

2007/2008 NSHRF Competition Announcement

Health Research Grants: Funded Applicants

Program

The purpose of Health Research Grants is to build capacity in health research across the four health research categories. There are two types:

- *Health Research Project Grants (HRPG)* assist in building research capacity and provide initial support for new health researchers in Nova Scotia over a one- to three-year period.
- *Collaborative Health Research Project Grants (CHRP)* support researchers working collaboratively with community organizations on research projects of relevance to communities.

Funding - Up to \$50,000/year for 3 years (maximum \$150,000)

Funded Applicants: 19 Total Funding = \$2,543,840.00

1. Parental Response to Everyday Pain in Young Children

Christine Chambers

Pediatrics (GI Division)

IWK Health Centre

Team Members: Patrick McGrath, IWK Health Centre, Chris Moore, Dalhousie University; Natalie Yanchar, Dalhousie University

Research has described how parents behave when their children have painful medical procedures (like needles) or aches and pains (like headaches and stomach aches), but not during common “everyday” types of pain such as minor bumps and scrapes. This study will explore how parents respond when their children have everyday pains, what these everyday pains are like, and whether parents' response to these pains is similar to how they respond when their children have a medical procedure. The results of this study will be very helpful in improving our understanding of how parents respond to pain in children and provide insight into how parents could learn to respond to their children's pain in ways that will help them deal with pain as early as possible.

Funded for 3 Years = \$150,000

2. Potassium Channel Function in Cancerous and Normal Breast Epithelial Cells

Elizabeth Cowley

Physiology and Biophysics

Dalhousie University

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Paul Linsdell

Physiology and Biophysics
Dalhousie University

Epithelial cells play an important role in the breast. However, these cells are also the site where most breast cancers begin; therefore, it is important to understand them to learn what goes wrong in breast cancer. Epithelial cells transport ions and fluid by means of proteins called ion channels and transporters present on the surface of the cell. Ion transport pathways likely control the formation of fluid-filled cysts in the breast, and the presence of high-potassium (K⁺) ions within one type of breast cyst has been linked to an increased risk of developing breast cancer. This research will use models of normal and cancerous epithelial cells to investigate ion transport, with particular emphasis on the pathways present to transport K⁺ ions; whether different K⁺ channels are present in cancerous and non-cancerous cell lines; and how cells change in volume. A tissue-culture model of breast cyst formation will also be developed to help investigate basic aspects of this development and possible novel therapeutic approaches to treating cysts.

Funded for 3 Years = \$150,000

3. Structure and Function of Chromatin and Other Nuclear Domains in Genome Stability and Cancer Progression**Graham Dellaire**

Department of Pathology
Dalhousie University

The discovery of new methods for the detection, treatment, and prevention of cancer are needed to meet the cancer crisis facing Nova Scotia. One of the most important determinates of cancer susceptibility is the ability of a cell to identify and repair damaged DNA. An inability to properly repair DNA damage leads to genome instability and a build up of chromosome abnormalities and mutations that alter cell growth and cause cancer. DNA of the cell is found in the nucleus as protein coated fibres known as chromatin. This research includes a series of experiments that will characterize how changes in these chromatin fibres contribute to DNA repair and the prevention of genome instability.

Funded for 3 Years = \$150,000

4. School-based Health Service Utilization in Cape Breton: Implications for Adolescent Health Service Delivery**Jacqueline Gahagan**

School of Health and Human Performance
Dalhousie University

Team Members: Donald Langille, Dalhousie University; Andrew Lynk, Cape Breton District Health Authority; Mary Beth Leblanc, Cape Breton District Health Authority & Network For

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Children & Youth; Gordon Flowerdew, Dalhousie University; John Deroche, Cape Breton University; Evelyn Schaller, Cape Breton District Health Authority

Males have more health problems than females yet adult males use health services less often than adult females. Studies on children's health-care use show that use by males is similar to, or slightly higher than, that of females. Adolescence, therefore, appears to be an important transition period for establishing patterns of health-services use by older males. School-based health centres (SBHCs) are becoming more common as a way to meet adolescent health needs, and Nova Scotia is a leader in this approach to youth health within a network of 40 school-based and school-linked health services. In Cape Breton, SBHCs in four high schools provide a unique way of getting services to students, and providing comprehensive physical, mental and preventive health services to youth and adolescents. However, data from previous research in Cape Breton has shown male students use these health services far less frequently than females, even when they are at high risk for such problems as substance use and depression. Using interviews and surveys, this research will examine factors related to Cape Breton male high school students' patterns of use of SBHCs and make recommendations about making services work better for males.

