



McGill

Faculty of
Medicine

Annual Reporting for Faculty Supported Research Centres and Networks

All Centres (provisional Centres; McGill Centres), Research groups and Networks that receive funding from the Faculty of Medicine are required to provide two components of reporting:

- Annual Report of Activities, Outcomes
- End-of-Year Financial Report/Proposed Budget

The Annual and End of Year Reports covering the period from the 1st May until the 30th April are due by 4pm on May 25th 2018. Future funding will be dependent on the prompt receipt of all documents as well as the evaluations made by the committee *and* the Faculty funds available.

The completed Annual Report and the Financial Statement should be forwarded by email to:

**The Research Office at riac.med@mcgill.ca
Faculty of Medicine Research Office
Phone: 514-398-5815**

Annual Report for Faculty of Medicine Funded Centres and Networks

The Annual Report should be set in the context of the Centre's, Core facility's and Network's overall goals and objectives, programs and research priorities, performance indicators outlined in the application (or subsequently developed), activities and strategies.

Please provide the following:

1. Name of Centre, Unit or Institute: McGill University Research Centre for Studies in Aging
2. Name and contact information of the Director and/or Administrative Assistant:
Director: Dr. Pedro Rosa-Neto, MD, PhD, Neurologist, Alzheimer Disease Research Unit, Associate Professor of Neurology & Neurosurgery, Psychiatry and Pharmacology and Therapeutics at McGill University, affiliated to the Douglas Hospital Research Centre.
Tel. (514) 766-2010
pedro.rosa@mcgill.ca

Administrator: Silvana Aguzzi, McGill University Research Centre for Studies in Aging
Tel. (514) 766-2010
silvana.aguzzi@mcgill.ca
3. Is the Centre recognized as an official Senate approved McGill Research Centre?
Yes, the Centre is recognized as an official Senate approved McGill Research Centre
4. The McGill Senate approved the Centre as the McGill Centre for Studies in Aging on October 1st, 1984.
5. Please provide the **URL of the Research Centre's or Network's web site**.
Note: The Research Centre's or Network's website should contain the following information:
 - all sources of funding support,
 - the List of Members and their institutional affiliation,
 - the activities supported by the Research Centre, Core Facility or Network, and
 - Annual Reports.
URL: <http://www.aging.mcgill.ca> ; www.mcsa.ca
6. A summary of the past year's goals and objectives, programs and research priorities and any changes to these that may have occurred during the past year. Please indicate the extent to which the objectives have been met. **(limit 200 words)**

The McGill University Research Centre for Studies in Aging (MCSA) achieved all goals and objectives expected for 2017. Established in 1996, the MCSA Education Committee successfully met on a quarterly basis and accomplished a series of Knowledge Transfer and Public Education activities including 25 Brainy Boomer Lectures. On June 8, 2017 the MCSA integrated

Affiliate/Associate Members and Donors by organizing an annual reception where members were invited to review Centre's research activities with the Director. A one day event Open House – Health Day - September 15th, 2017 was also organized by the MCSA Education Committee to inaugurate their 10th year Brainy Boomer Lecture Series Anniversary. On September 24th, 2017 the Centre participated for the 7th year in the Marathon Oasis as Team MCSA as part of the Centre's prevention incentive. An interactive kiosk was also held on October 20th, 2017 at the McGill University Health Fair for Staff and Faculty.

As part of our research efforts, the MCSA continues to foster private partnerships to expand the research capacity to novel neuroimaging techniques capable to better diagnose dementia as well as dementia therapies. We are also developing therapies and preparing our first clinical trial in conjunction with the Montreal Neurological Institute, Kalgene pharmaceuticals and the National Research Council.

Similarly to previous years, in 2017, we have made a number of significant discoveries published in reputable and high impact journals (see references). The Centre has been extremely successful in obtaining operating grants. Finally, from a business development perspective, the donation strategy implemented in 2017 was maintained and resulted in an increase of 18% of our donations.

Medesync EMR (Electronic Medical Record) was implemented at the McGill University Research Centre for Studies in Aging, Alzheimer Disease Research Unit on September 11th 2017. Medesync is a web based EMR program which can be customized to our unique clinic needs. It facilitates the transmission of pharmacy prescriptions, test requisitions, etc. and customizes our patient notes and summaries. The goal of the use of the Medesync system is to eventually be a paperless clinic.

In 2017 we also admitted 30 new McGill and International trainees at undergrad, graduate and postdoc levels. We also had 5 international scholars.

7. Please document **the major achievements** resulting from the use of the Funds from the Faculty, including any advances in knowledge, relevant publications, or international collaboration. You may select from the menu of reporting items/performance indicators in Appendix 1 that may be relevant, but must include, at minimum, information on publications/presentations, outreach activities, quality of the training environment. (Please limit your text response to a maximum of **1 page of prose. Please include lists of publications, grants, activities as appendices.**)

The Funds from the Faculty of Medicine supporting the Centre contribute exclusively to two of the administrative positions of MCSA: (1) A management position, held by Silvana Aguzzi, who is involved in administrative, research and KT activities of the Centre, and (2) a development position (part-time), held by Alexandra Triantafillopoulos, who contributes to KT and fund-raising related activities of the Centre (3) Both positions also contribute to research/administrative activities as they assist the Director of the clinical research unit Dr. Gauthier and Dr. Rosa-Neto. Achievements resulting from the use of Funds from the Faculty should thus make reference to research, teaching and administrative accomplishments. These are:

7.1 KT activities:

- **Public lecture series - Brainy Boomers**; 25 lectures throughout the 2017/2018 report period); this lecture series takes place at various dates and locations throughout Montreal. In 2017/2018, the McGill University Research Centre for Studies in Aging held a total of twenty-five public lectures (see Appendix 3). The public lecture series

continues to be one of the core KT activities of our Centre. For the 2018/2019 reference period, we plan an equal number of these lectures (25) and a Symposium entitled: “Aging in the 21st Century,” in celebration of International Seniors Day on October 5, 2018.

- **Annual Member and Donor Meeting** - On June 8th, 2017 the MCSA integrated Affiliate/Associate Members and Donors by organizing an annual reception. Dr. David H. Eidelman, MD, CM, FRCPC, FACP, Dean of Faculty of Medicine, attended the reception and met with Centre’s Director and MCSA Research Team. Centre’s Members were invited to review the Centre’s research and activities with the Director. The Centre’s scientists then shared accomplishments in research findings and discoveries of the past year and explained new clinical trials and their therapeutic promises to members and donors of the Centre. Research Students/International Visiting Scholars, were introduced and each had the opportunity to provide a short summary of their research project. The Donor appreciation event, is a meaningful way to inform and give donors, guests, volunteers a memorable experience, builds expanding interest and continued support to our Centre’s cause.
- **“Journée Santé – Health Day”** A one day Open House event - September 15th, 2017 was also organized by the MCSA Education Committee to inaugurate their 10th year Brainy Boomers Lecture Series Anniversary (2007-2017). Participants were invited to register and attend various stations to evaluate their health such as: Memory, Oral Health, Vital Signs and a total of 8 Knowledge Transfer (KT) conferences were held at the Centre. Testimonials and feedback received at the Open House (50+participants) was so outstanding that the MCSA Education Committee has decided to repeat this event in 2018 (September 21, 2018).
- **MCSA Team Event OASIS Marathon Montreal** - On September 24th, 2017 the Centre participated for the 7th year in the Marathon Oasis as Team MCSA as part of the Centre’s incentive toward health promotion, prevention, healthy aging, and community support. This KT event is also a fund raiser event for MCSA.
- **McGill Employee Health Fair 2017- Health & Wellbeing Program for Faculty and Staff, McGill University** - On October 20, 2017 MCSA participated in the 7th Annual Health Fair for Staff and Faculty. Over 100 employees visited our interactive kiosk, where they were able to obtain valuable information and resources on how to better manage their health and well- being at the workplace. (Vital Signs; Cognitive Testing; Information on age-related diseases).
- **MCSA Newsletter 2017** – New outreach initiative to disseminate progress in dementia, promote MCSA activities and fundraising. The goal of the MCSA Newsletter was to remind supporters that our Centre is active, to strengthen our relationship with our donors and to increase donor retention rate.
3 newsletters April, August and November 2017 (see Appendix 4a, 4b, 4c).

