

# THE MCGILL UNIVERSITY RESEARCH CENTRE FOR STUDIES IN AGING (MCSA)



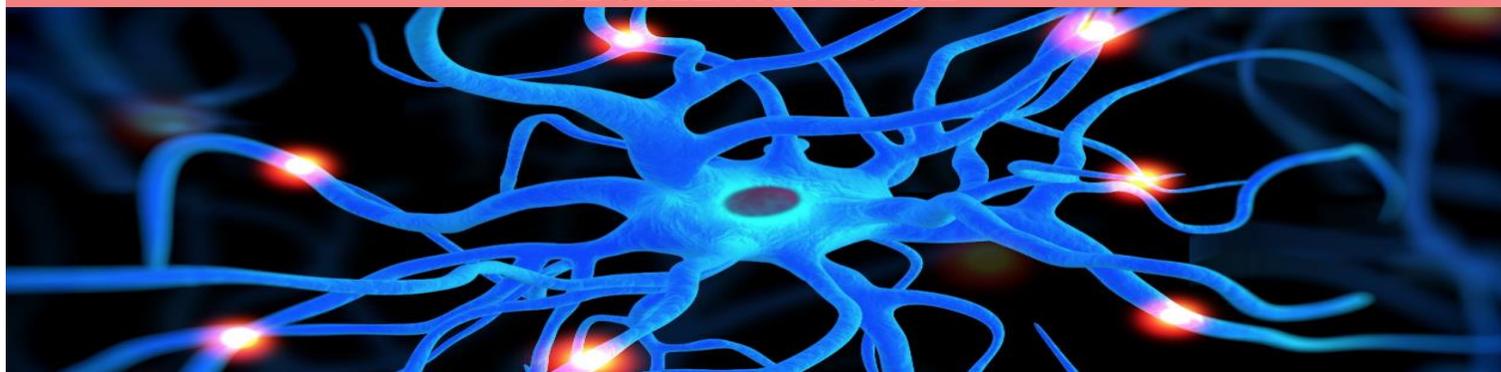
August 2021 – 14<sup>TH</sup> EDITION



Keeping you updated on the latest news, events, and research achievements!

The scientific achievements from last year were possible thanks to the active participation of our patients, their relatives, and friends. Together, we advance clinical science towards new therapies for Alzheimer's Disease.

## **HISTORIC MILESTONE FOR THE ALZHEIMER'S COMMUNITY: ADUHELM APPROVAL**

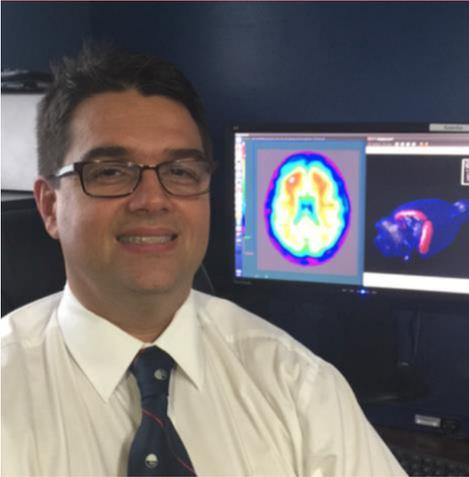


On June 7th, 2021, the Food and Drug Association (FDA) approved a new medication, Aduhelm, for Alzheimer's Disease. Aduhelm, created by the biotechnology company Biogen, is the first treatment for Alzheimer's Disease to be approved since 2003. What separates Aduhelm from other medications on the market is the technology to target the amyloid beta-42, which is the main component of the amyloid plaques found in the brains of persons with Alzheimer's disease. New studies have proven that on this new medication the presence of amyloid beta plaques has decreased. While the role of the amyloid on the progression of symptoms is still unclear, the fact that we can now decrease the build-up of amyloid beta plaques in the brain could bring much relief to some persons in the early stages of the disease.