Funded for 3 Years = \$126,859

5. Decision-Making in Autism Spectrum Disorders: Deconstructing Complex Behaviour to Identify Subtypes

Shannon A. Johnson

Departments of Psychology, Pediatrics, and Psychiatry
Dalhousie University
IWK Health Centre

Team Members: Susan Bryson, Dalhousie University & IWK Health Centre; Isabel Smith, Dalhousie University and IWK Health Centre; Julie Stout, Monash University; Nancy Garon, IWK Health Centre; Penny Corkum, Dalhousie University; Jillian Filliter, Dalhousie University

This project will address two concerns with Autism Spectrum Disorders (ASD). First, there is growing interest in trying to identify specific subtypes of ASD that share important features and provide information about genetics and/or brain development. This project will use methods that appear to have potential for finding meaningful subtypes of ASD. Second, this study will address the need to meet the health of all individuals with ASD, regardless of age and level of functioning. There is a need to expand research efforts to increase the understanding of health in school-aged children, adolescents, and adults with an ASD. It is also important to develop interventions for higher-functioning individuals diagnosed with ASD who tend to receive fewer supports and individualized treatment. This study will take an important step in this direction by examining complex cognitive abilities in high-functioning school-aged children and adolescents with an ASD.

Funded for 3 Years = \$149,563

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6. **The Role of the Niemann-Pick Type C1 Protein in Neuronal and Synaptic Function**

Barbara Karten

Department of Biochemistry and Molecular Biology
Dalhousie University

Niemann-Pick Type C (NPC) disease is a rare, neurodegenerative disorder that leads to death of a person before reaching adulthood. It is caused in most cases by a defect in the NPC1 gene. NPC disease has a particular significance in Nova Scotia since the carrier rate for a mutation in the gene is much higher in the Yarmouth area of Nova Scotia than in the rest of the world. This research aims to find out more about the function of NPC1 in nerve cells and how loss of NPC1 leads to defects in synaptic transmission. Knowing more about the mechanisms that lead up to these defects will help in identification of additional targets for therapy of NPC disease.

Funded for 3 Years = \$149,970

7. **Antipsychotic Use in Nova Scotia's Children and Adolescents**

Andrea L. Murphy

School of Nursing
Dalhousie University

David M. Gardner

Psychiatry
Dalhousie University

Team Members: Jean Hughes, Dalhousie University; Stephen Kisely, Dalhousie University; Stan Kutcher, Dalhousie University; Charmaine Cooke, Dalhousie University

Many mental illnesses start before adulthood, but research about medications for mental illnesses is mostly focused on adults. An important class of medications is antipsychotics, which are used to treat people who have symptoms such as delusions and hallucinations. As well, in children and adolescents, they are sometimes used to treat aggression, tics, anxiety, mood, and sleep problems. How well these medications work or the side effects they cause in children and adolescents are not well known. Research studies in adults have shown that newer antipsychotics can cause high blood sugar, high cholesterol, and weight gain. This study will evaluate these risks in children and adolescents. It will also determine the extent of antipsychotic use by children and adolescents who are receiving community services in Nova Scotia as well the reasons for their use and who is prescribing them. Spending on older and newer antipsychotic medications in this population will also be measured.

Funded for 3 Years = \$100,845.93

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8. Hearing Disorders and Their Treatment: Functional and Structural Effects on Brain Organization

Aaron Newman

Psychology & Psychiatry
Dalhousie University

Team Members: Manohar Bance, Dalhousie University; Lisa Sanders, University of Massachusetts, Amherst

A number of options exist for individuals with hearing loss including sign language, speech-language therapy, hearing aids, surgical reconstruction, and surgical aids such as cochlear implants. However, little is known about the best strategies for using these treatments. Tests are needed to predict what treatment will be most effective for each person with hearing loss. This research will use the latest brain-imaging technology to show how hearing loss affects the way the brain is “wired.” One important factor may be the degree to which the parts of the brain that would normally process sound get taken over for processing visual information. The goal is to develop a test that can be used routinely in hospitals to help predict the best type of hearing aid and best window of opportunity to maximize the success of treatment.