7.2 Training Activities

The MCSA offers a number of opportunities for training high qualified professional in the area of clinical care and research.

- **Fellowship Award for outstanding students** between the McGill University Research Centre for Studies in Aging, McGill Department of Pharmacology and Therapeutics and Enigma Biomedical Group was established as the “Dr. Serge Gauthier Fellowship Award” to sponsor international graduate or postgraduate scholars conducting research in dementia at McGill.
- **International exchange program:** this is an international research program for students who would like to pursue research in analysis of large datasets of dementia patients. We offer a maximum of two positions per year. The training program aims at developing analytical skills

in neuroimaging and had trained fellows from United States, China, Singapore, Brazil, Belgium, France and Thailand.

- **Medical Resident Training in Behavioral Neurology** (Directed by Dr. Serge Gauthier)
Dr. Vincent Jetté, R1 in Psychiatry at McGill trained for 4 weeks November –December 2017.
Dr. Anthipa Busagornruangrat, R4 in Neurology, Bangkok, Thailand came as observer traineeship for three weeks starting January 29, 2018.
Dr. Klara Meierer, McGill Psychiatry R1 Resident trained for 4 weeks starting February 12, 2018.
- **Graduate and Postgraduate research training** (continuous) The MCSA’s core scientists contribute to the training of over 30 graduate and postgraduate students fostering multidisciplinary research in neurodegeneration at McGill University (see names attached).
- **Undergraduate training:** this is a program devoted for introducing students to research in neurodegenerations. The students are exposed to research activities involving animals and patient populations.
- **Undergraduate journal club** of the McGill University Research Centre for Studies in Aging with MCSA, speakers from McGill or other Montreal universities’ faculty.
- **Training for Medical Records:**

Date of Training	Hours of Training	Staff Attendance
July 26, 2017	5 hours	<u>Staff Training</u> Dr. Pedro Rosa-Neto Dr. Serge Gauthier Silvana Aguzzi Tamar Tatigian Maria Polcaro Jamie Schmidt Tasha Vincent-Cellucci Mira Chamoun Jean Hall Nancy Manna
August 24, 2017	7 hours	<u>Administration Training</u> Silvana Aguzzi Tamar Tatigian
August 25, 2017	7 hours	<u>Administration Training</u> Silvana Aguzzi Tamar Tatigian
September 1, 2017	7 hours	<u>Receptionist, Secretaries, Nurses</u> Silvana Aguzzi Tamar Tatigian Maria Polcaro Russell Clough Mallery Landry Tasha Vincent-Cellucci Laura Robb Kelly Quispialaya Socualaya
September 7, 2017	7 hours	<u>Physician Training</u> Dr. Serge Gauthier Dr. Pedro Rosa-Neto Tamar Tatigian

7.3 Research Activities:

- The Centre principal investigators are engaged in numerous intramural research projects as well as projects provincial, national, and international collaborative projects, as evidenced by the extensive number of publications (see Appendix 1).
- The translational imaging laboratory lead by Centre, Dr. Rosa-Neto develops ground breaking neuroimaging techniques and analytical frameworks for quantifying neurodegenerative processes including deposition of protein aggregates, metabolic abnormalities, cell transport systems, and neuroreceptors dysfunction. The laboratory encompasses a cohesive multidisciplinary team conducting integrative and multimodal neuroimaging research in human diseases as well as disease animal models. This unit collaborates with an extensive network of laboratories and is committed to scientific training in the field of neuroimaging. This year, translational imaging laboratory published in high impact journals such as Nature Neuroscience, Molecular Psychiatry, and Alzheimer's Dementia, journal of neurosciences and Neurology, Maclean's Magazine.
- We started in 2017 the McGill Aging and dementia biomarker longitudinal cohort (McGill longitudinal ABC) study. This cohort is funded by the CIHR and Weston Brain Foundation. Using the most advanced imaging biomarkers currently available, this cohort will describe the accumulation of protein aggregates, neuroinflammation and synaptic changes in a 24-months. Currently we enrolled 131 individuals and screened 224 out of 868 volunteers. The outreach activities of the MCSA play a crucial role on maintaining retention on the study. This cohort will certainly play a major role on the understanding of risk factors leading to dementia as well as determining potential therapeutic targets for disease modification. This cohort nurtures a large community of basic researchers interested in conducting research in this population.
- The Alzheimer's Disease Research Unit (ADRU) led by Dr. Gauthier conducts academic and industry-sponsored and clinical trials, including the NIH-sponsored Dominantly Inherited Alzheimer Network Trial (DIAN-TU) and the National Dementia Cohort part of the Canadian Consortium on Neurodegeneration in Aging (CCNA). The ADRU is conducting ground-breaking clinical trials with Merck, Sharp & Dohme and Enigma Radiopharmaceuticals on a novel PET tau imaging agent called MK6240. It is expected that the MK6240 will accelerate clinical trials on Alzheimer's disease. The MCSA, Kalgene Pharmaceuticals and the National Research Council of Canada (NRC) have signed an agreement to develop a promising novel Alzheimer's treatment in Canada. This treatment will be tested in a phase I clinical trial led by Dr. Pedro Rosa-Neto and Dr. Serge Gauthier through a \$ 1.5 million grant provided by the Weston Brain Institute. Dr. Pedro Rosa-Neto and Dr. Serge Gauthier will also conduct another observational study focusing on neuroinflammatory pathways in Alzheimer's disease sponsored by Weston Brain Institute (\$ 1.5 million) and CCNA-CIHR (\$120 thousand).
- **Progress on Artificial Intelligence applied to personalized medicine:** Our research group made significant advances on precision and personalized medicine by applying artificial intelligence on large datasets (see below). As such, we are working with the colleagues from the centre of intelligence machines, particularly Dr. Joelle Pineau team to develop novel algorithms to diagnose and predict dementia. These novel techniques have immediate applications on clinical trials.
- **Research outreach:** Our team in conjunction with the office of Communications and External Relations at McGill University diffused our research across numerous specialized and lay press such as the weekly magazine Newsweek, the McLean's and others. (see Appendix 5)

7.4 Clinical Activities:

- The clinical activities can be categorized into memory clinic activities, efforts for early diagnosis of neurodegenerative disease, and clinical trials. These are consistent activities of the Centre coordinated by the Director of the ADRU, Dr. Serge Gauthier. The Clinic's primary focus is evaluation to provide treatments – both symptomatic and preventive -

to ensure best practice care for patients and to enhance the quality of life for patients and caregivers.

- Dr. Rosa-Neto’s clinical work focuses on patients with atypical and early onset dementia. He established advanced clinical protocols for investigating these clinical populations. The lumbar puncture (LP) clinic lead by Dr. Rosa-Neto completed 200 patients. This is the only clinic devoted to conduct diagnostic LPs in Canada. Dr. Rosa-Neto is the director of the training program in LPs, which is accredited by the Royal College of Physicians. This year the LP clinic will be located to the newly renovated facility located at the MCSA annex called The Crossroads Unit.
- Dr. Stephane Ledoux conducts clinical care focusing on cognitive neurology in special populations such as Down’s syndrome and in headache management.
- Dr. Paolo Vitali clinic focuses in cognitive neurology and neuropsychology of language. He runs our program in primary progressive aphasia.
- Dr. Simon Ducharme is a neuropsychiatrist with expertise in frontotemporal dementia. He conducts imaging research in this population, funded by the Weston Brain Institute.
- Laura Robb is a Genetic Counselor responsible for providing clinical care to patients and families affected by genetic forms of dementias.
- Electronic Medical records constitute the next stage in recording and apply medical knowledge in the context of medical care. As an academic unit, these electronic records serve as an instrument to rapidly identify the needs of our clinical population as well as optimize the recruitment of patient interests to participate in our research projects. We started to implement the system in September last year and we are optimizing the use of this instrument in our working environment. We plan to accomplish this by July 2018.

