Alzheimer Society
CANADA

ACCOUNTABILITY REPORT 2012-2013

ALZHEIMER SOCIETY RESEARCH PROGRAM

Alzheimer Society of B.C.
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www.alzheimerbc.org

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Alzheimer Society of Ontario
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Alzheimer Society of New Brunswick
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Alzheimer Society of Newfoundland and Labrador
Toll-free: 1-877-776-0608
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For more information about the Alzheimer Society Research Program and the research we fund, or to obtain copies of this report, please contact us at:

Alzheimer Society
CANADA

Alzheimer Society of Canada
20 Eglinton Avenue West, 16th Floor
Toronto, Ontario, M4R 1K8
Tel: 416-488-8772
Fax: 416-322-6656
Toll-free: 1-800-616-8816
E-mail: info@alzheimer.ca
Website: www.alzheimer.ca
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ACCOUNTABILITY REPORT 2012 - 2013

ASRP-AR-E

Message from CEO, Alzheimer Society of Canada and Chair, Research Policy Committee

We are pleased to present the 2012-2013 Alzheimer Society of Canada Research Accountability Report. The Alzheimer Society Research Program (ASRP) is the largest non-government funder of Alzheimer's disease and dementia research in Canada. Through our Research Program, we remain steadfast in our commitment to funding research leading to a cure for Alzheimer's disease and other dementias and improving the lives of those living with and affected by the disease.

This year the ASRP celebrates 24 years of funding both biomedical and quality of life research streams:

Our biomedical research stream looks at the science of the brain and the changes that are associated with dementia. It involves identifying therapeutic targets to reverse, stop or cure the disease.

The ASRP's quality of life research stream explores issues that impact the daily lives of people with dementia and their caregivers, including risk factors, cognitive changes, physical support, strategies for carers and health-service delivery.

Through the support of provincial Alzheimer Societies, our generous donors and partners, the ASRP was able to fund 35 grants and awards in 2012-2013, for a total amount of $3,306,368. With this funding, 19 Training Awards were given to doctoral students and post doctoral fellows and 16 Young Investigator Grants were awarded to researchers who are within the initial two years of their first faculty position. Research Grants were also given to 10 established investigators.

We extend our gratitude to the outstanding expertise and dedication of our voluntary Biomedical and Quality of Life Peer Review Panel members as well as the Research Policy Committee of the Alzheimer Society of Canada's Board of Directors, who have enabled us to conduct a fair and rigorous peer review process and adhere to the standards we set for the Peer Review.

We look forward to raising more money so that further research projects can be funded. This past year, 21 meritorious projects in the amount of $3,025,244 were not funded. These projects represent the ideas of brilliant scientists who, if funded, could further explore avenues into the diagnosis, prevention and treatment of the disease. We need your support to help us fund all the valuable projects that we receive. Research is the critical key to a future without Alzheimer's disease and other dementias.

If you would like to support the ASRP please visit: www.alzheimer.ca

Dr. B. Lynn Beattie

Mimi Lowi-Young

Mimi Lowi-Young
CEO, Alzheimer Society of Canada

Dr. B. Lynn Beattie, MD, FRCPC
Chair, Research Policy Committee

Overview: Alzheimer Society Research Program

Alzheimer's disease is a fatal, progressive and degenerative disease that destroys brain cells. It is the most common form of dementia, accounting for 64 per cent of all dementias in Canada.

Alzheimer's disease is not a normal part of aging. Symptoms include having difficulty remembering things, making decisions and performing everyday activities. These changes can affect the way a person feels and acts. There is currently no way to stop the disease, but research is improving the way we provide care while we continue to search for a cure.

Our program

Launched in 1989, the Alzheimer Society Research Program (ASRP) is a collaborative initiative of our provincial Alzheimer Societies, the Alzheimer Society of Canada (ASC), partners and donors who pull together to support research directed at both eradicating dementia and improving the lives of those affected by it.

The ASRP operates on a system of peer review whereby applications are assessed by two panels comprised of experts in the field.

1. What is Peer Review? An internationally accepted benchmark used in evaluating research based on scientific merit.

2. Who are Peer Reviewers? Experts within the field of research that is being funded. Their role is to provide recommendations on each application received, which is then used by the Alzheimer Society in making funding decisions.

The Quality of Life Panel evaluates applications that focus on aspects of dementia care and support, as well as ways to improve the experience of care by people with dementia living in long-term care homes, and their families. **The Biomedical Panel** evaluates applications that propose research into basic biological mechanisms related to brain changes associated with dimentia and into the identification of therapeutic agents to combat the disease.

Both panels meet once a year. Results from the meetings are communicated to all applicants each spring.

What we offer

Awards: Doctoral and Postdoctoral Awards support a new generation of bright scientists pursuing careers in the field of Alzheimer's disease and other dementias.

Award	Amount	
Doctoral	$22,000/ year	Offered to students enrolled in a PhD program
Postdoctoral	$41,500/ year (Quality of Life) $51,500/ year (Biomedical)	Offered to graduates with a PhD or MD who wish to gain additional experience

Grants: Young Investigator and Regular Grants support the work of new researchers who are entering the field of Alzheimer's disease and other dementias including established investigators.

Grant	Amount	
Young Investigator	$60,000 (Quality of Life) $75,000 (Biomedical)	Offered to researchers entering their first academic appointment
Regular Grant	$60,000 (Quality of Life) $75,000 (Biomedical)	Offered to established investigators

Research excellence through peer review

Our research program would not exist without the support of our Biomedical and Quality of Life Peer Review Panels. In 2012, 30 scientists from across Canada and the United States participated in the ASRP adjudication process. The Alzheimer Society would like to thank each member for their contribution:

Research Policy Committee:

A sub-committee to the Alzheimer Society of Canada Board of Directors which provides advisory oversight to the research efforts of the Alzheimer Society Research Program .