Funded 3 Years = \$149,652

9. Persons with Intellectual Disabilities: A Population at Risk in Nova Scotia

Deborah Norris

Department of Family Studies & Gerontology
Mount Saint Vincent University

Kathleen MacPherson

Community Health & Epidemiology
Dalhousie University

Team Members: Janice Keefe, Mount Saint Vincent University; Brian Hennen, Dalhousie University; Gordon Flowerdew, Dalhousie University; Adele McSorley, Centre of Excellence for Children & Adolescents with Special Needs; Cathey Crouse, Metro Community Housing Association; Mark Smith, Dalhousie University; Pamela Talbot, Dalhousie University; Hilary Amit, Nova Scotia Residential Agencies Association; Suzan Jorgensen, Kendrick Report Coalition; Nancy McKennell, People First Nova Scotia; John Cox, People First Nova Scotia; Cathy Deagle Gammon, DIRECTIONS Council for Vocational Services; Mary Rothman, Nova Scotia Association for Community Living

To date, no single, comprehensive collection of information about persons with Intellectual Disabilities exists in Nova Scotia; however, smaller collections of data are available from various agencies. For the most part, they fall into two categories: survey data and administrative data. The potential exists to integrate these into a cohesive and comprehensive database that would have a number of applications: improving the quantity and quality of available information on persons with ID and increasing capacity to address fundamental research questions relative to

the prevalence of Nova Scotians with an ID, their demographic profile, service needs and usage, satisfaction with services, and future needs. This project will develop that database.

Funded 3 Years = \$144,570

10. Anti-apoptotic Mechanisms that Mediate Colorectal Cancer Progression

Kirill Rosen

Pediatrics

Dalhousie University

Team Member: Patrick Lee, Dalhousie University

The cells lining many human organs (epithelial cells) form a single layer. Cells that detach from this layer die. Cancer cells are often derived from epithelial cells. To spread to other parts of the body cancer cells have to be able to survive outside of the epithelial layer. Our goal is to understand the mechanisms allowing them to survive. To this end, we are studying a protein called Ras, which is thought to contribute to the progression of many cancers. Genetic alterations in cancer cells make Ras active at all times and allow it to rescue detached cells from dying. We found that Ras can reduce levels of a cell death-inducing protein called Chk2 in cancer cells. Our goal is to establish whether this change allows Ras to rescue detached cancer cells from death. If successful, our work could lead to a new type of cancer therapy based on blocking the ability of cancer cells to survive outside of their original location and spread to other parts of the body.

Funded 3 Years = \$149,964

11. Accessibility and use of the Emergency Contraceptive Pill in Nova Scotia

Anne Marie Whelan

College of Pharmacy

Dalhousie University

Team Members: Don Langille, Dalhousie University; Charlotte Loppie, Dalhousie University; Susan Wedlake, Nova Scotia College of Pharmacists; Sandra Aylward, Sobeys Pharmacy Group; Rhonda Phillips, Nova Scotia Association for Sexual Health; Kelty Moser, Nova Scotia Association for Sexual Health; Bridgitte Neumann, Nova Scotia Advisory Council on the Status of Women, Lisa Tobin, Nova Scotia Department of Health Promotion and Protection; Gordon Flowerdew, Dalhousie University

Unintended pregnancy is a common outcome that may lead to serious negative health and social consequences for both mothers and babies. Emergency contraception (EC) can be taken up to five days after unprotected sex and is a safe, effective way to prevent unintended pregnancy. However, there are a number of potential barriers to women's ability to access and use EC, including lack of knowledge, reluctance to see a physician, difficulty in getting a timely physician appointment, and lack of privacy at pharmacies. To address some of these barriers, the Canadian government made one form of EC (Plan B®) available from pharmacists without a doctor's prescription. Focus groups with rural and urban women and pharmacists in Nova Scotia

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have suggested that women do not understand the timeframe for using EC and that not all women are aware of this new way of getting EC. These issues, among others, could prevent women from being able to get EC despite the recent policy change. The objective of this research project is to understand the things that can affect women's ability to get EC and pharmacists' ability to provide it.