8. Please provide a **List of New Members** who joined in the past year (Full, Associate, Trainee noting whether graduate student or post-doctoral fellow) and **institutional affiliations**. Please also indicate any members who have left the Centre or Network. Add rows as necessary.

Please indicate total number of members: 76 (see Appendix 6)

Please indicate total number of McGill Faculty of Medicine members: 46

Last, First Name	Member Type	Institutional Affiliation(s)
Ng, Kok Pin	Visiting Scholar (June 2016-June 2017)	National Neuroscience Institute, Singapore
Struyfs, Hanne	Graduate Research Trainee (January 2017 – June 2017)	University of Antwerp, Belgium
Omid Rezanian, MSc	Trainee Member	Concordia
Alyssa Crichton	Trainee Member	McGill
Rosalie Filiatreault	Trainee Member	UdeM
Elyssa Frohlich	Trainee Member	McGill
Peter Kunach	Trainee Member	McGill
Jodan Lecourtois	Trainee Member	Polytechnique Montréal
Sophie Levasseur	Trainee Member	Concordia
Shermaine Li	Trainee Member	McGill
Carley Mayhew	Trainee Member	McGill
Sarah Mulcahy	Trainee Member	Concordia

Jenna Stevenson	Trainee Member	Concordia
Cecile Tissot	Trainee Member	McGill
Mira Chamoun	Trainee Member/Post-Doc	McGill
Emilie Thomas	Trainee Member/Post-Doc	McGill
Paolo Vitali	Affiliate Member	McGill
Lily Katofsky	Affiliate Member	McGill – Retired
Sonia Lupien	Affiliate Member	McGill – Non-Renewal
Paul Bedard	Affiliate Member	McGill – Deceased
Pierre Tousignant	Associate Member	McGill – Retired
Yves Robitaille	Affiliate Member	McGill – Deceased

9. Please describe how your activities align with the Academic or Research mission (Strategic Research Plan) of the Faculty of Medicine and/or other Faculties at McGill focusing on the activities for the current year and strategic plans for the subsequent year (**limit 200 words**)

The mission of the Faculty of Medicine of McGill University is to advance learning through teaching, scholarship and resolve the most oppressing societal challenges. This vision includes but is not restricted to offering graduate students the best education available, carrying out excellent scholarly and research activities, and providing services to society in line with our academic strengths.

To this end, the MCSA devotes a large amount of effort to offer to undergraduate and graduate students superior training opportunities through the direct participation in ongoing research programs. At the MCSA, students are exposed at early phases of their courses to cutting-edge research methodologies (e.g., neuroimaging, pharmacology, cognitive and behavioral testing). As such, these students also have the opportunity to participate in the development of scientific and clinical advances. As a result, students have a chance to attend international conferences and being exposed to leaders of our research field. Students have an opportunity to directly interact with leaders in dementia to come to our International lecture series in dementia (i.e. Molson’s or Laura Chalk lecture series). These unique training opportunities are nurtured by the high research performance of the MCSA, evidenced by the high productivity of our core and affiliated members, numerous high impact publications, both directly at the Centre and through our affiliate/associate members at McGill University.

In addition, the MCSA shares the global outreach vision from the Faculty of Medicine. We engage in international programs focusing in prevention and biomarker research in dementia. Core members of the Centre working on AD research have also been very successful over the past year in obtaining research grants to support their research activities. In 2017/2018, members of the Centre have been able to work with research funding from CIHR, FQR-S, NSERC, AD Society of Canada and Alzheimer’s Association.

Work under planning for 2018-2019

The MCSA has a long-standing partnership with Asian countries in clinical research and practice. Dr. Serge Gauthier is a founding member of the 10-year-old Asian Society against Dementia (ASAD), which aims at developing common clinical research tools in the field of dementia. Dr. Serge Gauthier has given keynote lectures at most of the annual meetings of the ASAD. Furthermore, clinical research fellows have trained at the MCSA over the years, from Thailand, Singapore and China.

We are finishing a first five-year cycle of collaborative research with Dr Jianping Jia from Beijing, China, on biomarkers in early stages of Alzheimer's disease (AD). Thirteen (13) articles have been published, going well beyond the original objectives of the CIHR-funded program. The next collaborative research cycle will focus on randomized clinical trials (RCT) with training of multiple study sites across China with Dr Huali Wang, and initiation of RCT using traditional medicines in vascular dementia with Dr Jinping Jia and the Shineway corporation. We will facilitate China joining the Dominantly Inherited Alzheimer Network (DIAN) observational study.

We are increasing our contribution to the Canadian Consortium on Neurodegeneration in Aging (CCNA) as it moves into its second five-year cycle, with enrolment of participants in the CCNA observational cohort, active participation in the neuroinflammation team (Dr Rosa-Neto as co-lead), the Ethical Legal Social Impact committee (Dr Serge Gauthier as chair).

Current RCT at our Center include BACE inhibitors in early AD, both familial early onset and sporadic late-onset, the anti-tau aggregation drug LMTM in early AD.

10. Other information:

Please indicate how the Research Centre, Core Facility or Network has:

- Tackled or plans to tackle issues in a manner that may not otherwise have been achievable without the financial support of the Faculty of Medicine
- Increased or is planning to increase the scale and focus of research activities
- Facilitated multidisciplinary, multi-institutional or international collaborations
(Please limit response to **200 words**)

Support from McGill University is crucial for maintaining the present administrative positions of the Centre, which are vital to manage, coordinate and perform many of the KT activities of MCSA. As the integration between KT, clinical and research activities constitute the driving force behind the productivity of the Centre, these administrative assistants are fundamental in the sustainability of our present operations.

We plan to scale our present research activities and take advantage of the more optimistic funding landscape recently announced by the Federal Government. The researchers of the Centre will certainly enhance the present research capacity and convert this knowledge into tangible clinical advancements to Canadians.

As part of the expansion of our research operations, we recently included the Crossroads, which is a ~2400 sq foot building located on the grounds of the Douglas Mental Health University Institute, 6775 Boulevard LaSalle. This satellite building serves as a site for recruitments and assessment of participants of clinical research. It has been already equipped with the infrastructure to conduct clinical procedures like lumbar punctures, blood and clinical assessments. As such, the Centre needs additional support from the Faculty to retain some of our high qualified trainees in order to maintain our provincial, national and international leadership in dementia research.

One of the most important challenges of the centre in 2018 is to upgrade our basic infrastructure to enhance the integration between clinical care and research. In order to progressively adopt the best clinical practice guidelines, the Centre urgently needs to implement electronic medical records, renovate computational network and integrate with the Quebec medical records. An additional clinical nurse will enhance our clinical capacity. New staff and faculty positions particularly are fundamental to maximize our research impact the spectrum of our research.

The Year End Financial Report reports on:

- Expenditure of funding provided by the Faculty of Medicine and other sources, towards meeting the objectives of the Research Centre or Network; and
- Details of any in-kind contributions provided to the Centre or Network.
- Please include a projected budget (including request from Faculty of Medicine) for the coming year
- See **Appendix 2** for the “Year End Financial Report” form to complete
- **Appendix 3.** KT activities detail refer to the *Brainy Boomer lecture series list (in attachment)*
- **Appendix 4.** Newsletter April 2017; 4a. August 2017; 4b. November 2017; (in attachment)
- **Appendix 5.** Maclean’s Magazine (in attachment)
- **Appendix 6.** Affiliated/Associate/Adjunct Members List (in attachment)
- **Appendix 7.** Potential New Members 2018-2019 List (in attachment)
- **Appendix 8.** Student and International Members 2017-2018 (in attachment)
- **Appendix 9.** Demonstrating Scientific Progress over five years at the MCSA (in attachment)
Journal of Alzheimer’s Disease – “Targeting Alzheimer’s Disease at the Right Time and Right Place: Validation of a Personalized Approach to Diagnosis and Treatment”, 2018.

