Island Work Group, Washington DC
20. December. Neuroscience 2000 and beyond, Gwalior, India

2000

21. March. Visiting Prof. Department of Physiology, Emory University, Atlanta, GA
22. May. Visiting Prof. Center for Neurovirology and Neurodegenerative diseases, University of Nebraska, Omaha, NB
23. Aug. Invited lecture, National Medical Society Meeting, Washington DC
24. Sept. Research Update, MS Society, KY
25. Nov. Visiting Prof. Department of Microbiology, University of Kansas

2001

26. 34. Feb. Workshop on The biology of JC virus and PML. Sponsored by NINDS and Neurological AIDS Research Consortium. Chicago, IL
27. Feb, July. Planning Workshop to establish NINDS International NeuroAIDS Working group, NINDS, Bethesda, MD
28. March. Invited Lecture, Conference on Neuroimmune Circuits and Infectious Diseases. Atlanta, GA
29. June. Visiting Prof, Hennepin County Medical Center, Minneapolis, MN
30. Nov. Visiting Prof, University of Rochester, Rochester, NY

2002

31. Feb. NINDS grand rounds (Therapeutic approaches to HIV dementia: Lessons from pathogenesis)
32. Dec. Visiting Prof, Dept of Pharmacology, Drexel University, Philadelphia

2003

33. May. Visiting Prof, Education Day, Wilford Hall Medical Center, Lackland Air force Base, TX
33. June. Invited lecture, Neuro-AIDS symposium, Annual meeting of College on Problems of Drug Dependence, Bal Harbor, Florida
34. Nov. Invited lecture, HIV and methamphetamine in pathogenesis of dementia, National Institutes of Drug Abuse, Baltimore, MD.
35. Nov. Visiting Prof, University of Buffalo, NY (Opiates in HIV neuropathogenesis).
36. Dec. Endocrinology grand rounds. Johns Hopkins University. Role of estrogen in HIV neuropathogenesis.

2004

37. Feb. Visiting Prof, Department of Chemistry, University of Kentucky, Lexington, KY. Role of oxidative stress in HIV neuropathogenesis.
38. April. Visiting Prof, Department of Internal Medicine, University of Manitoba, Winnipeg, Canada.

2005

39. June. Grand Rounds Speaker, Department of Neurology, University of Texas Health Sciences Center, San Antonio, TX (Novel Diagnostic and therapeutic approaches in Multiple Sclerosis)
40. Nov. Visiting Prof, Burnet Institute, Melbourne, Australia
41. Dec. Visiting Prof and Grand Rounds Speaker, Department of Neurology, University of Miami, Miami, FL.

2006

42. Feb. Visiting Prof, Research Day Seminar, American University of Antigua, St. Johns, Antigua (Neuropathogenesis of HIV infection)
43. March. Visiting Prof, Killam Lecture. Montreal Neurological Institute, Montreal, Quebec (Interplay of T cells and neurons: T cell is the winner)
44. May. Grand Rounds Speaker, Department of Neurology, University of Colorado, Denver, (Neuropathogenesis of HIV infection).
45. June. Visiting Prof and Grand Rounds Speaker, Department of Neurology, Mayo Clinic, Rochester, MN (Neuropathogenesis of HIV infection)

2007

46. February. Grand Rounds Speaker, Department of Neurology, New York University, New York, NY. (Evolution of neurological manifestations of HIV infection)
47. May. Visiting Prof, CFAR and Department of Microbiology and Immunology, Albert Einstein University, New York. (Role of viral proteins in HIV neuropathogenesis)