Chair: Dr. B. Lynn Beattie – University of British Columbia
Kathy Dewling – Hamilton, ON
Dr. Howard Feldman – University of British Columbia
Dr. Geoff Fernie – Univesity of Toronto
Dr. Serge Gauthier – Université de Montréal
Heather MacNeil – Mississauga, ON
Dr. Jane Rylett – University of Western Ontario

2012 Biomedical Peer Review Panel

CHAIR: Dr. Howard Feldman – University of British Columbia
Dr. Steffany Bennett – University of Ottawa
Dr. Sylvain Doré – University of Florida
Dr. Alan Evans – McGill University
Dr. Sébastien Hébert – Centre de recherche du ChUQ (CHUL)
Dr. Robin Hsiung – University of British Columbia
Dr. Laurent Lecanu – McGill University
Dr. Mario Masellis – University of Toronto
Dr. Patrick May – Eli Lilly & Co.
Dr. David Morgan – University of South Florida
Dr. Joanne McLaurin – University of Toronto
Dr. Stephen Pasternak – University of Western Ontario
Dr. Emmanuel Planel – Laval University
Dr. Eric Smith – University of Calgary
Dr. Carmela Tartaglia – University of Toronto
Dr. Aristotle Voineskos – University of Toronto
Dr. Donald Weaver – Dalhousie University
Dr. David Westaway – University of Alberta

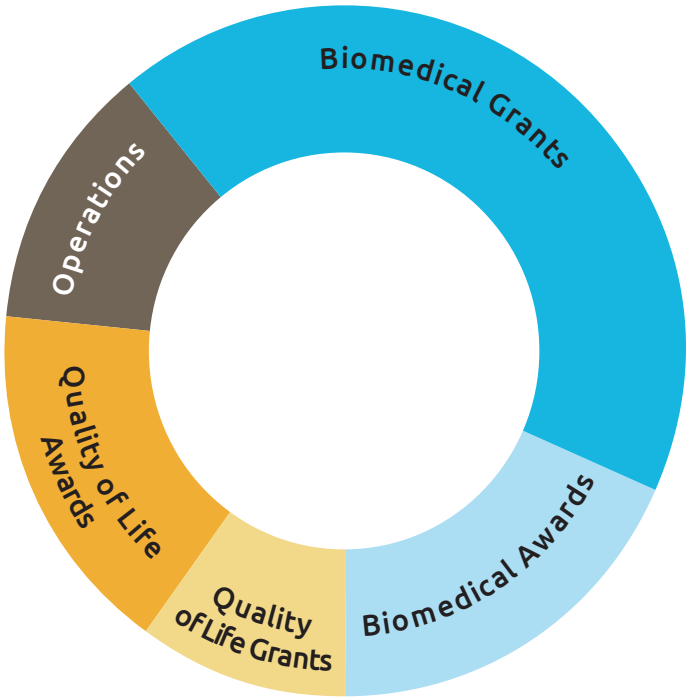
2012 Quality of Life Peer Review Panel

CHAIR: Dr. Geoff Fernie – University of Toronto
Dr. Lynn Beattie – University of Toronto
Dr. Neil Drummond – University of Calgary
Dr. Suzanne Dupuis-Blanchard – University of Moncton
Dr. Sven Joubert – Université de Montréal
Dr. Karen Kobayashi – University of Victoria
Dr. Carrie McAiney – McMaster University
Dr. Paige Moorhouse – Dalhousie University
Dr. Natalie Phillips – Concordia University
Dr. Vanessa Taler – University of Ottawa
Dr. Mary Tierney – University of Toronto
Dr. Frank Webbe – Florida Institute of Technology

Funding and financial information

Alzheimer Society Research Program (ASRP) Expenditures 2012-2013

Biomedical		
Grants	$	1,612,733
Awards	$	684,262
SUBTOTAL	**$**	**2,296,995**
Quality of Life		
Grants	$	602,897
Awards	$	407,800
SUBTOTAL	**$**	**1,010,697**
ASRP Operations		
	$	**467,788**
TOTAL	**$**	**3,775,480**



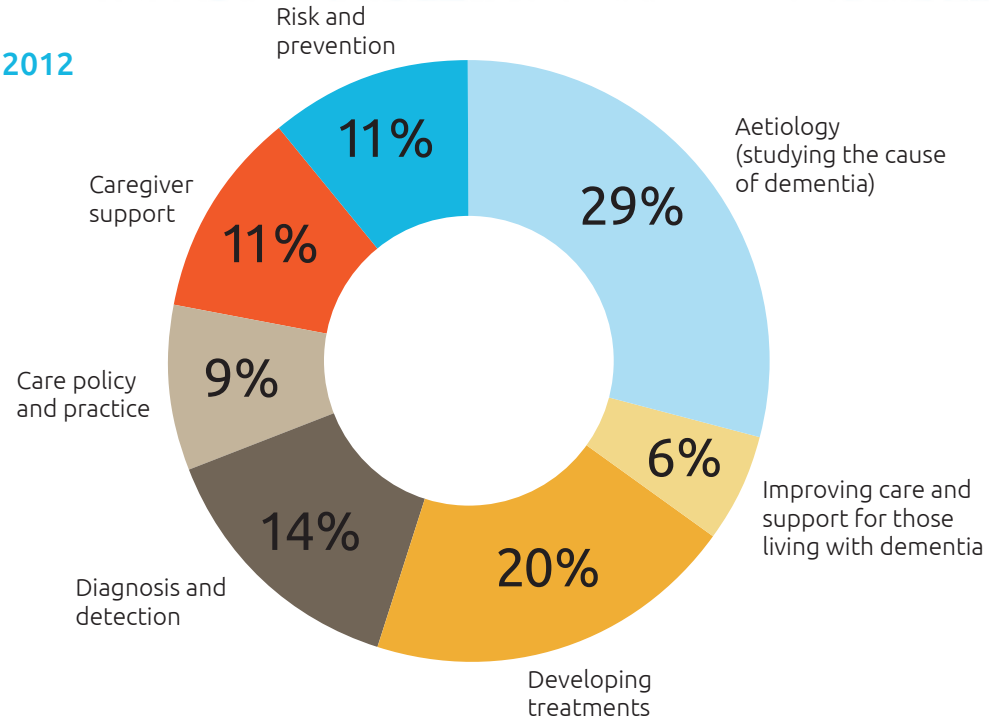
Alzheimer Society Research Program (ASRP) Partner Contributions, 2012