Appendix 1

Quantitative and Qualitative Performance Indicators

1 a. Publications from Core-PIs (Dr. Gauthier, Dr. Rosa-Neto) in 2017 /2018 report period

Dr. Serge Gauthier

Articles and book chapters

- 1) Li X, NG KP, Ba M, Rosa-Neto P, Gauthier S. Dementia and Bioethics. Mental Health and Illness in the Elderly, Chiu H, Shulman K [Eds], Springer Nature Singapore, DOI: 10.1007/978-981-10-0370_6-1. 2017.
- 2) Zimmer ER, Parent MJ, Souza DG, Leuzy A, Lecrux C, Kim HI, Gauthier S, Pellerin L, Hamel E, Rosa-Neto P. [18F]FDG PET signal is driven by astroglial transport. Nature Neuroscience. 20, 393-395, 2017.
- 3) Ba M, Li X, Ng KP, **Pascoal TA, Mathotaarachchi S**, Rosa-Neto P, Gauthier S for the Alzheimer Disease Neuroimaging Initiative. The prevalence and biomarker characteristics of rapidly progressive Alzheimer's disease from the Alzheimer's Disease Neuroimaging Initiative database. Alzheimer's & Dementia – TRIC, 3, 107-113, 2017.
- 4) Kahle-Wroblewski K, Andrews JS, Belger M, Ye W, Gauthier S, Rentz DM, Galasko D. Dependence levels as interim clinical milestones along the continuum of Alzheimer's disease: 18 months results from the GERAS observational study. The Journal of Prevention of Alzheimer's Disease, 4, 72-80, 2017.
- 5) Gauthier S. Research update on Alzheimer's disease and introduction to the Expert Review of Neurotherapeutics special issue. Expert Review in Neurotherapeutics, 17, 1-2, 2017.
- 6) Ismail Z, Agüera-Ortiz L, Brodaty H, Cieslak A, Cummings J, Fischer CE, Gauthier S, Geda YE, Herrmann N, Kanji J, Lanctôt KL, Miller DS, Mortby ME, Onyike CU, Rosenberg PB, Smith EE, Smith GS, Sultzer DL, Lyketsos C for the NPS Professional Interest area of the International Society to Advance Alzheimer's Research and Treatment (NPS-PIA and ISTAART). The Mild Behavioral Impairment Checklist (MBI-C): a rating scale for neuropsychiatric symptoms in pre-dementia populations. Journal of Alzheimer Disease, 56, 929-938, 2017.
- 7) Bergeron D, Flynn K, Verret L, Poulin S, Bouchard RW, Bocti C, Fulop T, Lacombe G, Gauthier S, Nasreddine Z, Laforce R. Multicenter validation of an MMSE-MoCA conversion table. Journal of the American Geriatrics Society, 65: 1067-1072, 2017.
- 8) Jia J, Gauthier S, Pallotta S, Ji Y, Wei W, Xiao S, Peng D, Guo Q, Wu L, Chen S, Kuang W, Zhang J, Wei C, Tang Y. Consensus-based recommendations for the management of rapid cognitive decline due to Alzheimer's disease. Alzheimer's & Dementia, 13, 592-597, 2017.
- 9) **Schoemaker D**, Mascret C, Collins DL, Yu E, Gauthier S, Pruessner JC. Recollection and familiarity in aging individuals: gaining insight into relationships with medial temporal lobe structural integrity. Hippocampus, 27: 692-701, 2017.

- 10) Müller WE, Eckert A, Eckert G, Fink H, Friedland K, Gauthier S, Hoerr R, Ihl R, Kasper S, Möller HJ Therapeutic efficacy of the ginkgo special extract EGb761® within the framework of the mitochondrial cascade hypothesis of Alzheimer's disease. *World Journal Biological Psychiatry*. DOI:10.1080/15622975.2017.1308552.
- 11) Diehl-Schmid J, Gauthier S, Belleville S, Racine E, Jox R, Turecki G, Richard-Devantoy S. Suicide and assisted dying in dementia: what we know and what we need to know. A narrative literature review. *International Psychogeriatrics*. DOI:10.1017/S1041610217000679.
- 12) Aisen P, Touchon J, Amariglio R, Andrieu S, Bateman R, Breitner J, Donohue M, Dunn B, Doody R, Foc N, Gauthier S, Grundman M, Hendrix S, Ho C, Isaac M, Raman R, Rosenberg P, Schindler R, Schneider L, Sperling R, Tariot P, Welsh-Bohmer K, Weiner M, Vellas B and Task Force Members. EU/US/CTAD Task Force: lessons learned from recent and current Alzheimer's prevention trials. *The Journal of Prevention of Alzheimer's Disease*, 4, 117-125, 2017.
- 13) Rajah MN, Wallace LMK, Manning L, Ankudowich E, Yu EH, Swierkot A, Patel R, Chakravarty M, Naumova D, Pruessner J, Joober R, Gauthier S, Pasvanis S. Family history and APOE-4 risk for Alzheimer's disease impact the neural correlates of episodic memory at midlife. *NeuroImage: Clinical*. 14, 760-774, 2017. DOI:10.1016/j.nicl.2017.03.016.
- 14) **Pascoal TA, Mathotaarachchi S, Shin M, Benedet AL, Mohades S, Wang S, Beaudry T, Kang MS**, Soucy JP, Labbe A, Gauthier S, Rosa-Neto P for the Alzheimer Disease Neuroimaging Initiative. Synergistic interaction between amyloid and tau predicts the progression to dementia. *Alzheimer's & Dementia*, 13: 644-653, 2017.
- 15) Ng KP, Pascoal T, **Mathotaarachechi S**, Chung CO, **Benedet AL, Shin M, Kang MS**, Li X, Ba M, Kandiah N, Rosa-Neto P, Gauthier S for the Alzheimer's Disease Neuroimaging Initiative. Neuropsychiatric symptoms predict hypometabolism in preclinical Alzheimer's disease. *Neurology*, 88, 1814-1821, 2017.
- 16) Ng KP, **Pascoal TA, Mathotaarachchi S**, Therriault J, Kang MS, Shin M, Guiot MC, Guo Q, Harada R, Comley RA, Massarweh G, Soucy JP, Okamura N, Gauthier S, Rosa-Neto P. Monoamine oxidase-B inhibitor selegiline reduces [18F]THK5351 uptake in the human brain. *Alzheimer's Research & Therapy*, DOI:10.1186/s13195-017-0253-y.
- 17) Lajoie I, Nugent S, Debacker C, Dyson K, Tancredi FB, Badhwar AP, Belleville S, Deschaintre Y, Bellec P, Doyon J, Bocti C, Gauthier S, Arnold D, Kergoat MJ, Chertkow H, Monchi O, Hoge RD. Application of calibrated fMRI in Alzheimer's disease. *NeuroImage: Clinical*, 16; 15: 348-358, 2017.
- 18) Abushakra S, Porsteinsson A, Scheltens P, Sadowsky C, Vellas B, Cummings J, Gauthier S, Hey JA, Power A, Wang P, Shen L, Tolar M. Clinical effects of tramiprosate in APOE4/4 homozygous patients with mild Alzheimer's disease suggest disease modification potential. *Journal of Prevention of Alzheimer's Disease*, 4, 149-156, 2017.
- 19) **Mathotaarachchi S, Pascoal TA, Shin M, Benedet AL, Kang MS, Beaudry T, Fonov VS**, Gauthier S, Rosa-Neto P. Identifying incipient dementia individuals using machine learning and amyloid imaging. *Neurobiology of Aging*. DOI:org/10.1016/j.neurobiologyaging.2017.06.027.
- 20) Brayet P, Petit D, Baril AA, Gosselin N, Gagnon JF, Soucy JP, Gauthier S, Kergoat MJ, Carrier J, Rouleau I, Montplaisir J. Brain imaging during rapid-eye-movement sleep successfully identifies amnesic MCI. *Sleep Medicine*, 34: 134-140, 2017.