Funded for 3 Years = \$145,931

12. The Role of Epigenetic Imprinting and Chromatin Remodeling in the Sensitization to Psychomotor Stimulants

Karen Brebner

Psychology

St. Francis Xavier University

Willard Freeman

Penn State College of Medicine

Team Member: John McKenna, St. Francis Xavier University

Drug abuse is a major societal problem with high direct and indirect costs to society. Addiction is a process that generally starts with recreational substance use and deteriorates over time into a compulsive and chronically relapsing disorder. Drug use is reported to have a negative impact on many aspects of life, including harm to family and social relationships, harm to physical health, to work, to study and to employment. The mandate of the NSHRF is to foster health research in the province in order to improve the health of Nova Scotians. The studies that are being proposed in this grant application consist of basic scientific research aimed at discovering how exposure to addictive drugs produces stable, possibly permanent, maladaptive changes in the brain that help to maintain addiction.

In order to understand addiction, it is necessary to identify not only the acute effects of drug exposure on the brain, but also to characterize secondary events that could underlie one of the hallmarks of addiction – the long-lasting propensity to relapse. A key goal of this proposal is to discover how changes in the brain can last for many weeks or months after drug exposure has ceased. We will use an animal model of addiction that produces gradual, long-lasting changes in behaviour that are similar in nature to the deterioration of behaviour that characterizes human drug addiction. We will use this model; known as behavioural sensitization, to assess whether epigenetic imprinting occurs with drug exposure. Epigenetic imprinting refers to changes in DNA that can alter the expression of genes in cells. If exposure to drugs can alter the DNA of a brain cell, it could help to explain the neurobiology of the addictive process, or how a person's brain changes as they become addicted to drugs, and how those changes are maintained over many months or even years.

We will be targeting several genes that have been shown to be altered on a temporary basis by exposure to drugs of abuse in other animal models of addiction. We are proposing to conduct several studies that are aimed at identifying long-lasting, drug-induced changes in specific brain regions that are part of what is commonly referred to as the brain's "reward circuit". The results from these studies will supply us with detailed information about how epigenetic imprinting affects multiple genes in several brain regions, providing us with a circuit-wide picture of time-

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dependent, drug-induced changes in the brain. We will also be assessing whether specific drugs that are known to inhibit cellular processes involved in epigenetic imprinting might be used to block, or even reverse, changes in DNA that do result from exposure to addictive drugs. The results of these studies will not only help to increase our understanding about the causes and nature of addiction, but could also lead to the discovery of promising new targets for medications aimed at treating addiction and preventing relapse in people who are motivated to move towards abstinence.

Funded 3 years = \$150,000

13. Effect of Opportunistic Viral and Bacterial Infections on the Pharmacokinetics and Nephrotoxicity of Calcineurin Inhibitors

Kerry Goralski

College of Pharmacy
Dalhousie University

Phillip D Acott

Pediatrics and Pharmacology
Dalhousie University

P-glycoprotein (P-gp) is a membrane drug efflux transporter that is present in the blood brain barrier (BBB) and organs including kidney, liver and intestines. We have demonstrated previously that lipopolysaccharide (LPS) evoked inflammation confined to the CNS results in down regulation of hepatic and brain cytochrome P450 levels and activity. The objective of this project is to determine if P-gp in the BBB and peripheral organs is altered during inflammatory response confined to the CNS and if this leads to altered drug distribution and elimination. *E. coli* LPS (0.025mg) or an equivalent volume of saline was injected into the left lateral cerebral ventricle of male rats. 48 hours later, an extensive CNS inflammatory response was present in LPS but not saline treated rats as demonstrated by immunoreactivity for HSP27. At 48 hours, animals were administered H-digoxin (0.5 mg/kg, ip). Plasma digoxin levels (2 hours) and AUC were increased in LPS treated rats ($P < 0.05$). At 2 hours post digoxin administration, kidney, liver, brain, testes and small intestine had tissue/plasma ratios of radioactivity that were lower in LPS versus saline treated rats ($P < 0.05$). At 4, 8 and 16 hours the ratios were similar in both groups. Plasma radioactivity (w hours) was greater than 9-0% H-digoxin indicating that digoxin was not significantly metabolized. The increased plasma concentration and AUC of digoxin in LPS treated rats is consistent with decreased digoxin elimination via P-gp mediated routes. The decrease in tissue/plasma digoxin ratios suggests that a membrane transport process (possibly OATP) that is needed for tissue uptake for digoxin is depressed by inflammation resulting in dissociation of tissue uptake with increased plasma concentrations of digoxin. In conclusion, the data suggest that in addition to modulating drug biotransformation in the CNS and periphery, inflammation localized in the CNS may also modulate drug disposition through effects on drug transport proteins.