Aduhelm will be subject to more clinical trials before reaching definitive approval in the United States. Biogen will be leading a post-approval clinical study which will be crucial, as it must be proven that the medication offers clinically meaningful benefits. Should the trials come back inconclusive, or fail to prove clinical benefits, the FDA will have to cancel their approval of the treatment. The two previous clinical trials showed mitigated results, torn between the multiple patient side effects and the very encouraging decrease of amyloid plaques. The approval was based on the belief that the benefits out-weighed the uncertainties related to the treatment.

The FDA justified its fast track approval because of the few treatments available for Alzheimer's disease, and to help with unmet medical needs. While the efficacy, accessibility and safety of the treatment has not yet fully been determined, the FDA's approval represents an important step in the Alzheimer's Disease research field. Although it is not sure whether and when this therapy will be available in Canada, the MCSA has already started discussing the prospects of approval of this therapy in Canada. We will keep you informed regarding the progress in this regard.

## A CONVERSATION WITH DR. PEDRO ROSA-NETO AND DR. SERGE GAUTHIER



Dear MCSA Community,

We have the honour of announcing that Dr. Serge Gauthier has retired after 35 years. Prior to his retirement, Dr. Gauthier was the Director of the Alzheimer Disease and Related Disorders Research Unit of the McGill University Research Centre for Studies in Aging, and professor in the Departments of Neurology & Neurosurgery, Psychiatry, and Medicine at McGill. Furthermore, he has excelled in the field of Alzheimer Disease by establishing the C5R which is a single point of contact for the coordination of the Clinical Research Centres and Memory Clinics studying and treating dementia in Canada. He has been a leader in the Canadian Consensus Conferences on the Diagnosis and Treatment of Dementia. In 2014, Dr. Gauthier was appointed to the Order of Canada, as well as the Ordre National du Québec in 2017 for his work in Alzheimer disease and dementia, and the development of research networks. In addition to such contributions, his vibrant personality combined with his relentless will to help people, has left an indelible imprint on countless patients, colleagues, and mentees along the way.

This newsletter honours Dr. Serge Gauthier, his incomparable career, as well as his retirement, with an exclusive sit-down interview with Dr. Pedro Rosa-Neto.

**Dr. Rosa-Neto: Today, I have the pleasure and the honor of interviewing my mentor, supervisor, colleague, and friend Dr. Serge Gauthier. Thank you so much and welcome, Dr. Gauthier. The first question everybody wants to know, and I would like to know as well, is what made you want to become a physician?**

**Dr. Gauthier:** That's easy to answer! It runs in the family on my mother's side. My grandfather was head of anaesthesiology at St. Luc's Hospital, my uncle was a pathologist conducting research on breast cancer and lymphoma. I was born and bred to be a doctor.

**Dr. Rosa-Neto: How was your experience in medical school? What was going through your mind in the first and the second years of med school?**

**Dr. Gauthier:** Well, I was only 17. I was the second youngest student in a class of approximately 140. So, I had to be attentive. I was fortunate during my time in medical school to have an elective rotation at the Montreal General Hospital for one month and got a glimpse of what it's like to be a neurologist. Dr. Alberto Aguayo was my supervisor.

**Dr. Rosa-Neto: What made you transition from a medical doctor to neurologist?**

**Dr. Gauthier:** Unfortunately, it's partly due to my mother's illness. She had multiple sclerosis, which started around the time I was in first year medical school, and so, I got to meet her neurologists. There was not a lot of treatments for M.S. in those days, but her treating physicians demonstrated a lot of empathy. I saw the way they performed their physical exams, the way they spoke to people, and was greatly impressed. I must also say that neurosciences in those days -we're talking about 1968-69, was well developed in Montreal.



John Buckley, Jean-François Roy, and Dr. Serge Gauthier, 1989

**Dr. Rosa-Neto: Since you were the youngest professor in your department at the time, do you have any specific memories regarding your academic progression?**

**Dr. Gauthier:** Well, when I took a staff position at the Neuro I was 26 years old. I was at the right place and at the right time. I just went with the flow of life, which is a good philosophy for people working in a field where change is constant. I was lucky to meet people like my teachers, Dr. McNaughton. Then colleagues such as Dr. Pierre Etienne, Dr. Michel Panisset, and you. And of course, my wife, has offered constant support throughout it all, even during many trips around the world!