- 21) **Schoemaker D**, Poirier J, Collins DL, Gauthier S, Pruessner JC. Familiarity deficits in cognitively normal aging individuals with APOE ϵ 4: a follow-up investigation of medial temporal lobe structural correlates. *Alzheimer's & Dementia – DADM*, 9, 21-24, 2017.
- 22) Li X, Ba M, Ng KP, **Mathotaarachchi S**, **Pascoal TA**, Rosa-Neto P, Gauthier S, for the Alzheimer's Disease Neuroimaging Initiative. Characterizing biomarker features of cognitively normal individuals with ventriculomegaly. *Alzheimer's & Dementia – DADM*. DOI.org/10.1016/j.dadm.2017.08.001.
- 23) Aghourian M, Legault-Denis C, Soucy JP, Rosa-Neto P, Gauthier S, Kostinov A, Gravel P, Bedard MA. Quantification of brain cholinergic denervation in Alzheimer's disease using PET imaging with [18F]-FEOBV. *Molecular Psychiatry*, DOI:10.1038/mp.2017.183.
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- 31) Gauthier S, Ng KP, **Pascoal T**, Zhang H, Rosa-Neto, P. Targeting AD at the right time and the right place: validation of a personalized approach to diagnosis and treatment. *Journal of Alzheimer's Disease*. DOI:10.3233/JAD-179924.

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- 39) Therriault J, Ng KP, **Pascoal TA**, **Mathotaarachchi S**, **Shin M**, **Kang MS**, Walpola I, Gauthier S, Nair V, Rosa-Neto P. for the Alzheimer's Disease Neuroimaging Initiative. Anosognosia predicts propagation of default mode network metabolic deficits and clinical progression to dementia. *Neurology*. DOI:10.1212/WNL.0000000000005120.
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- 47) Gagnon K, Baril AA, Montplaisir J, Carrier J, Gauthier S, Lafond C, Gagnon JF, Gosselin N. Disconnection of subjective and objective cognitive impairment in obstructive sleep apnea. *European Respiratory Journal*. Submitted.
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- 49) Cheewakriengkrai L, **Rowley J, Mohades S, Zimmer ER, Shin M, Parent MJ, Beaudry T**, Wu L, Fonov V, Eskildsen SF, Leuzy A, Dauar M, Soucy JP, Gauthier S., Rosa-Neto P. Linear and non linear associations among biomarkers of Alzheimer's disease. *Journal of Alzheimer Disease*. Submitted.
- 50) Ng KP, Richard-Devantoy S, Bertrand JA, **Pascoal T, Mathotaarachchi S, Therriault J**, Jiang L, Greenwood CMT, Rosa-Neto P, Gauthier S. Suicidal ideation is prevalent in both asymptomatic autosomal Alzheimer's disease mutation and non-mutation carriers. *Alzheimer's & Dementia - DADM*. To be re-submitted.
- 51) Wang S, **Mathotaarachchi S, Pascoal T, Parent M, Beaudry T, Benedet A, Shin M, Kang MS, Dansereau C, Park MT, Fonov V, Carbonell F, Chakravarty M, Bellec P, Gauthier S, Rosa-Neto P**. The loss of intra-hippocampal connectivity is driven by a declining anterior hippocampal network across the Alzheimer's disease spectrum. *Brain Structure and Function*. To be submitted.
- 52) Cloutier S, Chertkow H, Kergoat MJ, Gauthier S, Belleville S. Natural history of the decline on instrumental activities of daily living prior to dementia in persons with mild cognitive impairment. *Alzheimer's & Dementia – DADM*. To be submitted.

Dr. Pedro Rosa-Neto
Publications (Peer Reviewed Papers)

1. Gauthier S, **Ng KP, Pascoal TA, Zhang H**, Rosa-Neto P. Targeting Alzheimer's Disease at the Right Time and the Right Place: Validation of a Personalized Approach to Diagnosis and Treatment. *J Alzheimers Dis.* 2018 Mar 1.
2. Villeneuve S, Vogel JW, Gonneaud J, Pichet Binette A, Rosa-Neto P, Gauthier S, Bateman RJ, Fagan AM, Morris JC, Benzinger TLS, Johnson SC, Breitner JCS, Poirier J; Presymptomatic Evaluation of Novel or Experimental Treatments for Alzheimer Disease (PREVENT-AD) Research Group. Proximity to Parental Symptom Onset and Amyloid- β Burden in Sporadic Alzheimer Disease. *JAMA Neurol.* 2018 Feb 26.
3. **Benedet AL**, Yu L, Labbe A, **Mathotaarachchi S, Pascoal TA, Shin M, Kang MS**, Gauthier S, Rouleau GA, Poirier J, Bennett DA, Rosa-Neto P; Alzheimer's Disease Neuroimaging Initiative. CYP2C19 variant mitigates Alzheimer disease pathophysiology in vivo and postmortem. *Neurol Genet.* 2018 Jan 30;4(1):e216.
4. **Therriault J, Ng KP, Pascoal TA, Mathotaarachchi S, Kang MS, Struyfs H, ShinM, Benedet AL, Walpola IC**, Nair V, Gauthier S, Rosa-Neto P; Alzheimer's Disease Neuroimaging Initiative. Anosognosia predicts default mode network hypometabolism and clinical progression to dementia. *Neurology.* 2018 Feb 14.
5. **Pascoal TA, Mathotaarachchi S, Shin M, Park AY, Mohades S, Benedet AL, Kang MS**, Massarweh G, Soucy JP, Gauthier S, Rosa-Neto P; Alzheimer's Disease Neuroimaging Initiative. Amyloid and tau signatures of brain metabolic decline in preclinical Alzheimer's disease. *Eur J Nucl Med Mol Imaging.* 2018 Feb 2.
6. Henriques AD, **Benedet AL**, Camargos EF, Rosa-Neto P, Nóbrega OT. Fluid and imaging biomarkers for Alzheimer's disease: Where we stand and where to head to. *Exp Gerontol.* 2018 Jan 4.
7. Bernard-Gauthier V, Mossine AV, Mahringer A, **Aliaga A**, Bailey JJ, Shao X, Stauff J, Arteaga J, Sherman P, Grand'Maison M, Rochon PL, Wängler B, Wängler C, Bartenstein P, Kostikov A, Kaplan DR, Fricker G, Rosa-Neto P, Scott PJH, Schirrmacher R. Identification of [(18)F]TRACK, a Fluorine-18-Labeled Tropomyosin Receptor Kinase (Trk) Inhibitor for PET Imaging. *J Med Chem.* 2018 Feb 22;61(4):1737-1743
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9. Li X, Ba M, **Ng KP, Mathotaarachchi S, Pascoal TA**, Rosa-Neto P, Gauthier S, Alzheimer's Disease Neuroimaging Initiative. Characterizing biomarker features of cognitively normal individuals with ventriculomegaly. *Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring.* 2018 Jan 1;10:12-21.
10. **Parent MJ, Zimmer ER, Shin M, Kang MS**, Fonov VS, Mathieu A, **Aliaga A**, Kostikov A, Do Carmo S, Dea D, Poirier J, Soucy JP, Gauthier SA, Cuello AC, Rosa-Neto P. Multimodal imaging in rat model recapitulates Alzheimer's Disease biomarkers abnormalities. *Journal of Neuroscience.* 2017 Nov 2:1346-7.
11. Gauthier S, **Ng KP, Pascoal TA, Mathotaarachchi S, Chung CO, Benedetti AL, Shin M, Kang MS, Li X, Ba M**, Kandiah N, Rosa-Neto P. Author response: Neuropsychiatric symptoms