Funded for 1 year = \$49,967

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14. Learning the Views of Cancer Survivors About Their Routine Follow-up Care

***Baukje Miedema**

Family Medicine Teaching Unit
Dalhousie University

Eva Grunfeld

Cancer Outcomes Research Program
Cancer Care Nova Scotia

Team Members: Margot Burnell, Atlantic Health Science Corporation; Amy Lewis, Capital District Health Authority; Robin Gillingham, Capital District Health Authority; Dianne Schreuer, Nova Scotia Breast Screening Program

Cancer survivors usually have follow-up visits after completing treatment. For breast cancer patients, follow-up with the family physician has been shown to be a safe alternative to follow-up with the cancer specialist. Currently, however follow-up practices offered to cancer survivors vary throughout Atlantic Canada including Nova Scotia. Some patients see their family physician for follow-up while others continue to see their cancer specialist. The follow-up period can be accompanied by many feelings such as the feelings of abandonment, uncertainty about who is primarily responsible for follow-up care, and anxiety. From the Nova Scotia health system's perspective, studying follow-up care is important because the growing number of cancer survivors means there are more demands on our cancer system. We need to find appropriate solutions to address these demands so that we can provide efficient, timely and quality follow-up care. The aim of this study is to learn the views of breast and colorectal cancer survivors about their routine follow-up care and to gain an understanding of how the best provide routine follow-up care. This study will involve eight focus groups: two with breast cancer patients in Halifax and two in Saint John; and two with colorectal patients in Halifax and two in Saint John. Patients will be asked to reflect upon their life as a cancer survivor, the care and support they received during the follow-up period, the gaps they perceive in their care, and their overall preference for follow-up care. With this information we will examine patients' experiences with, and preference for, their routine follow-up care. This will allow us to learn what aspects of routine follow-up care are in need of improvement, and ways to support patients as they are transferred from their cancer specialist to their family physician for follow-up care.

Funded 2 years = \$86,626

15. The Neural Effects of Daytime Recuperative Naps

Jason Ivanoff

Department of Psychology
Saint Mary's University

Team Members: Benjamin Rusak, Dalhousie University; Chris V. Bowen, Dalhousie University

Daytime sleepiness resulting from inadequate nocturnal sleep is a well-documented problem with serious health and safety consequences. A recent poll of the general public found that nearly 70% of respondents reported sleeping less than 8 h nightly (7.5 – 8.5 h is considered

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adequate for most adults) and 40% less than 7 h nightly. Sleep loss is even more common and more severe among shift workers, who comprise ~30% of the work force, including those in health care, protection services, manufacturing and the military. Consequences of inadequate sleep include impaired performance in school, while driving, and in the workplace. There has recently been a particular focus on serious medical errors made by sleep-deprived healthcare professionals.

Compensatory daytime naps have been suggested as a partial solution, but little is known about the effects of such naps on neural activity associated with decision-making. We propose to use cognitive testing and functional neuroimaging to investigate the effects of partial sleep deprivation and a subsequent recuperative daytime nap on the core mechanism of decision-making and on the brain activity that underlies its performance.

The results will have implications for the use of strategic napping to combat fatigue resulting from inadequate sleep or extended work hours, which are common experiences for many workers (especially those in healthcare).

Funded 3 years = \$147,986

16. Metabolomic Analysis of a Rodent Model of Kidney Obstruction

Dawn MacLellan

Surgery, Division of Urology
IWK Health Centre

Team Members: Victor Han, University of Western Ontario; John Walter, National Research Council; Weei Huang, Dalhousie University, Tobias Karakach, National Research Council,

Approximately 1% of all children are noted to have congenital hydronephrosis (dilation of the kidney collecting system or urinary tract obstruction) on prenatal ultrasound examination. Some children will have spontaneous resolution of this problem, however, others may suffer complications including renal failure. The mechanism of injury in kidney obstruction is poorly understood. My preliminary analysis of small molecule (also known as metabolite) changes in urine of rats subjected to urinary tract obstruction (UTa) using the sensitive method of nuclear magnetic resonance (NMR) spectroscopy indicates a specific pattern of metabolite changes. This type of injury pattern in other models of kidney damage has been reversed using dietary supplementation of a particular compound, taurine. A neonatal rodent model of varying degrees of UTa (mild and severe) mimics human congenital hydronephrosis, in that mild UTO in the rat has minimal effect on the kidney and severe UTa results in decreased kidney function. The aim of this research proposal is to use NMR spectroscopy to identify the serum, urine, and kidney tissue metabolite alterations that result from varying degrees (mild and severe) of kidney obstruction in a rodent model. This will allow us to better understand the mechanism of kidney injury in UTO and differentiate between varying degrees of UTa. In addition, I will determine if supplementation with taurine will reverse the injury of the kidney that results from UTO. Potential metabolite biomarkers identified will be validated in an ongoing human clinical trial of children with UTa.