**Dr. Rosa-Neto: There are many events that have happened in your career. For example, disclosure of the genes associated with the disease, the introduction of new concepts regarding the clinical dimension of the disease, then the introduction of a few therapies. In your opinion, what progressed the most over the years? What is the biggest difference you see when comparing today to the late 70s and early 80s, regarding the progression of the field?**



Dr. Serge Gauthier Order of Canada Ceremony September 2015

**Dr. Gauthier:** Some things have remained constant: we must properly make and disclose the diagnosis, and support the family through the stages of the disease. There are more resources for families. Dr. Judes Poirier and I re-edited our book for families this year (*La maladie d'Alzheimer, Le Guide*), McGill Dementia Education Program (DEP) was recently created and is a partner with the MCSA.

**Dr. Rosa-Neto: In your opinion, what's next, what's coming, do you think we are close to achieving a therapy?**

**Dr. Gauthier:** I think anti-amyloid drugs are around the corner. These medications will be effective to reduce the amyloid load in the brain. But we need to learn more about them, to use them wisely for the right patients, at the right stages of the disease. These are not like donepezil where you can stop and see if it makes a difference. If you start, you should continue it for at least two years, and then see if it slows the progression of the disease. These will be intravenous infusions, most of them. So, we'll need to

learn from other neurologists who do M.S. treatments or other internists. We can do it at home with trained nurses rather than using our hospital beds or clinics. The other thing I expect is anti-tau therapy will be effective. My hope is at some point, maybe in three or five years, we'll be able to combine therapies. It's going to be a challenging study design but nonetheless, it needs to be done

**Dr. Rosa-Neto: Fantastic! I would like to take this opportunity to thank you for everything you have given to us during all these years, especially to me and to the students from MCSA. You are an important role model for us. Once again, thank you.**



On Wednesday, June 30th, 2021, the McGill University Research Centre for Studies in Aging celebrated the illustrious career of Dr. Serge Gauthier to wish him well on his future endeavors in retirement. Dr. Gauthier has provided us with over 35 years of devoted service with the purpose of helping others live happier and healthier lives, which had been an absolute joy to everyone, staff, and patients alike.

During the celebration, hosted by Dr. Dolly Dastoor and MCSA director Dr. Pedro Rosa-Neto, 87 people gathered virtually to Celebrate Dr. Gauthier as loyal friend, caring doctor, and a thoughtful mentor. The MCSA was delighted to have multiple world-renowned doctors speak in honor of Dr. Gauthier, such as Drs. Remi Quirion, Zaven Khachaturian, Jeffrey Cummings, Bruno Dubois, Liyong Wu, Yves Joannette, Abraham Fuks, Jose Morais, Paolo Vitali, Maiya Geddes, Gerhard Multhaup and so many more! We also had the pleasure of having Dr. Gauthier's family

say a few words. Longtime friends and colleagues Silvana Aguzzi and Tamar Tatigian surprised Dr. Gauthier at his house with decorations, a gift basket and a portrait drawn by local artist David Durham.

To show our gratitude to Dr. Gauthier, we have named a research fellowship fund in his honour to help future researcher come to the MCSA. Donations are gratefully accepted in honour of "Dr Serge Gauthier Dementia Research Fellowship Fund" (<https://www.alumni.mcgill.ca/give/index.php?formtype=MCSA&new=1>)

## **ALZHEIMER'S DISEASE INTERNATIONAL – WORLD ALZHEIMER REPORT**

Alzheimer's Disease International (ADI) is an international federation consisting of over one hundred Alzheimer's associations and federations and is related to the World Health Organization. ADI has commissioned McGill University to write the next two editions of the World Alzheimer Report focusing on Diagnosis (2021) and Post-Diagnostic Support (2022). The team is led by Dr. Serge Gauthier, with Dr. Pedro Rosa-Neto, Dr. José A. Morais, Claire Webster, Dr. Tamara Ellen Carver, Zeina Salameh, Carol Servaes, Maria Vincelli, Diane Weidner, and Leila Zahabi.