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12. Ba M, Li X, **Ng KP, Pascoal TA, Mathotaarachchi S**, Rosa-Neto P, Gauthier S; Alzheimer's Disease Neuroimaging Initiative. The prevalence and biomarkers' characteristic of rapidly progressive Alzheimer's disease from the Alzheimer's Disease Neuroimaging Initiative database. *Alzheimer's & Dementia*. 2017 Feb 9;3(1):107-113. doi: 10.1016/j.trci.2016.12.005. eCollection 2017 Jan.
 13. Tuwaig M, **Savard M**, Jutras B, Poirier J, Collins DL, Rosa-Neto P, Fontaine D, Breitner JCS; PREVENT-AD Research Group. Deficit in Central Auditory Processing as a Biomarker of Pre-Clinical Alzheimer's Disease. *Journal of Alzheimer's disease*. 2017 Oct 3.
 14. **Aghourian M, Legault-Denis C**, Soucy JP, Rosa-Neto P, Gauthier S, Kostikov A, Gravel P, Bédard MA. Quantification of brain cholinergic denervation in Alzheimer's disease using PET imaging with [(18) F]-FEOBV. *Molecular psychiatry*. 2017 Sep 12.
 15. **Mathotaarachchi S, Pascoal TA, Shin M, Benedet AL, Kang MS, Beaudry T**, Fonov VS, Gauthier S, Rosa-Neto P; Alzheimer's Disease Neuroimaging Initiative. Identifying incipient dementia individuals using machine learning and amyloid imaging. *Neurobiol Aging*. 2017 Jul 11.
 16. Bernard-Gauthier V, Bailey JJ, Mossine AV, Lindner S, Vomacka L, **Aliaga A**, Shao X, Quesada CA, Sherman P, Mahringer A, Kostikov A, Grand'Maison M, Rosa-Neto P, Soucy JP, Thiel A, Kaplan DR, Fricker G, Wängler B, Bartenstein P, Schirrmacher R, Scott PJH. A Kinome-Wide Selective Radiolabeled TrkB/C Inhibitor for in Vitro and in Vivo Neuroimaging: Synthesis, Preclinical Evaluation, and First-in-Human. *J Med Chem*. 2017 Jul 21.
 17. Lafaille-Magnan ME, Poirier J, Etienne P, Tremblay-Mercier J, Frenette J, Rosa-Neto P, Breitner JCS; PREVENT-AD Research Group. Odor identification as a biomarker of preclinical AD in older adults at risk. *Neurology*. 2017 Jul 25;89(4):327-335
 18. Engelborghs S, Niemantsverdriet E, **Struyfs H**, Blennow K, Brouns R, Comabella M, Dujmovic I, van der Flier W, Frölich L, Galimberti D, Gnanapavan S, Hemmer B, Hoff E, Hort J, Iacobaeus E, Ingelsson M, Jan de Jong F, Jonsson M, Khalil M, Kuhle J, Lleó A, de Mendonça A, Molinuevo JL, Nagels G, Paquet C, Parnetti L, Roks G, Rosa-Neto P, Scheltens P, Skårsgard C, Stomrud E, Tumani H, Visser PJ, Wallin A, Winblad B, Zetterberg H, Duits F, Teunissen CE. Consensus guidelines for lumbar puncture in patients with neurological diseases. *Alzheimer's and Dementia: Diagnosis, Assessment, and Disease Monitoring, Volume 8, 2017*.
 19. Dadar M, **Pascoal T, Manitsirikul S**, Misquitta K, Tartaglia C, Brietner J, Rosa-Neto P, Carmichael O, DeCarli C, Collins DL. Validation of a Regression Technique for Segmentation of White Matter Hyperintensities in Alzheimer's Disease. *IEEE Transactions on Medical Imaging*. 2017 Apr 12.
 20. Ng KP, **Pascoal TA, Mathotaarachchi S**, Chung CO, Benedet AL, Shin M, Kang MS, Li X, Ba M, Kandiah N, Rosa-Neto P. Neuropsychiatric symptoms predict hypometabolism in preclinical Alzheimer disease. *Neurology*. 2017 Apr 12:10-212.
 21. **Chamoun M**, Huppé-Gourgues F, Legault I, Rosa-Neto P, Dumbrava D, Faubert J, Vaucher E. Cholinergic Potentiation Improves Perceptual-Cognitive Training of Healthy Young Adults in Three Dimensional Multiple Object Tracking. *Frontiers in Human Neuroscience*. 2017;11.

22. **Ng KP, Pascoal TA, Mathotaarachchi S, Therriault J, Kang MS, Shin M**, Guiot MC, Guo Q, Harada R, Comley RA, Massarweh G, Soucy J-P, Okamura N, Gauthier S, Rosa-Neto, P. Monoamine oxidase B inhibitor, selegiline, reduces 18 F-THK5351 uptake in the human brain. *Alzheimer's Research & Therapy*. 2017 Mar 31;9(1):25.
23. **Zimmer ER, Parent MJ, Souza DG, Leuzy A**, Lecrux C, Kim HI, Gauthier S, Pellerin L, Hamel E, Rosa-Neto P. [¹⁸F]FDG PET signal is driven by β astroglial glutamate transport. *Nat Neurosci*. 2017.

ABSTRACTS

1. Graph-Theory analysis shows a highly efficient but redundant network in MCI TAU propagation. **Mathotaarachchi S, Pascoal TA, Shin M, Benedet AL, Kang MS**, Struyfs H, Fonov V, Gauthier S, Bratislav M, Rosa-Neto P. Alzheimer's Association International Conference. London, UK. July 16-20, 2017.
2. Preclinical assessment of KAL-ABP target engagement and efficacy using PET, MRI and CSF biomarkers. **Kang MS, Shin M**, Collind DL, Massarweh G, Soucy S, Brown L, Delaney C, Pelletier A, Haqqani A, Durocher Y, Rennie K, Stanimirovic D, Chakravarthy B, Waterson M, Yaganathan N, Cuello AC, Gauthier S, Rosa-Neto P. Alzheimer's Association International Conference. London, UK. July 16-20, 2017 (Oral Presentation).
3. Amyloid-beta modulates cerebral metabolic network in rats and humans. **Kang MS, Shin M, Parent MJ, Mathotaarachchi SS, Mohades S, Pascoal TA, Benedet AL, Aliaga A**, Do Carmo S, Ng KP, Therriault J, Struyfs H, Soucy JP, Gauthier S, Cuello AC, Rosa-Neto P. Alzheimer's Association International Conference. London, UK. July 16-20, 2017.
4. Interaction Between *Nefl* and *ApoE* Genes Confers Vulnerability to Neurodegeneration. **Benedet AL, Kang MS, Pascoal TA, Mathotaarachchi SS, Shin M**, Labbe A, Gauthier S, Rosa-Neto P. Alzheimer's Association International Conference. London, UK. July 16-20, 2017.
5. Monoamine oxidase B inhibitor, selegiline, reduces brain [¹⁸F]THK5351 uptake. **Ng KP, Pascoal TA, Mathotaarachchi S, Kang MS, Shin M, Therriault J, Levasseur S, Horowitz K**, Massarweh G, Soucy JP, Rosa-Neto P. Alzheimer's Association International Conference. London, UK. July 16-20, 2017.
6. Elevated CSF Levels of Neurofilament Light Chain Is Associated with Gray Matter Neurodegeneration in Both Humans and Transgenic Rat Model of Alzheimer's Disease. **Kang MS, Shin M, Zimmer ER, Mathotaarachchi S, Pascoal TA, Ng KP, Therriault J, Devenyl G, Chakravarty M, Blennow K, Zetterberg H, Soucy JP, Poirier J, Gauthier S, Cuello AC, Rosa-Neto P**. Alzheimer's Association International Conference. London, UK. July 16-20, 2017.
7. Lack of Self-Awareness of Cognitive Deficits Predicts Metabolic Decline in Mild Cognitive Impairment. **Therriault J, Ng KP, Pascoal TA, Mathotaarachchi S, Kang MS, Shin M**, Gauthier S, Nair V, Rosa-Neto P. Alzheimer's Association International Conference. London, UK. July 16-20, 2017.
8. Lack of Self-Awareness of Cognitive Deficits in Alzheimer's Disease Is Related to Decreased Metabolism in the Posterior Cingulate Cortex. **Therriault J, Ng KP, Pascoal TA, Mathotaarachchi**