This research is important to the mandate of the NSHRF because it will foster health research in Nova Scotia (NS). All of the proposed research will take place in NS. This proposal is a collaborative effort among several disciplines including Urology, Pathology, Bioinformatics, and the study of metabolites (Metabolomics). It cultivates an already productive collaboration between the National Research Council and Dalhousie University. The translational nature of this research, i.e. identification of biomarkers, lends itself toward knowledge translation and commercialization of research knowledge.

Such research, if funded by the NSHRF, will increase the public knowledge and awareness of the Foundation and its benefits. The NSHRF's mandate to fund researchers early in their career benefits junior researchers like myself who seek local funding opportunities to generate preliminary data suitable for grants from agencies like CIHR.

The proposed research will significantly impact the health of more than 100 Nova Scotian children born each year. The research will provide a better understanding of the metabolic changes that occur at the cellular level in obstruction of normal and obstructed kidneys. This may lead to preventative therapies or a recommendation of early surgical correction to avoid loss of kidney function. In addition, the research will identify potential urinary biomarkers of urinary tract obstruction that will be validated in a human trial. These biomarkers will aid in diagnosis, eliminate invasive testing in affected children, and may provide some ability to determine which children with UTa will have undesirable outcomes, thus guiding early corrective management and preventing complications such as renal failure.

Funded 3 years = \$150,000

17. Oral Care in Continuing Care Settings: Collaborating to Improve Policies and Practices

Mary McNally

Dental Clinical Services
Dalhousie University

Team Members: Ruth Martin-Misener, Dalhousie University; Joanne Clovis, Dalhousie University; Debora Matthews, Dalhousie University; Paul Allison, McGill University; Barry Clarke, Dalhousie University; Christopher Wyatt, University of British Columbia; Sandra Crowell, Dalhousie University; Sandi Berwick, Twin Oaks Memorial Hospital

In Nova Scotia, elsewhere in Canada and internationally, health care-providers, decision – makers and the public share a general lack of awareness of potential impacts of poor oral health on general health. Although health care systems are concerned with a broad range of factors and services that affect the health of Canadians, oral health care has historically been absent from health care discussions. Providing quality oral health care for older adults is a challenge that will continue to grow in importance. Canadians are living much longer than previous generations so health services must be available over a much longer lifespan than ever before. This has special implications for Nova Scotia, where we currently have the second oldest population in the country with 14.6% of the population over the age of 65. We also know that approximately one-third of Canadians over the age of 80 live in some form of long-term care residence to support frailty and dependency. With respect to oral care, Canadians are also aging with a greater percentage of natural teeth. This results in new patterns of disease and greater

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challenges for providing care to dependent older adults. This research focuses on oral health care for frail and dependent older adults with particular emphasis on daily mouth care. Mouth care is an integral part of personal care yet studies consistently indicate that oral health status amongst frail and dependent older adults is poor. This places them at risk for oral diseases and dysfunction, impacting quality of life, diminishing the pleasures of eating and speaking and social interactions and affecting overall health. Although poor oral health is partly attributed to difficulty in accessing private dental care, it is also known that daily personal care is inadequate for those who depend on others to carry out tasks of daily living and oral health is given low priority in the long-term care sector. To date, research focusing on the introduction of daily mouth care programs for dependent older adults in long-term care has met with little success. This is attributed to a general lack of awareness of care-providers and decision makers about the importance of oral health to general health, inadequate education of personal care providers, attitudes and behaviours of care-providers, and organizational structures that lack adequate policy and administrative support to ensure delivery of daily mouth care. In addition, it is also recognized that there has been little collaboration between dentistry and mainstream health care systems to address this problem. The purpose of this research is to examine the integration of oral health care for frail and dependent older adults into a variety of continuing care settings in rural Nova Scotia. To carry out this work, a dynamic interdisciplinary team of researchers, decision makers and end users has developed collaborative partnership with the Capital District Health Authority Eastern Shore Tri-Facilities. Together, we will explore a broad spectrum of influences on oral care in 3 long-term care facilities and 1 adult day clinic affiliated with the Tri-Facilities. To establish a formal process for integrating oral care into organizational policy and practice, we will use a collaborative approach to assess, plan, implement and evaluate an oral care action plan. The involvement of end users and decision makers as part of the research process ensures that results of the study reach the most relevant audiences. Research following from this pilot study will ultimately inform policies and programs to promote better oral care practices and will lead to effective strategies for improved training and institutional care planning.