"We strongly believe that our combined experience and expertise in research, care, education, and lived experience in dementia-related illnesses will provide a tangible, meaningful and inclusive report on diagnosis and the management of dementia to Alzheimer's Disease International," says Dr. Gauthier on behalf of the McGill team.

Congratulations to everyone involved!

## FEATURED ASSOCIATE RESEARCH MEMBER – DR. JOSEPHINE NALBANTOGLU Ph.D



Dr. Josephine Nalbantoglu is Associate Provost (Graduate Education) and Dean of Graduate and Postdoctoral Studies (GPS) of McGill University. Prior to her appointment in 2015, she served as the Director of the Integrated Program in Neuroscience, which has over 350 students and 190 supervisors. It is not only McGill's largest graduate program, but Canada's largest graduate neuroscience program.

Dr. Nalbantoglu is a member of the Department of Neurology and Neurosurgery with affiliations to the Montreal Neurological Institute (the Neuro). She earned her PhD in Biochemistry from McGill in 1984 and returned as a faculty member in 1990 after pursuing research in Montreal, London and Saitama, Japan. A prolific and widely respected researcher, Dr. Nalbantoglu has published extensively in leading academic journals and has spoken at academic conferences around the world. She is the recipient of numerous awards.

Under Dr. Nalbantoglu's leadership, Graduate and Postdoctoral Studies (GPS), has spearheaded the development of interdisciplinary, interfaculty graduate programs, which build on McGill's research strengths and directly contribute to connecting across disciplines and sectors. GPS has also expanded McGill's international partnerships through new joint and dual degrees. Since her appointment as Dean, she has worked to enhance the graduate student experience through a variety of initiatives, including the launch of graduate mobility awards, doctoral internships, communications training, and skills development. Namely, Dr. Nalbantoglu has led the creation of the Individual Development Plan, which provides graduate students with academic, career and professional tools that aim to prepare them for post-degree careers.

## FEATURED RESEARCHER – DR. GASSAN MASSARWEH, Ph.D



Dr. Gassan Massarweh, Ph.D. is an Associate Professor in the Department of Neurology and Neurosurgery, McGill University, and the Director, Cyclotron and Radiochemistry Facility at the Brain Imaging Centre/Montreal Neurological Institute (BIC/MNI). In 1992 Dr. Massarweh completed his PhD in Chemistry with specialization in organic and organometallic chemistry under the supervision of Dr. R. D. Fischer at the University of Hamburg (Hamburg, Germany). He performed post-doctoral training in the department of chemistry at UQAM in Montreal. In 1996, he started working as a lecturer at UQAM and in 2003 he joined the Cyclotron and Radiochemistry team at the BIC as a radiochemist. In 2009 he became the Director of Cyclotron and Radiochemistry Laboratory at Capital Health/Dalhousie University in Halifax/Nova Scotia where he worked on the establishment of a new radiochemistry facility. In 2012, he returned to Montreal to help with the

establishment of a new cyclotron and radiochemistry laboratory at the CRCHUM. He joined in 2014 again the Cyclotron and Radiochemistry Facility which is part of the PET Unit at the BIC as the director of the facility.

Dr. Massarweh's group focusses on developments in radiochemistry along the following principal axes of research: The development of novel synthetic methods using organic and inorganic catalysts for rapid radiolabeling of organic compounds. The development and in-vivo evaluation of novel PET radiotracers for Alzheimer's and Parkinson's diseases to target  $\beta$ -Amyloid plaques, Tau protein and  $\alpha$ -Synuclein protein using fluorine-18 and carbon-11.

## NEW STAFF & STUDENTS



### **Kayla Guindon, Administrative Assistant**

Kayla is a recent graduate from Concordia University in which she obtained her Bachelor's degree in psychology. Before pursuing grad school, she plans to take a year off to work and volunteer. As of May, Kayla started working in the administration department at the MCSA and is very happy for this opportunity.