- S, Kang MS, Shin M**, Gauthier S, Nair V, Rosa-Neto P. Alzheimer’s Association International Conference. London, UK. July 16-20, 2017.
9. Low self-awareness of cognitive deficits is associated with regional hypometabolism in the default mode network. **Therriault J, Ng KP, Pascoal TA, Mathotaarachchi S, Kang MS, Shin M**, Gauthier S, Nair V, Rosa-Neto P. Berlin BRAIN & BRAIN PET. Berlin, Germany. April 1-4, 2017.
 10. In vivo and in vitro demonstration of [18F]THK5351 binding to monoamine oxidase–B in the human brain. **Ng KP, Pascoal TA, Mathotaarachchi S, Kang MS, Shin M, Therriault J, Levasseur S, Horowitz K**, Gravel P, Massarweh G, Soucy JP, Rosa-Neto P. Berlin BRAIN & BRAIN PET. Berlin, Germany. April 1-4, 2017.
 11. The structural atrophy is associated with CSF neurofilament light chain in a transgenic rat model of Alzheimer’s disease. **Kang MS, Zimmer ER, Shin M, Mathotaarachchi S, Pascoal TA, Ng KP, Thierrault J**, Devenyi G, Chakravarty M, Blennow K, Zetterberg H, Soucy JP, Poirier J, Gauthier S, Cuello AC, Rosa-Neto P. Berlin BRAIN & BRAIN PET. Berlin, Germany. April 1-4, 2017.
 12. Hippocampal metabolic network serves as a translational biomarker of Alzheimer’s disease: Interspecies Study. **Kang MS, Mohades S, Pascoal TA, Zimmer ER, Parent MJ, Shin M, Aliaga A, Mathotaarachchi S**, Wang S, Soucy JP, Gauthier S, Cuello AC, Rosa-Neto P. The 13th International Conference on Alzheimer’s & Parkinson’s Diseases. Vienna, Austria. March 29 – April 2, 2017.
 13. Characterizing neuropsychological and biomarkers features of cognitively normal individuals with ventriculomegaly. Li X, Ba M, Ng KP, **Mathotaarachchi S, Pascoal TA**, Rosa-Neto P, Gauthier S. The 13th International Conference on Alzheimer’s & Parkinson’s Diseases. Vienna, Austria. March 29 – April 2, 2017.
 14. Increased level of CSF neurofilament light chain is associated with amyloidosis in a transgenic rat model of Alzheimer’s disease. **Kang MS, Zimmer ER, Shin M, Mathotaarachchi S**, Blennow K, Zetterberg H, Soucy JP, Poirier J, Gauthier S, Claudio AC, Rosa-Neto P. Human Amyloid Imaging Conference. Miami, Florida. January 11-13, 2017.
 15. PET based network analysis reveals the hubs for tau propagation in MCI. **Mathotaarachchi S, Pascoal TA, Benedet AL, Kang MS, Shin M, Beaudry T**, Wang S, Fonov V, Gauthier S, Rosa-Neto P. Human Amyloid Imaging Conference. Miami, Florida. January 11-13, 2017.

Trainee Awards

2017	Min Su Kang, BSc.	AAIC Travel Award
2017	Tharick A. Pascoal, MD.	AAIC Travel Award – “Global and regional amyloid effects on the DMN: network vulnerability and cognitive impairment” (£494)

2017	Min Su Kang, BSc.	CIHR Travel Award – “Characterizing the effects of beta-amyloid aggregates on the hippocampal metabolic network in Alzheimer’s disease patients and animal models” (\$1,000)
2017	Min Su Kang, BSc.	CIHR Travel Award – Preclinical assessment of KAL-ABP target engagement and efficacy using PET, MRI, and CSF biomarkers (\$1,000)
2017	Tharick A. Pascoal, MD.	CIHR Travel Award – “Amyloid and tau PET synergy in default mode network determines clinical status in early Alzheimer’s disease” (\$1,000)
2017	Min Su Kang, BSc.	BRAIN & BRAIN PET: Early Career Investigator Travel Bursary – “The structural atrophy is associated with CSF neurofilament light chain in a transgenic rat model of Alzheimer’s disease” (950€)
2017	Tharick A. Pascoal, MD.	BRAIN & BRAIN PET: Early Career Investigator Travel Bursary – “Amyloid-β and tau PET synergy in default mode network determines clinical status in early Alzheimer’s disease” (950€)
2017	Kok Pin Ng, MD.	BRAIN & BRAIN PET: Early Career Investigator Travel Bursary – “Monoamine oxidase B inhibitor, selegiline, reduces brain [¹⁸ F]THK5351 uptake” (950€)
2017	Haseeb Khan, BSc.	Maimonides Geriatric Fellowship Award – “Dedicated contribution to the aging population” (\$2,500)

1 b. Current active research grants of the core PIs (Dr. Gauthier, Dr. Rosa-Neto)

Industry Sponsored Clinical Trials

2015-2024

A Phase II/III Randomized, Double-Blind, Placebo-Controlled Multi-Center Study of 2 Potential Disease Modifying Therapies in Individuals at Risk for and with Dominantly Inherited Alzheimer’s Disease DIAN-TU-001

2016-2017

Exploratory Case-Controlled, Longitudinal Biomarker Study in Subjects with Alzheimer’s Disease or Behavioral Variant Frontotemporal Dementia and Untreated Matched Control (TRx-GTD-025)

2017

Exploring the clinical utility of tau imaging ageing {18}MK6240. Phase one study for determination of dosing and safety of a novel imaging agent. Sponsor: Enigma Pharmaceuticals

2017-2019

Effect of LY3202626 on Alzheimer's Disease Progression as Measured by Cerebral 18F-AV-1451 Tau-PET in Mild Alzheimer's Disease Dementia (Protocol 17X-MC-LLCF)

2017-2020

The Comprehensive Assessment of Neurodegeneration & Dementia (COMPASS-ND) STUDY

2018-2019

Randomized, Double-Blind, Placebo-Controlled, 2-Arm, 6-Month, Brain Imaging and Safety Study of Leuco-methylthionium bis(hydromethanesulfonate) (LMTM) in Subjects with Mild Alzheimer's Disease (Study TRx 237 039 Protocol)

2018-2020

A Placebo-Controlled, Double-Blind, Parallel-Group, 24-Month Study to Evaluate the Efficacy and Safety of E2609 in Subjects with Early Alzheimer's Disease" (E2609-G000-302)

Research Grants of Dr. Serge Gauthier

2014-2019

CIHR Co-applicant with H. Chertkow (PI) et al. \$4,040,000 to \$4,527,000 per year overall, \$70,000 per year for ELSI committee.

Canadian Consortium on Neurodegeneration in Aging.

2015-2017

Alzheimer Society of Canada. Co-applicant with Paul Brassard and Sami Suissa. \$65,754 Year 1; \$72,239 Year 2.

Influence of the structural differences of statins on the risk of incident Alzheimer's disease.

2016-2021

CIHR. Co-applicant with S. Villeneuve (PI), J. Breitner, J. Poirier, P. Rosa-Neto, A. Evans. \$710,985 (total).

Towards a better understanding of the impact of vascular health on Alzheimer's disease pathology and clinical expression.

2017-2018

CIHR. Co-applicant with G. Ferland (PI), MJ Kergoat, F. Lesage, N. Presse, S. Belleville. \$100,000. Increasing vitamin K status through supplementation to improve cognition in older individuals at risk of cognition impairment: a randomized, double blind, placebo-controlled study.

2017-2022

CIHR. Co-applicant with N. Rajah (PI). \$833,850. The impact of sex, menopausal status and +APOE4 risk for Alzheimer's disease on then neural correlates of episodic memory in healthy middle aged adults.

2017-2023

CIHR. Co-applicant with J. Carrier & J. Montplaisir. \$665,550.
Quantitative electroencephalography in rapid-eye-movement (REM) sleep: an early marker of cholinergic neurodegeneration in mild cognitive impairment.

