

## **Department of Neuroscience Research, Cores, and NeuroAIDS Faculty**

The Department of Neuroscience at Temple University School of Medicine focuses on four interdisciplinary research areas, including CNS infections, neuroinflammation, neurodegeneration, and neurooncology. A broad range of molecular and cellular approaches are employed using in vitro cell culture systems and in vivo experimental animal models which are developed by our team. In parallel, we evaluate relevant clinical samples provided by our collaborators at Temple University Hospitals and other facilities. All of our research programs are transformative and aimed at understanding the molecular events involved in the development of neurological disorders including Alzheimer's disease, disorders associated with viral infection including HIV- and JCV-induced neural injury, demyelinating disorders including multiple sclerosis, and pediatric and adult brain tumors such as medulloblastoma and glioblastoma. Our goal is to utilize the laboratory findings for the development of biomarkers for early diagnosis, and safer and more effective therapeutic molecules toward the above-noted neurologic disorders.

Core resources in the department are supported in part by the Comprehensive NeuroAIDS Center (CNAC), an NIH-funded P30 Center Core whose mission is to improve and extend public health impact of bench-to-clinic research associated with HIV-induced neurological diseases and cognitive disorders by providing services to the scientific community and fostering translational collaborative efforts for worldwide NeuroAIDS research. The CNAC provides services in cell culture and neurotropic viruses, animal model development and behavioral testing, proteomic biomarker discovery, as well as expertise and consultation in neuroscience and neuropathology. CNAC presents an ideal clinical platform (the Temple Comprehensive HIV Program) for translational medicine, supplying a large patient population for investigating mechanisms of HIV-1 induced neurological disease. In addition to offering seed funding for innovative pilot studies, CNAC offers mentoring opportunities for scientists and clinical investigators as well as advanced training programs for established researchers in the field of HIV and AIDS.

NeuroAIDS investigators in the Department of Neuroscience (partial list):

Kamel Khalili, Ph.D, Professor and Chair, Translational approaches toward eradication of HIV-1 and JCV in CNS

Tracy Fischer, Ph.D., Assistant Professor, Chronic inflammation in brain of patients with HIV-1

Jennifer Gordon, Ph.D., Associate Professor, Neuropathogenesis of viral infections of the CNS, neurodegeneration, and neurooncology

Wenhui Hu, M.D., Ph.D., Associate Professor, Neurogenesis, neuroplasticity and neuroimmunity in treatment of diseases of the nervous system

Dianne Langford, Ph.D., Associate Professor, Effects of HIV infection, drugs of abuse, and other disorders associated with CNS dysfunction

Xuebin Qin, M.D., Ph.D., Assistant Professor, Development of therapeutic anti-hCD59 inhibitor for HIV and Ab-based cancer therapy

Jay Rappaport, Ph.D., Professor, Neuropathogenesis of AIDS and innate immunity