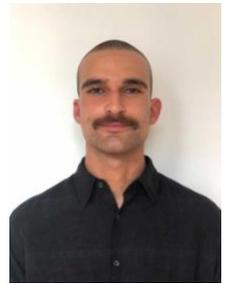
### **Salma Rakani, Research Assistant**

Salma Rakani has just started working as a research assistant at Crossroads. She will be assisting the team in various ways and working with the cohort participants. She is looking forward to learning more from everyone at the MCSA and assisting in an amazing project!



### **Michelle Menniti, Receptionist**

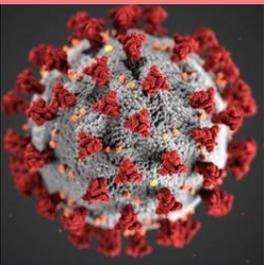
Michelle joined the MCSA team July 19<sup>th</sup>, 2021. She has her secretarial degree, and looks forward to working with the MCSA team!



### **Elias-Yosef Massarweh, Communications**

Elias-Yosef Massarweh is completing a B.A. at the Université du Québec à Montréal (UQAM) in Media communication and Politics. As of July, he joined the MCSA to help with translation and communication tasks. He is looking forward to learning from this experience and participating in this great project.

## COVID-19 AND CLINICAL TRIALS AT THE MCSA



Clinical trials for Alzheimer's Disease have been affected by the COVID-19 pandemic. Most trial studies are on hold, due to the inability to have dosing and in-person clinic visits. This will affect nearly 94 new therapies in clinical trials today. Most of the therapies target brain amyloid including Roche's gantenerumab, Biogen's aducanumab, and Eisai's BAN-2401, and six preventive therapies including Eli Lilly's donanemab and Alzheon's ALZ-801.

Dr. Pedro Rosa-Neto, Director of the McGill University Research Centre for Studies, believes that remote technologies for assessing patients in clinical trials seem to be a reasonable alternative for the continuation of data collection. The disruption of important clinical research by the COVID-19 pandemic is linked also to the particular vulnerability of the older adults; the most targeted subjects by COVID-19. At MCSA, three clinical trials (DIAN, BUENA, and Avanir) are currently on hold and plan on restarting recruitment as soon as possible. Our team will answer all questions on the above studies in regards to clinical trials and if you are interested in obtaining more information and/or participating in one of our clinical trials please do not hesitate to contact Tamar Tatigian at 514-761-6131 x6314 or email: [info.mcsa@mcgill.ca](mailto:info.mcsa@mcgill.ca)

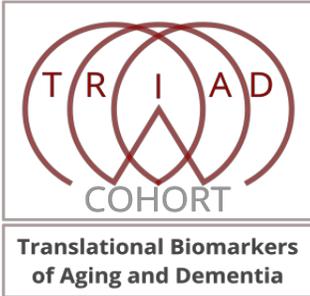
## MCSA'S PARTICIPATION IN THE ALZHEIMER'S ASSOCIATION INTERNATIONAL CONFERENCE (AAIC) 2021

MCSA research members took part in the most prestigious international conference on dementia research this past July. The conference took place in person in Denver, Colorado, and virtually. The data collected in our TRIAD cohort allowed several of the research staff to take part in this conference by having a presentation and/or having their posters published on the AAIC website. These presentations and the participation in such a prestigious conference alongside the biggest names in the field will help advance Canadian studies on Alzheimer's Disease and other dementias.



