Investigator:	**William Tyor** Phone: (404) 321-6111 ext. 207609 Email: william.tyor@va.gov
Primary Research Interest:	Neurology
Description of Research:	Research efforts involve both basic and clinical studies. My basic research focuses on the role of the immune system in pathological processes of the central nervous system. The primary focus is to examine the immune response during viral encephalitis. A model of HIV encephalitis in severe combined immunodeficient (SCID) mice was developed whereby HIV-infected or uninfected human mononuclear cells are injected intracerebrally and these mice resemble the changes seen in humans with this condition. We have also developed an in vitro system which parallels the animal model and will allow us to address subcellular mechanisms of disease. Ultimately, we will identify mechanisms involved in the pathogenesis of HIV encephalitis so that better treatment strategies can be developed. Clinical studies involve primarily multiple sclerosis. These include collaborative efforts with immunologists at Emory, a VA longitudinal study of veterans with MS and therapeutic trials. We are also studying patients with HIV associated cognitive disorders to try and determine factors involved in disease pathogenesis.
Relevance to VA:	There are currently large numbers of veterans infected with HIV. As many as 50% of them will develop cognitive problems over the course of their illness, which can be debilitating and cause a loss of productivity and income, among other effects. While antiretroviral therapy has resulted in a longer lifespan for veterans who are infected, their chances of having cognitive dysfunction have increased. In addition, there does not appear to be a cure or effective vaccine on the foreseeable horizon. Therefore, new and better therapies for this condition must be developed. It is the aim of my research program to develop better therapies for this condition. Approximately 25,000 veterans suffer from multiple sclerosis, a potentially crippling disease, which affects relatively young people. The available treatments are only partially effective. The aims of our research program in MS are to better understand the disease within the veteran population, gain better insights into disease pathogenesis, and ultimately develop better treatments.