$ 3,775,480

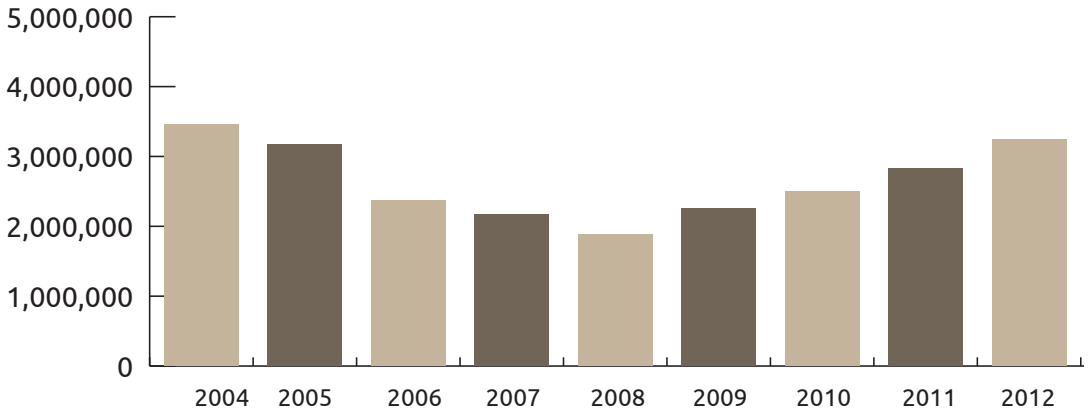
funding in grants and awards received

Alzheimer Society Partner Contributions	
Canada	$745,740
British Columbia	$500,000
Alberta	$190,938
Saskatchewan	$53,536
Manitoba	$90,000
Ontario	$ 1,575,000
Quebec	$128,924
New Brunswick	$412,013
Nova Scotia	$60,000
Prince Edward Island	$9,877
Newfoundland	$9,452
TOTAL	**$ 3,775,480**

Areas of research funded in 2012



History of funding



2012-2013 research competition overview

125 applications received Canada-wide

- **83 BIOMEDICAL**
- **42 QUALITY OF LIFE**

35 applications funded Canada-wide

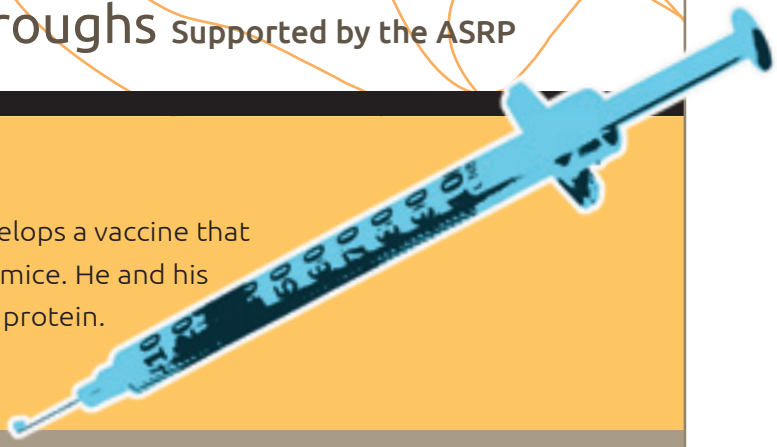
56/125 eligible for funding

35/56 funded

21 projects remain unfunded

= **$ 3,025,244** needed for further research funding

Canadian research breakthroughs **Supported by the ASRP**



2000

Dr. Peter St. George-Hyslop develops a vaccine that prevents Alzheimer's disease in mice. He and his team also discover the nicastrin protein.

2005

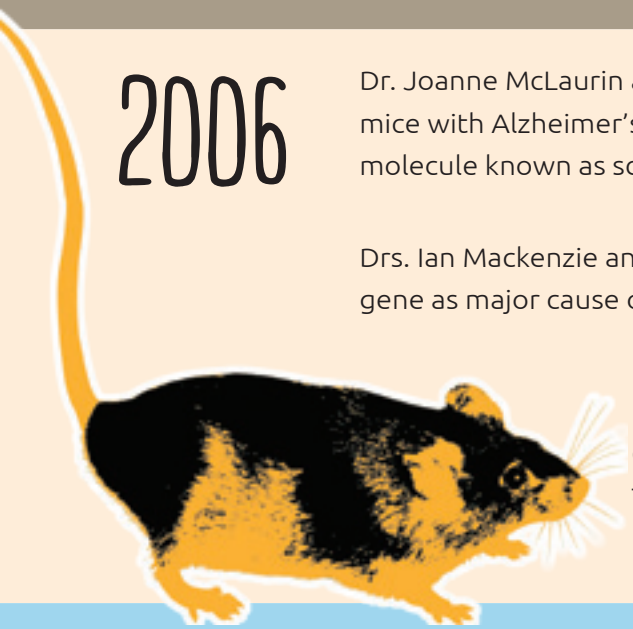
Dr. Debra Morgan leads the development of a Rural and Remote Memory Clinic for dementia patients in Saskatchewan-changing the philosophy of caring for people with dementia in rural and removed communities.

Drs. Vladimir Hachinaki and Sandra Black help to synchronize procedures used in evaluating vascular cognitive impairment, which is now being validated around the world. Their research has also influenced the understanding of interactions between Alzheimer's and cerebrovascular disease.

2006

Dr. Joanne McLaurin and colleagues stop the build-up of toxic plaque in mice with Alzheimer's disease, essentially curing the disease, using a small molecule known as scyllo-cyclohexanehexol.

Drs. Ian Mackenzie and Howard Feldman discover mutations in progranulin gene as major cause of Frontotemporal dementia.



Dr. Howard Chertkow chairs the Third Canadian Consensus Conference on the Diagnosis and Treatment of Dementia leading to the formulation of new clinical guidelines for physicians.

2008

Dr. Kenneth Rockwood starts the Canadian Dementia Knowledge Translation Network (CDKTN), a forum to exchange credible information about dementia research.

