

Competitive Capacity Grants Funded Applicants: 2004-2005

Development/Innovative Grants

Steven Beyea

Physics and Atmospheric Science, Dalhousie University

Understanding Intervention: Building Capacity in non-invasive multi-modal neuroimaging

The objective of the current proposal is to begin work that focuses on improving assessment through functional brain imaging. While still in its relative infancy, functional brain imaging has already provided critical advances in understanding the brain and applying this knowledge to the treatment of various brain diseases and disorders. The imaging advances developed through this project will help catalyze future studies in brain repair. They will have a direct impact on assessing intervention by overcoming the current challenges faced in neuroimaging. Research in neuroscience is a strong regional asset. With the recent investment of a state-of-the-art imaging infrastructure, we can combine these scientific and technical assets to build neuroimaging research capacity as a vital component of medical research in Nova Scotia.

Arla Day

Department of Psychology, Saint Mary's University

Families with special needs children: Minimizing psychological stress and strain of work-family conflict

Balancing work and family responsibilities is a growing concern for the majority of Canadian families. The increasing number of women in the workforce and the increasing number of single-parent families as well as the increased expectations to work longer hours have created more challenges for families. The problems in balancing work and family responsibilities are often compounded for parents with special needs children (e.g., Down's syndrome children, attention deficit/hyperactivity disorder children, children with physical disabilities, etc.)

John Downie

Department of Pharmacology, Faculty of Medicine, Dalhousie University

Contribution of neuronal sprouting to disturbed bladder function after spinal cord injury

This project will lay the groundwork for continued, detailed investigation into ways to control some of the changes that occur in the body after spinal cord injury. Specifically, the project will focus on "neuronal sprouting"—the post-injury growth of spinal neurons to make new or stronger contacts with other neurons. Unfortunately, neuronal sprouting appears to contribute to bladder function disorders. This project seeks to alter the sprouting process through the spinal administration of a specific enzyme, which, it is predicted, will prevent nerve terminals from extending. The researchers will thereby disrupt the development of bladder disorder in a

rat spinal cord injury model. Ultimately, the results of this project will contribute to increased rehabilitation for people with spinal cord injury.

Janice Keefe

Family Studies & Gerontology, Mount Saint Vincent University

Projecting the need for chronic home care support for Canada's elderly and assessing its impact on human resources

With the aging of the Baby Boomers, there is bound to be an increased need for home care services. But how large an increase? And how can the health care system best prepare to meet it? This project will allow a research team to lay the groundwork for answering these questions. The team, equipped with expertise in projections of this nature, will use innovative modeling techniques through Statistics Canada's LifePaths microsimulation model. Using the 1996 National Population Health Survey and the 1996 General Social Survey, they will project the degree of disability and the availability of family support from 2001 to 2031. The results will contribute to an understanding of the need for home care services in an aging society.

David Westwood

School of Health and Human Performance, Dalhousie University

Development of a function neuroimaging paradigm to study plasticity in human motor cortex

The recovery of language, memory, and movement after a stroke are thought to depend, in large part, on the plasticity of the central nervous system — in other words, on its ability to recover lost functions or acquire new ones. This project seeks to increase our understanding of the natural mechanisms that determine the degree of plasticity. Researchers will develop a "brain mapping" approach that will use fMRI technology (functional magnetic resonance imaging) in a novel way. Instead of just determining which region of the brain is active while healthy individuals perform activities, this new fMRI paradigm will incorporate the knowledge that critical regions of the motor cortex are systematically organized into small units. For the first time, researchers will be able to determine what is actually taking place within the activated regions — with significant implications for stroke recovery.

Community Research Alliance Grants

Ruth Martin-Misener
School of Nursing, Dalhousie University

Nurse Practitioners in Long-Term Care: A Collaboration among Administrators, Practitioners and University Health Researchers

As the life expectancy of Nova Scotians increases, complex health and social challenges arise. Older adults in long-term care facilities require a full range of primary health care, e.g., health promotion, disease prevention, curative and rehabilitative services, delivered in a patient-, family- and community-centered way. Traditional models of care are becoming difficult to sustain. This project will look at a new approach that is starting to be explored: the introduction of nurse practitioners into long-term care facilities. Collaborative in nature, the project will bring administrators and health care providers from Northwood Inc., in Halifax, together with interdisciplinary health researchers from Dalhousie University. They will develop a plan to evaluate the impact of nurse-practitioner care on residents' health and quality of life.

Wayne Putnam
Department of Family Medicine, Dalhousie University

Hypertension in Patients with Diabetes Mellitus Type 2

Patients who suffer from both hypertension and diabetes run a much higher risk of long-term complications such as stroke, blindness, and renal failure — with enormous impact on individuals, families, and the health care system. We know that risk can be reduced with effective treatment. However, we have insufficient understanding of how best to manage and treat these diseases in a primary care setting. This project will take a collaborative approach to the question of effective care and management. Family physicians from a wide variety of practice settings and communities will work with university faculty who have experience in primary care research.