Presenter	Title
Dr. Stijn Servaes, PhD	TAU-LOAD in the lingual gyrus impacts anxiety levels during the COVID-19 pandemic in participants of longitudinal observational studies in aging.
Jaime Fernandez Arias	Nonverbal memory scores are associated with the lateralization of tau in the medial temporal lobe.
Cécile Tissot Julie Ottoy	Discrepancy between plasma ptau181 and tau-pet statuses. Microglia activation predicts tau positivity beyond A $\beta$ in Alzheimer's disease.
Firoza Lussier	Tau-PET is associated with knowledge of COVID-19, COVID-19-related distress, and change in sleep quality during the pandemic (Oral Presentation).
Firoza Lussier	Adapting to the COVID-19 pandemic in cohort studies: validation of online assessments of cognition and neuropsychiatric symptoms in an aging population (Poster Presentation).
Peter Kang	Cognitive health mediates the effect of hippocampal volume on COVID19-related knowledge or anxiety change during the COVID19 pandemic.
Peter Kunach	Quantifying Acute Tau Inoculations in Living Rats using PET
Nesrine Rahmouni	Associations between neutrophils and amyloid deposition in the Alzheimer's disease spectrum.
Nesrine Rahmouni and Alyssa Stevenson	Verbal Fluency associated with tau accumulation and not amyloid deposition in the Alzheimer's disease spectrum.
Alyssa Stevenson	Cognitive reserve: Evaluating the relationship between WASI-II Matrix Reasoning and tau accumulation using [ $^{18}$ F]MK6240 in monolingual and bilingual individuals.
Jenna Stevenson	COVID-19 Pandemic: Quantifying the effects of the first lockdown on behavioral and cognitive measures using TASIC.
Nina Margherita Poltronetti	Visual Memory Test Equal to Commonly Used Verbal Memory Test in Predicting Tau in the Medial Temporal Lobe.
Vanessa Pallan	Tau accumulation using [ $^{18}$ F]MK6240 PET is associated with increase in executive dysfunction in prodromal AD.

## WHAT IS THE TRIAD COHORT?



The Translational Biomarkers in Aging and Dementia (TRIAD) cohort is a longitudinal observational cohort specifically designed to study mechanisms driving dementia. The cohort studies dementia markers and their progression from pre-symptomatic stages to the onset of Alzheimer's disease or other types of dementia. TRIAD participants are followed in a longitudinal manner with clinical and neuropsychological assessments, fluid and imaging biomarkers every 24 months. Results generated from the TRIAD cohort help advance scientific knowledge and develop better targeted clinical trials to cure Alzheimer's Disease and dementia. The TRIAD cohort is actively recruiting participants, for more information about the participation criteria and the different measures please refer to <https://triad.tnl-mcgill.com>, to get additional information or to participate call our research centre

514-761-6131 ext: 6321. For research participants and sponsors that are interested in donating to the TRIAD Cohort Research Study, please contact Silvana Aguzzi at T:514-761-6131 x 6308 or email [silvana.aguzzi@mcgill.ca](mailto:silvana.aguzzi@mcgill.ca) or Alexandra Triantafillopoulos at 514- 761-6131 X 6311 or by email at [alexandra.triantafillopoulos1@mcgill.ca](mailto:alexandra.triantafillopoulos1@mcgill.ca).

## WHY YOUR DONATIONS ARE SO IMPORTANT



Between 2020-2021, our fundraising activities were impacted by the pandemic. Your continued support and encouragement were crucial and have played a central role in the continued success of the Centre's outreach, research infrastructure objectives, and medical research initiatives for the community. Thank you for helping us advance our mandate towards prevention, aging research, and education. Income tax receipts shall also be issued for all donations exceeding \$15.00. If you would like to donate by mail, phone or email, please contact Alexandra Triantafillopoulos at 514- 761-6131 X 6311 or by email at [alexandra.triantafillopoulos1@mcgill.ca](mailto:alexandra.triantafillopoulos1@mcgill.ca) or [silvana.aguzzi@mcgill.ca](mailto:silvana.aguzzi@mcgill.ca)

## NEW MCSA SOCIAL MEDIA

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for Studies in Aging @MCSA20



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### YouTube:

<https://www.youtube.com/channel/UC9q0DRFcb6cgJRskdwwKD1Q/videos>



### Website:

[www.aging.mcgill.ca](http://www.aging.mcgill.ca)  
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<http://alzheimer.mcgill.ca>



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