Select researcher profiles

Select researcher profiles

Katherine McGilton

Quality of Life Research Grant

University Health Network, Ontario

$112,410

An intervention to improve interactions between staff and residents with dementia

Dr. Katherine McGilton is a senior scientist at Toronto Rehabilitation Institute-UHN. She is an associate professor at the Lawrence S. Bloomberg Faculty of Nursing at the University of Toronto. Katherine holds an Ontario Ministry of Health and Long-Term Care (MOH&LTC) Nursing Mid-Career Scientist Award. She has research funding as the principal investigator from the Canadian Institutes of Health Research, Alzheimer Society of Canada, Nursing Research Fund, MOH&LTC, and the Canadian Health Services Research Foundation.

Dr. McGilton's study evaluates the effectiveness of communication care plans (CCPs) on resident–staff interactions and identifies factors that facilitate or impede implementation of CCPs by health-care providers. The Resident Centered Communication Intervention (RCCI) examines the cognitive-communication needs of residents with dementia. It provides nurses with practical strategies to communicate effectively with residents.

The findings will be used to establish guidelines for institutional best practices that are transferable to other health-care settings, where patients with communication difficulties require nursing and speech pathology services. Katherine's mother was diagnosed with vascular dementia/ AD many years ago, so she shares a very personal connection to the disease. Her knowledge about care has been instrumental in guiding her family's actions.

Receiving funds from the Alzheimer Society has encouraged Dr. McGilton to continue working in this important area of care. Until a cure is found, investigators must continue to identify best care practices that influence quality of life for persons with AD and the quality of work life for caregivers who deliver that care.

Simon Duchesne

Biomedical Research Grant

Université Laval, Quebec

$224,318

Automated hippocampal segmentation certification: a necessary step for trajectory research in Alzheimer's disease

Dr. Simon Duchesne was born in Sept-Iles and grew up in Quebec City, before attending the Royal Military College of Canada (Kingston, Ontario) where he obtained his B.Eng. in Engineering Physics in 1993. Dr. Duchesne returned to academia in 1999, obtaining his MSc and PhD in biomedical engineering from McGill University in 2005. Following postdoctoral studies in France, he returned to Quebec City in 2007, where he founded his laboratory at the Institut universitaire en santé mentale de Québec, dedicated to developing neuroimaging-based biomarkers for neuropsychiatric diseases, including Alzheimer's disease (AD).

The Certification: Trajectory project will produce factual knowledge for AD research. The major contribution of this project is the incorporation of hippocampal atrophy information, a known biomarker of AD progression, into a multimodality statistical model able to track the impact of the disease through time. This innovative project will mark the first time that a disease model is created on such a large scale and time frame.

Alzheimer's is such a completely devastating disease that it has us questioning some fundamental aspects of our understanding of self. Scientifically, it is an extremely complicated problem, and necessitates a truly multidisciplinary approach, which Dr. Duchesne finds very stimulating. Besides providing the important recognition of peer-reviewed acceptance and the capacity to fulfill his research goals, ASRP funding allows Dr. Duchesne to participate in key international efforts in neuroimaging of dementias, at the highest level.

Alex Mihailidis

Quality of Life Research Grant

University of Toronto, Ontario

$118,040

Toward developing an assistive technology framework for older adults with Alzheimer's disease and other dementias: A user-centered design approach

Dr. Alex Mihailidis was born and raised in Toronto where he currently holds multiple positions at the University of Toronto (U of T) and Toronto Rehab Institute. He is also very active in the rehabilitation engineering profession, currently as the president for RESNA (Rehabilitation Engineering and Assistive Technology Society of North America).

Dr. Mihailidis has been conducting research in the field of pervasive computing and intelligent systems in health for the past 15 years. Dr. Mihailidis became interested in Alzheimer's research after an encounter with another engineer, who had described the challenges he faced in caring for his wife. This shifted Alex's focus to creating a computer-based prompting system that would help people living with Alzheimer's.

The overall objective of his study is to construct a generalizable framework to be used by designers of assistive technologies (i.e., interventions that are contextually aware and provide user support, while simultaneously reducing caregiver burden) that support activities of daily living for older adults with Alzheimer's disease and other dementias.

The Alzheimer Society Research Program (ASRP) has been crucial in Alex's career. It has provided him with funding at all levels of his research: as a doctoral student, postdoctoral fellow, Young Investigator and most recently, as the recipient of a grant. The ASRP has allowed him to grow as a researcher and has contributed to the success he is recognized for today.

Allison Cammer

Quality of Life Doctoral Award

University of Saskatchewan, Saskatchewan

$61,590

An examination of nutrition care policy and care staff decision-making practices regarding rural long-term care residents with dementia

Allison Cammer grew up on a farm near Webb, Saskatchewan. She is a registered dietitian with an MSc in community health and epidemiology. She works with an interdisciplinary team of researchers and clinicians at an early-stage rural and remote memory clinic, and she has returned to the University of Saskatchewan to pursue a PhD in Nutrition. Allison's research study is entitled "Nutrition Policy and Care Staff Decision-Making Practices Regarding Rural and Urban Long-Term Care Residents with Dementia" and is under the co-supervision of Drs. Debra Morgan and Susan Whiting.

The nutritional health of long-term care residents with dementia is central to quality care. Quality nutrition is an important factor in wellness and can help to prevent physical decline among persons with dementia, and proper hydration and nutritional status can help prevent or reduce behavioural symptom expression of dementias.

Allison's PhD research will focus on nutrition policy in long-term care and how direct care workers make decisions about dietary intake and feeding. Care in both rural and urban long-term care will be examined in order to better understand available supports and resources that staff use at these facilities. Allison hopes to gain an understanding of the key features considered by care staff when making daily, person-centred care decisions about nutrition intake in order to better inform policy, education, and training efforts to improve health outcomes in long-term care.

Allison is grateful to be a recipient of this generous award and hopes to make an important contribution to Alzheimer's research and, ultimately, improve care for persons with dementia.