Research Grants of Dr. Pedro Rosa-Neto

- 2017-2021 FRSQ Programme de bourses de chercheur-boursier Clinicien «Senior» Volet « Clinique et Épidémiologie »
- 2017-2022 Interactions between pathological processes as drivers of clinical progression in Alzheimer's disease. CIHR Project Grant 2016 (CAN \$1,377,000).
Rosa-Neto, Pedro (PI); Gauthier, Serge; Massarweh, Gassan; Chakravarty, Mallar; Pruessner, Jens; Soucy, Jean-Paul.
- 2017-2020 ERA-NET-FRSQ. Sleepless, quantification of synapses alterations unduced by sleep deprivation. (CAN \$ 298,500).
- 2017-2022 The impact of sex, menopausal status and +APOE4 risk for Alzheimer's Disease on the neural correlates of episodic memory in healthy middle aged adults. CIHR Project Grant 2016 (CAN \$ 833,850).
Rajah, M. Natasha, Chakravarty, Megha M; Einstein, Gillian; Gauthier, Serge G; Poirier, Judes; Pruessner, Jens C; Rosa-Neto, Pedro (Co-applicant).
- 2017-2022 Cocaine Addiction: Epigenetic Studies in Living and Postmortem Brain. CIHR Project Grant 2016 (CAN \$ 1,235,475).
Leyton, Marco, Benkelfat, Chawki; Booij, Linda; Clarke, Paul B; Gobbi, Gabriella; Peterson, Alan C; Rosa-Neto, Pedro (Co-applicant); Turecki, Gustavo X.
- 2017-2022 Role of HMG CoA reductase protective and risk variants in the pathophysiology and treatment of sporadic Alzheimer's disease. Poirier, Judes, Breitner, John C; Rosa-Neto, Pedro (Co-applicant).
- 2017-2018 Modeling imaging data. NSERC – Discovery Grants Program (CAN \$21,000).
Rosa-Neto, Pedro (PI).

1 c. Presentations at National and International Meetings

Dr. Serge Gauthier

Gauthier S. Treatment of AD with anti-tau aggregation drug LMTM. ADI Conference, Kyoto, April 27-29th 2017.

Gauthier S. Update on Diagnosis and treatment of Alzheimer's Disease. 5th Congress on Dementia, Beijing, May 12-14th 2017.

Gauthier S. Update on Alzheimer's disease. Presented at the 5th Congress of the Hellenic Association of Dementia, Athens, November 3-5th 2017.

Gauthier S. A new approach to patients with cognitive decline. LXIX congress of the Spanish Neurology Association, Valencia, November 21-25th 2017.

Gauthier S. Update on treatments for AD. Annual meeting of the MCI workgroup, Miami January 20-21st 2018.

Gauthier S. Update on diagnosis and treatment of Alzheimer's disease. 2nd Conference on neurodegenerative disorders, Shanghai, March 9th-10th 2018.

1d. Presentations at National and International Meetings

Dr. Pedro Rosa-Neto

CCNA Research day. CCNA Annual Partners Forum and Science Day 2017, Toronto, ON
1 November 2017 - 2 November 2017

William Feindel Lecture series of the Brain Imaging Center, Montreal Neurological Institute. May 15, 2017.

5th Singapore International Neurocognitive Symposium, 16-18 March 2017, Raffles City Convention Centre, Singapore Translational neuroimaging in Alzheimer's disease

5th Singapore International Neurocognitive Symposium, 16-18 March 2017, Raffles City Convention Centre, Singapore TauPET in Dementia

5th Singapore International Neurocognitive Symposium, 16-18 March 2017, Raffles City Convention Centre, Singapore Metabolic and fMRI Brain Networks Abnormalities as a Biomarker for AD Progression

5th Singapore International Neurocognitive Symposium, 16-18 March 2017, Raffles City Convention Centre, Singapore TauPET and CSF Tau: Integration into Clinical Trials

1 e. Outreach of scientific production of the Centre:

McGill - <https://www.mcgill.ca/newsroom/channels/news/artificial-intelligence-predicts-dementia-onset-symptoms-269722>

Stanford - <http://scopeblog.stanford.edu/2017/08/29/artificial-intelligence-can-help-predict-who-will-develop-dementia-a-new-study-finds/>

NBC - <https://www.nbcnews.com/mach/science/doctors-have-trouble-diagnosing-alzheimer-s-ai-doesn-t-nca815561>

USNews - <https://www.usnews.com/news/health-care-news/articles/2017-09-01/artificial-intelligence-could-predict-alzheimers-years-before-doctors>

NYDailyNews - <http://www.nydailynews.com/life-style/health/new-technology-predict-alzheimer-years-doctors-article-1.3461065>

Alz News Today - <https://alzheimersnewstoday.com/2017/08/30/a-i-big-data-project-predicts-dementia-2-years-before-symptoms-manifest/>

McGill Tribune - <http://www.mcgilltribune.com/sci-tech/artificial-intelligence-based-algorithm-predicts-dementia-onset-092617/>

AuntMinnie - <http://www.auntminnie.com/index.aspx?sec=ser&sub=def&pag=dis&ItemID=118089>

Psychcentral - <https://psychcentral.com/news/2017/08/23/ai-may-be-soon-be-used-to-predict-dementia/125020.html>

Live Science - <https://www.livescience.com/60267-artificial-intelligence-predicts-alzheimers-disease.html>

Others
<http://usmorning.net/news/health/new-technology-can-predict-alzheimers-two-years-before-doctors/>

<https://singularityhub.com/2017/10/02/researchers-develop-new-tech-to-predict-alzheimers-disease-earlier-than-ever/#sm.000033jsxs12t3ei0wq0mbezaqs0f>

<https://www.psychcongress.com/article/ai-software-predicts-dementia-risk-patients>

<https://www.disruptordaily.com/ai-may-able-detect-alzheimers-two-years-advance/>

<http://www.neurodegenerationresearch.eu/2017/10/artificial-intelligence-predicts-dementia-before-onset-of-symptoms/>

<http://bigthink.com/stephen-johnson/scientists-use-machine-learning-to-spot-alzheimers-dementia-before-onset-of-symptoms>

<https://www.artificialintelligence-news.com/2017/08/30/ai-predict-conditions-alzheimers-schizophrenia/>

<http://fourthventricle.com/artificial-intelligence-predicts-dementia-before-onset-of-symptoms/>

<http://www.evolving-science.com/information-communication-computer-science-technology/novel-ai-enhances-detection-alzheimer-s-disease-risk-00420>

<https://scienceblog.com/495901/new-ai-predicts-dementia-alzheimers-years-onset/>

<http://electronics360.globalspec.com/article/9614/ai-algorithm-can-predict-alzheimer-s-in-patients-years-before-symptoms-show>

<http://www.cetusnews.com/tech/Artificial-Intelligence-Could-Predict-Alzheimer-s-Disease-Years-Before-Symptoms-Begin.rylfJuFOFb.html>

<https://www.ictandhealth.com/news/newsitem/article/new-algorithm-can-detect-early-signs-of-dementia-years-ahead-of-symptoms.html>

<https://www.careforacure.org/single-post/2017/09/05/AI-Could-Predict-Alzheimers-Disease-Two-Years-in-Advance>

<http://californiaseniorguide.com/2017/09/artificial-intelligence-could-predict-alzheimers/>

<http://us.pressfrom.com/lifestyle/health-fitness/-80538-artificial-intelligence-could-predict-alzheimers-years-before-doctors/>

<https://www.usabreakingnews.net/2017/09/artificial-intelligence-can-predict-alzheimers-disease-two-years-before-doctors-can-study-shows/>

<https://www.alzheimer-riese.it/contributi-dal-mondo/ricerche/6362-algoritmo-puo-prevedere-l-alzheimer-anche-due-anni-prima-dei-sintomi>

1 f. Special Awards

Dr. Serge Gauthier, Chevalier (2017) National Order of Quebec (*l'Ordre national du Québec*)
Dr. Pedro Rosa Neto (2017) FRSQ Chercheur Bourcier Senior

This report was created by the core-PIs of the McGill University Research Centre for Studies in Aging on April 3, 2018.

Dr. Pedro Rosa-Neto, MD, PhD
Director: Dr. Pedro Rosa-Neto, Neurologist, Alzheimer Disease Research Unit,
Assistant Professor of Neurology, Neurosurgery and Psychiatry at McGill University,
Affiliated to the Douglas Hospital Research Center.