Funded 2 years = \$92,728

18. A Randomized, Double-blind, Controlled Trial of Lithium Versus Paroxetine in Subjects with Major Depression Who Have a Family History of Bipolar Disorder or Completed Suicide

Claire O'Donovan

Department of Psychiatry Dalhousie
Capital District Health Authority

Martin Alda

Dept. of Psychiatry
Dalhousie University

Team Members: Tomas Hajek, Dalhousie University; Julie Garnham, QEII Health Sciences Centre; Marina Sokolenko, Dalhousie University; Glenda MacQueen, McMaster University

First of all, we are discussing here, people with a significant depressive disorder called major depression. People with other mood abnormalities related to chronic stress have significant mental ill-health that may require a different or complimentary treatment to severe major

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depression and are not the focus of attention in this particular study. People with severe major depression require medication as part of the management of their illness. Clinically, people with this illness may respond differently to drug treatments for reasons which are not always clear. Some of our own recent research suggests that people with major depression who have a family history of bipolar disorder or completed suicide, may react differently to standard antidepressant medications than those without such a family history.

In particular, we have found suggestions in retrospective study of this group, of both poor response rates to antidepressants, and treatment – emergent adverse events such as agitation and rage. These adverse events may be strong predictors of a future bipolar course (i.e. the person will go on to develop both manic and depressive episodes, which have major treatment implications) and are inherently dangerous themselves, particularly as they may increase suicidality. Finally, it is possible that this subgroup of people with depressive illness may respond better and more safely to lithium, a mood stabilizer effective in bipolar depression and a known antisuicidal agent. This sub-group may represent as much as 11% of those treated currently for major depression. This study is a 6 week randomised controlled trial of lithium versus paroxetine (a standard antidepressant) in subjects with a diagnosis of major depression that have either a family history of Bipolar Disorder or completed suicide.

Better detection of depressive illness and easier – to – tolerate medications has led to a substantial increase in the use of antidepressants in Canada since the early 1990's bring relief of burden to many with mood disorders. However, as with other medications that appear to have a low risk-benefit profile, this can lead to a widespread use that encompasses some where the risk-benefit ratio is of serious concern. 5.8% of the Canadian population (about 50,000 people in Nova Scotia) are on antidepressant treatment, which is currently the standard treatment for all. It is our job, as psychiatry specialists, to clarify or refute this important concern, and educate the public, the consumer, the primary care physician as well as all mental health clinicians who currently treat those with major depression.

Funded 3 years = \$150,000

19. A Randomized Clinical Trial of Prevention of Post Ablation Recurrence of Atrial Fibrillation with Valsartan - A Pilot Study

Ratika Parkash
Capital District Health Authority

Team Member: John L. Sapp, QE II Health Sciences Centre; Magdy Basta, QE II Health Sciences Centre; George Wells, University of Ottawa; Martin Gardner, Capital District Health Authority;

Atrial fibrillation (AF) is the most common rhythm disorder and is associated with significant symptoms, necessitating treatment. In those with symptoms, it can interfere with the ability to carry on with usual activities of daily living, cause multiple absences from work and often leads to multiple emergency room visits and even hospitalizations. When symptoms are worse, they can result in significant shortness of breath and heart failure. Current therapy for atrial fibrillation is limited to medications that work only half the time. A new procedure known as radiofrequency ablation is a procedure for atrial fibrillation/flutter that has evolved significantly since 1998 and is the closest we have come to a 'cure' for this rhythm disorder. Unfortunately,

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the recurrence of atrial fibrillation in those who have undergone radiofrequency ablation as treatment for either atrial flutter (AFI) or AF up to 40% at one year. Recent evidence from large studies demonstrated that blockade of a protein in the bloodstream called angiotensin II in humans leads to reduction of AF. There is no large study to date of the use of angiotensin II blockade in patients after radiofrequency ablation for these rhythm disorders to prevent recurrence.

Funded 3 years = \$150,000