Select researcher profiles

Sienna Caspar

Quality of Life Doctoral Award

University of British Columbia, British Columbia

$41,060

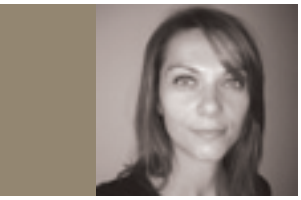
The Influence of institutional texts on the provision of person-centred care in long-term care settings

Sienna Caspar graduated from the University of South Alabama with a BSc in therapeutic recreation. She worked as a certified therapeutic recreation specialist in long-term care (LTC) settings in Canada for over 20 years. From 2003 to 2007, she was a national trainer for the American Therapeutic Recreation Association's Dementia Practice Guideline—Competency Training. In 2008, she received a MA in Gerontology from Simon Fraser University. Sienna is currently a PhD candidate in the Interdisciplinary Studies Graduate Program. For her dissertation, she conducted an institutional ethnography in three residential care facilities in British Columbia.

The aim of Sienna's study is to improve our understanding of how the social organization of resident care within LTC settings supports or inhibits the provision of person-centred care. She hopes to identify how to make changes to the social organization of residential care facilities so that the implementation of person-centred care can be both feasible and sustainable.

Sienna has a very personal connection to the disease. After being diagnosed with stage 4 cancer, her husband developed dementia due to leptomeningeal carcinomatosis. She lived with him on a palliative care unit for three months and experienced first-hand what it is like to be a family member navigating the health-care system while caring for a loved one with dementia.

Receiving funding from ASRP has enabled Sienna to be a full-time student and researcher. This was essential during her data collection as she was able to accommodate the schedules of the study participants and subsequently obtain a vast amount of rich data.



Rozanne Wilson

Quality of Life Post Doctoral Award

University of British Columbia, British Columbia

$40,500

This project is jointly funded by the Alzheimer Society Research Program (ASRP) and the Canadian Dementia Knowledge Translation Network through the Research Training Awards Program on Knowledge Translation and Dementia

Communication strategies training for formal caregivers assisting residents with moderate to severe Alzheimer's during activities of daily living

Rozanne Wilson grew up in Vancouver and obtained her BA (first class honours) in psychology at Simon Fraser University. She recently completed her PhD at the University of Toronto in the department of speech-language pathology, under the co-supervision of Drs. Elizabeth Rochon and Alex Mihailidis. Rozanne's PhD thesis examined formal caregivers' use of communication strategies while assisting residents with moderate and severe Alzheimer's disease. She recently returned to Vancouver to begin her postdoctoral research fellowship at the School of Audiology and Speech Sciences at the University of British Columbia.

Rozanne has always been in awe of the complexity of the human brain and intrigued by the behavioural consequences associated with brain pathologies. During her time at Simon Fraser University, she immersed herself in studies centred on cognitive neuropsychology and developed a keen interest in neurodegenerative diseases, at the same time discovering a passion for issues facing older adults with cognitive impairments.

The purpose of Rozanne's postdoctoral research project is to develop, design, implement, and evaluate a communication training program to promote caregivers' use of evidence-based communication strategies while assisting residents with dementia during the completion of daily tasks.

Rozanne is extremely grateful to be the recipient of a generous ASRP/CDKTN postdoctoral award, which will provide her with invaluable opportunities to build her research capacity in the areas of knowledge translation research and practice in dementia. This funding will above all, allow her to complete a research project that has the potential to enhance the quality of care for individuals with dementia. It will also allow her to disseminate research findings at conferences and in peer-reviewed scientific journals, and will no doubt, contribute to her professional and career development.

Patricia Leighton

Biomedical Doctoral Award

University of Alberta, Alberta

$61,590

Uncovering mechanisms of A-beta 42 toxicity and normal roles of amyloid precursor protein (APP) using zebrafish models of Alzheimer's disease.

Patricia Leighton was raised in rural Alberta. She completed a BSc in biology at the University of Alberta in 2010 and received an Alberta Heritage for Medical Research summer studentship to work in Dr. Ted Allison's lab. She began her biological sciences graduate program in September 2010.

Patricia became interested in Alzheimer's disease (AD) after she volunteered at a nursing home, where she spent time with people who were living with AD or related dementias. She was keen to study medically relevant topics as an undergraduate student, so after meeting Dr. Allison and visiting his lab, she decided to pursue a graduate program with his research group.

Patricia's research involves Aβ peptides, which are a major constituent of Alzheimer's disease plaques that contribute to memory impairment and loss of cognitive functions by damaging neurons (nerve cells) and synapses (the structures where neurons transmit signals). One of her goals is to develop zebrafish Alzheimer's disease models that will be used to study Aβ neurotoxicity within an intact brain and for high throughput screens of potential therapeutics.

The funding from ASRP has greatly enhanced Patricia's graduate student experience by enabling her to devote more time to her research versus working as a teaching assistant. She has been able to work on publishing her research and has contributed to three peer-reviewed publications. Thanks to ASRP funding, she was also able to purchase a software program to facilitate her research and to attend an international conference.

Carrie Esopenko

Biomedical Post-Doctoral Award

Baycrest Centre for Geriatric Care, Ontario

$81,000

A multimodal neuroimaging and behavioural examination of the relationship between repetitive traumatic brain injuries and aging in retired National Hockey League players

After completing her BA at the University of Calgary, Carrie Esopenko moved to Saskatoon to do her PhD in psychology at the University of Saskatchewan. She is now a postdoctoral fellow at the Rotman Research Institute at Baycrest Hospital in Toronto.

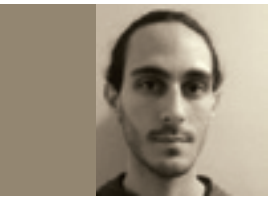
Carrie's current research focuses on the interaction between traumatic brain injury and unhealthy brain aging (e.g., Alzheimer's disease [AD]). The goal of her research is to develop functional brain biomarkers that are sensitive to unhealthy brain aging in individuals with repetitive brain injury. This will ultimately aid in earlier identification of individuals at risk for Alzheimer's disease and other dementias.

Carrie's grandmother and all of her grandmother's siblings developed AD in their mid-60s. Carrie watched for 13 years as her grandmother's mental health declined and struggled to make sense of it all while coping with the loss of an incredible woman. It was because of this experience that Carrie became interested in understanding Alzheimer's disease, treatments, and how we can develop better diagnostic/assessment techniques.

For Carrie, the most rewarding aspect of this work is knowing that participating in her research has helped people living with the disease feel better. Participants find it helpful to know how they are doing cognitively and they also value the work that she does, believing that her research will help other people and society as a whole.

Because of ASRP funding, Carrie has been able to present her research at multiple conferences, network with other researchers and leaders in the field, and develop research connections and potential collaborations. It has also led to an Early Research Award from the Ontario Research Coalition.

Select researcher profiles



Franck Petry

Biomedical Doctoral Award

Université Laval, Quebec

$61,590

The effect of Type 1 diabetes on pathogenesis of tau in vivo.

Franck Petry is a PhD student in neurobiology at Laval University. Franck came to Canada from France, where he completed his undergraduate studies and his Master's degree. He decided to pursue a PhD in North America because of the many opportunities that were offered here. Quebec City seemed like the perfect fit.

Franck has always been interested in neuroscience, especially in brain disorders. He became fascinated with Alzheimer's disease (AD) while taking a class on brain pathology during his Master's Program. From that moment on, Franck decided to specialize in this incurable disease, with the hope of improving our knowledge of it and helping to find new therapeutic approaches.

Franck is currently working in the lab of Dr. Emmanuel Planel, who is an expert in tau pathology and is also an ASRP grant recipient. The aggregation of hyperphosphorylated forms of tau is considered one of the hallmarks of Alzheimer's disease, so being in Dr. Planel's lab will help Franck learn more about tau and as a result, improve our knowledge of Alzheimer's disease.

As a scientist involved in medical research, Franck spends most of his time in the laboratory. Even though his interactions with people who are living with the disease are limited, he emphasizes that knowing his work might improve treatment options and help people is the most important aspect of his work.

Romina Mizrahi

Biomedical Research Grant

Centre for Addiction and Mental Health, Ontario

$149,024

F-18-FEPPA: a novel in-vivo molecular biomarker of neuroinflammation in Alzheimer's disease

Dr. Romina Mizrahi is an associate professor of psychiatry at the University of Toronto, as well as a clinician scientist, PET centre, at Toronto's Centre for Addiction and Mental Health.

Alzheimer's is a very debilitating disease, and Dr. Mizrahi hopes to understand its neurochemistry so she can find new molecular targets to prevent it. The goal of Dr. Mizrahi's research is to develop a better understanding of the pathophysiology of schizophrenia and its treatment. In pursuit of this goal, she has used phenomenology and brain imaging techniques capitalizing on the merge between these two approaches.

Her current research program has three aims: The first is to investigate the relationship between stress and psychosis. She will tap into daily experiences of stress and attenuated psychotic symptoms in persons at risk for psychosis, in those that misuse cannabis and experience psychotic symptoms and in patients with schizophrenia. Her second goal is to investigate the role of neuroinflammation in both people at risk of and living with schizophrenia; and to understand the relation between neuroinflammation and brain function and structure. The third goal is to investigate the role of neuroinflammation in Alzheimer's disease (AD) and in those at risk (mild cognitive impairment).

Funding from the Alzheimer Society has helped Dr. Mizrahi carry out the first AD studies that look at microglial activation/neuroinflammation, a process she believes is altered in AD. It has also helped her obtain further funding to study its putative prodrome (mild cognitive impairment), both of which will open the road for novel treatments and possibly even stop or delay the disease.

Yanlin Wang

Biomedical Doctoral Award

University of Alberta, Alberta

$41,060

Role of the insulin-like growth factor-II (IGF-II) receptor in beta-amyloid metabolism and its implications in Alzheimer's disease pathology

Yanlin Wang was born in Guilin, China, where he obtained his bachelor of biological engineering at Beijing Institute of Technology. With his passion to discover the causes of psychiatric disorders, he decided to come to Canada to get his MSc in psychiatry at the University of Saskatchewan. He became interested in research on Alzheimer's disease during his Master's training and chose to continue his study, on the neuropathology of Alzheimer's disease, in the department of psychiatry at the University of Alberta. He is currently in the third year of his PhD program.

Many researchers believe that Alzheimer's disease (AD) is caused by an increasing production and accumulation of beta-amyloid. Yanlin and his colleagues have found that another protein present in almost all neurons in the brain, insulin-like growth factor-II (IGF-II) receptor, may have a role in regulating the production and clearance of beta-amyloid.

Their current study suggests that the extremely high level of IGF-II receptor may increase the production and toxic effects of beta-amyloid in cells, and they hope to provide a better understanding of the mechanism by which this happens, which could also pave the way for early diagnosis and treatment of AD.

Yanlin is proud to be a researcher in Alzheimer's disease and appreciates the support he has received from the ASRP for his project. Funding has allowed Yanlin to attend national and international conferences where he has had the opportunity to interact with other researchers. Yanlin is ready for the challenge and hopes to make a valuable contribution to the field.

Maria Carmela Tartaglia

Biomedical Young Investigator Grant

University of Toronto, Ontario

$149,940

Assessing changes in social cognition and personality in neurodegenerative diseases and determining their neuroanatomical correlates

Dr. Maria Carmela Tartaglia was born in Schefferville, Quebec. She is an assistant professor at the University of Toronto—Tanz Centre for Research in Neurodegenerative Disease and a cognitive neurologist at Memory Clinic—Toronto Western Hospital. Dr. Tartaglia received her medical degree from McGill University, completed her residency at the University of Western Ontario and did three years of clinical/research fellowship in cognitive/behavioral neurology at the University of California, San Francisco Memory and Aging Center.

The ultimate goal of Dr. Tartaglia's research program is to provide early, pathology-specific treatments to her patients.

Obtaining funding for the area of research that Dr. Tartaglia is immersed in can be difficult as it is neither classical neurobiology nor psychosocial. The ASRP was instrumental in helping Carmela launch her research program into social cognition in neurodegenerative disease, by providing her with funds to start acquiring data and to ultimately show the utility of such research.

There is growing evidence that injury to specific areas of the brain is associated with changed perception, regulation, control of emotion and behavior. This is particularly relevant to Alzheimer's disease since people with dementia experience personality changes which can cause significant distress for them and their caregivers. Dr. Tartaglia wants to know what makes us who we are and what it is about the brain that causes these changes in personality so she is comparing these phenomena across three common neurodegenerative diseases: Alzheimer's, Parkinson's and Frontotemporal dementia, all of which attack different areas of the brain.

Select researcher profiles

Emmanuel Planel

Biomedical Research Grant

Université Laval, Quebec

$150,000

Real-time imaging of brain immune responses in mouse models of tauopathies

Dr. Emmanuel Planel was born in Paris and studied in France up to the Master's level. After receiving a scholarship from the Japanese Ministry of Education, he completed his PhD in Japan and subsequently his first post-doc with a European Union Fellowship. Dr. Planel completed his second post-doc in New York, first at New York University and then at Columbia University. In November 2008, he was recruited by Laval University to develop a laboratory that specialized in the neurobiology of tau, a protein involved in Alzheimer's disease pathology.

Dr. Planel proposes to develop novel biophotonic transgenic mouse models of AD pathology for live imaging of processes associated with brain injuries and repair. He believes that these models will be instrumental in better understanding the genesis of brain pathologies and will help us to create more efficient therapeutic strategies.

Although Dr. Planel always wanted a career in research, he was not initially trained as a neuroscientist. He became more and more concerned with AD as his grandmother, who had the disease, was declining. With a bit of luck on his side, he found a laboratory working on Alzheimer's disease pathology that was eager to take him in, despite his lack of experience.

ASRP funding has been crucial in the development of Dr. Planel's career. It allowed him to explore new research ideas that would have otherwise been considered too novel or risky to fund by other organizations. It also helped to boost the productivity of his laboratory by allowing him to recruit more PhD students and postdoctoral fellows through the ASRP.

Liisa Galea

Biomedical Research Grant

University of British Columbia, British Columbia

$150,000

Estrone- versus Estradiol-based HRTs effects on cognition and brain plasticity: interaction with reproductive experience

Dr. Liisa Galea hails from Toronto, Ontario, and is a full professor in the Centre for Brain Health and department of psychology at the University of British Columbia. She is part of the Brain Research Centre, Neuroscience Program and HELP (Human Early Learning Partnership). Dr. Galea obtained her PhD in neuroscience from the University of Western Ontario under the supervision of Drs. Martin Kavaliers and Klaus-Peter Ossenkopp, and her MA under the supervision of Dr. Doreen Kimura. Her post-doctoral work was completed at the Rockefeller University in NYC under the supervision of Dr. Bruce McEwen.

Dr. Galea's expertise is in the area of neuroendocrinology, specifically gonadal and adrenal hormone influences on behaviour (cognition, emotional behaviour) and neuroplasticity (neurogenesis, dendritic morphology). She was among the first researchers worldwide to study adult neurogenesis and developed the first animal models of postpartum depression.

Dr. Galea's research examines the effect of hormones, stress and reproductive experience on adult neurogenesis (the birth of new brain cells in the adult) and subsequent behaviour. Understanding how neurogenesis is regulated may provide clues for devising new therapeutic treatments for diseases that involve neuronal loss, such as Alzheimer's disease.

ASRP funding allows Dr. Galea to work on her research and collaborate with researchers that work with AD patients. The data they collect from the Alzheimer's clinic at UBC hospital will be invaluable to determining if women's brain health is impacted by different HRTs dependent on their reproductive experience. The funding is crucial to knowledge translation and she is very grateful for every penny.

Joshua Armstrong

Quality of Life Post Doctoral Award

Dalhousie University, Nova Scotia

$81,000

Clinico-mathematical approach to the fog of Alzheimer's disease: Application of novel mathematical methods to large health databases

Joshua Armstrong was born and raised in Thunder Bay, Ontario, and now lives in Halifax, Nova Scotia. Josh decided to specialize in gerontology while doing his Master's in Applied Health Sciences, at Lakehead University. The decision to focus his research on aging led him into the interdisciplinary Aging, Health & Well-Being PhD program at the University of Waterloo, where he developed expertise in epidemiology, applied health sciences, and quantitative research methods. After finishing his doctoral thesis in December 2012, Josh started a postdoctoral fellowship at Dalhousie University.

Joshua's research will utilize advanced mathematics and quantitative analyses to investigate the dynamic relationships between cognitive states, neuropathologies, and frailty in older adults. This work will be conducted using data collected from various large longitudinal studies including the Honolulu-Asian Aging Study.

Joshua and his family know all too well about the impact of Alzheimer's disease. His grandmother developed Alzheimer's in her 70s and they were forced to watch as her condition slowly deteriorated over many years. Although he has only recently begun his post-doctoral fellowship, Joshua says that the funding he received will have a massive impact on his future career. It has allowed him to travel across the country after finishing his PhD to begin work with a fantastic team at Dalhousie University. The funding has provided him with an enriching and exciting experience early in his career as an academic.

Hélène Kergoat

Quality of Life Research Grant

Institut universitaire de gériatrie de Montréal, Quebec

$119,800

Validation of screening tools for visual impairment in middle stage and late stage dementia

Hélène Kergoat is a full professor at the School of Optometry, Université de Montréal, and is both a clinical optometrist (Université de Montréal) and a vision science researcher (University of Waterloo). She has worked for approximately 20 years with the vulnerable elderly, through the Institut universitaire de gériatrie de Montréal, where she supervises optometry students in the delivery of eye and vision care to patients. Hélène is both a FRSQ Clinical Scholar and a CIHR Scholar. The objective of much of her research is to improve the delivery of eye and vision care services to the vulnerable elderly, as well as to improve the vision and quality of life of this population.

Hélène and her colleagues have customized and improved a screening tool for vision problems that will be tested in elderly persons with cognitive impairments. If their research shows that this tool is effective in screening for vision problems in this population, it could then be made available to long-term care facilities.

Screening could be performed by people who are not vision care professionals, thus broadening the use of the tool and improving service delivery. This study is innovative in that, to date, no tool of its kind has been validated in a population affected by moderate to severe dementia.

This grant will enable Hélène to expand and consolidate the research she has been pursuing in this area for many years. The grant will also enable her to invite young researchers to participate in these projects, who will then be able to pass on their experience to future generations.

Other research projects **in brief**

Biomedical Doctoral Awards

Chulmin Cho, McGill University, Quebec ($61,590). Therapeutic importance of drebrin in amelioration of synaptic dysfunction in Alzheimer's disease.

Félix Jules, Université de Montréal, Quebec ($41,060). Characterization of a novel therapeutic target for the treatment of Alzheimer's disease.

Maxime Montembeault, Centre de Recherche de L'Institut Universitaire de Gériatrie de Montréal, Quebec ($61,590). Characterization of semantic deficits and their anatomical bases in Alzheimer's disease and Semantic dementia patients.

Maria Lisa Putorti, McGill University, Quebec ($61,590). Effects of Caspase-6 gene polymorphisms in Alzheimer's disease.

Deborah Schwartz, Baycrest Centre for Geriatric Care, Ontario ($61,590). The impact of visceral fat and sex-steroid hormones on brain health.

Amanda Tyndall,University of Calgary, Alberta ($61,590). Cardiovascular fitness modulation of cerebrovascular reserve and cognition in older adults.

Biomedical Postdoctoral Awards

Shireen Hossain, McGill University, Ontario ($81,000). Defining the process of aggregate-formation of AB42 peptide in Alzheimer's disease and its relevance to toxicity and disease.

Biomedical Grants

Isabelle Aubert, Sunnybrook Research Institute, Ontario ($150,000). Treatments using MRI-guided focused ultrasound to improve neuronal survival and cognitive functions in a pre-clinical model of Alzheimer's disease.

Sheena Josselyn, Hospital for Sick Children, Ontario ($150,000). Examining the role of AMPA receptor endocytosis in the memory deficits associated with Alzheimer's disease.

Georges Levesque, Laval University, Quebec ($150,000). Ribozyme as a new therapeutic molecule.

Joanne McLaurin, University of Toronto, Ontario ($145,520). In situ concerted expression of growth hormone and prolactin rescue defects in neurogenesis in the TgCRND8 mouse model of AD.

Hemant Paudel, McGill University, Quebec ($150,000). Restoration of synapse loss in Alzheimer's disease by replenishment of drebrin in the CNS. Synapses are tiny gaps between neurons, across which signals pass.

Eric Smith, University of Calgary, Alberta ($37,848). Neuropsychological and cerebral blood flow profile of cerebral amyloid angiopathy.

Quality of Life Doctoral Awards

Cassandra Brown, University of Victoria, British Columbia ($41,060). Loneliness, social cognition, and social participation in carers for partners with dementia.

Correne DeCarlo, University of Victoria, British Columbia ($61,590). Biological aging: predicting age-related cognitive decline.

Quality of Life Postdoctoral Awards

Lana Ozen, Lakehead University, Ontario ($81,000). The efficacy of Mindfulness-Based Cognitive Therapy (MBCT) to improve depression symptoms and quality of life in individuals with Alzheimer's disease and their caregivers: a pilot study.

Quality of Life Grants

Carol Hudon, Centre de recherché de l'Institut universitaire en santé mentale de Quebec, Quebec ($118,698). Establishing a therapeutic intervention targeting the nature of the burden and support needs of individuals with a loved one suffering from a mild amnesic cognitive impairment.

Discovery, collaboration and hope

Great strides in health research continue to make headlines across our country and around the world. Canadian researchers are amongst the most lauded, making new scientific discoveries that further our knowledge and provide hope for future health innovations—the kind of innovations that lead to new, more effective treatments and one day to cures for some of the most difficult medical challenges, including Alzheimer's disease.

The Alzheimer Society of Canada (ASC), its volunteers and donors play an essential role in supporting Canadians with Alzheimer's disease and other dementias, advocating for better care and support, and funding the research that will lead to a future without this devastating disease.

At Canada's Research-Based Pharmaceutical Companies (Rx&D), we are honoured to partner with ASC. We share a commitment to the future of the healthcare system in Canada and the sustainability of our life sciences sector. With over 50 member companies, we partner with researchers across the country to transform scientific discoveries into new medicines and vaccines that help Canadians live longer, healthier, and more productive lives.

The road to new medicines is long and requires both commitment and resilience to make a difference—nowhere more so than in the quest to find new treatments for Alzheimer's disease. While some media headlines have highlighted challenging results in late stage Alzheimer's drug development, let me assure you that our companies and researchers in Canada and around the world remain committed to finding new treatments. While these challenges can be discouraging, we learn from them, bringing us closer to successful new therapies.

We also work with governments to ensure Canadians have access to the latest medications and to create an attractive Canadian environment for international research investment. A level playing field in intellectual property protection can lead to more investment in research, development and clinical trials for new medicines here at home. This is good for Canadian patients, researchers and communities: 75 per cent of our investment is in clinical trials, and every clinical trial that takes place in Canada increases the opportunity for Canadian patients to benefit from new and potentially life-saving medicines. Canada has top physicians, scientists, universities and research institutions, which compete on a level playing field with other countries for investments in research. We remain appreciative of the support from the Alzheimer Society of Canada in this work.

Collaboration is the key. By working together with governments, health charities and other stakeholders we build hope for the future. New, more effective medicines are a critical component to the sustainability of Canada's healthcare system, and to Canadians experiencing the best health outcomes possible.

Congratulations to the ASC's staff, researchers, donors and volunteers who make such an important contribution in communities from coast-to-coast-to-coast. We are proud to partner with you, and to celebrate your leadership and commitment to the 747,000 Canadians living with Alzheimer's disease and other dementias and their families.

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Russell Williams, President
Rx&D, Canada's Research-Based Pharmaceutical Companies

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