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Sarah A Gagliano Taliun

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Research Focus

Our research seeks to identify and better understand the genetic contributors to complex traits, using "big data" *in silico*, particularly the relationship between the brain and heart.

Academic Positions

- **Principal Investigator**, Montréal Heart Institute, Montréal, Canada *July 2020 – present*
- **Assistant Professor/professeure sous octroi adjointe**, *July 2020 – present*
  Department of Medicine, Department of Neurosciences, Université de Montréal, Montréal, Canada
- **Honorary Senior Research Associate**, UCL Institute of Neurology, *Nov 2018 – Oct 2021*
  Neurodegenerative Diseases

Education and Training

- **Postdoctoral Research Fellow**, School of Public Health, University of Michigan, Ann Arbor, USA *July 2016 – June 2020*
  Supervisors: Gonçalo Abecasis and Michael Boehnke
- **Weston Brain Institute International Fellowship in Neuroscience** *December 2015 – May 2016*
  Supervisor: Michael Weale, King's College London
  Project: *In silico* identification of genetic risk variants for Parkinson's disease
- **PhD**, Medical Science, Institute of Medical Science, University of Toronto, Canada *June 2016*
  Supervisors: James Kennedy and Jo Knight
  Research conducted at Centre for Addiction and Mental Health (CAMH)
  Dissertation: *In silico* prioritization of genetic risk variants using functional genomic information
- **Honours BSc**, Biochemistry & Human Biology with high distinction, University of Toronto, Canada *June 2012*

Funding and Awards

- Alzheimer Society of Canada and Canadian Institute of Health Research – Institute of Aging, Alzheimer Society Research Program, **New Investigator Grant**: "Bioinformatics-powered genetic characterization of the impact of biological systems on Alzheimer's disease and neurodegeneration" *2023–2027*
- Outstanding Researcher, CIHR Reviewer in Training Programme *Fall 2022*
- **CIHR Project Grant**: "Study of sex-specific biological factors underlying cognitive function and cardiovascular outcome"; Nominated principal applicant: Marie-Pierre Dubé (my role: co-principal applicant) *2022–2026*
- CIHR (Vascular Cognitive Impairment Health Research Training Platform, VAST), "Health Research Training to Address Vascular Contributions to Cognitive Decline: the Vascular Training (VAST) Platform"; Nominated principal investigator: Eric Smith (my role: co-applicant & mentor) *2022–2028*
- CIHR Project Grant: "Precision medicine study of treatment options in type 2 diabetes patients without cardiovascular disease"; Nominated principal investigator: Marie-Pierre Dubé (my role: co-applicant) *2022–2027*
- CIHR Team Grant: Diabetes Mechanisms and Translational Solutions - General Pool, "Precision medicine study of type 2 diabetes in the COLCOT-T2D trial"; Nominated principal investigator: Marie-Pierre Dubé (my role: co-investigator) *2022-2028*
- Crédits de relance économique – Soutien chercheurs et chercheuses FRQS *2021*
- Operational Funds, IVADO *2021–2023*
- Programme de Bourses de **Chercheur-boursier Junior 1** en Intelligence Artificielle et Santé Numérique, Fonds de la Recherche en Santé du Québec (FRQS): Le développement des *2020–2024*

modèles prédictifs qui sont spécifiques au sexe pour la médecine personnalisée en santé cardiovasculaire

- **Precision Health Scholars Award**, University of Michigan *2019–2020*
- **Stellar Abstract Award** Program in Quantitative Genomics (PQG), Harvard *November 2018*
- **Postdoctoral Fellowship Award**, Stanley Center for Psychiatric Research, Broad *2017–2018*
- **Weston Brain Institute International Fellowship in Neuroscience** *December 2015 – May 2016*
- **"3 Minute Thesis"** competition, University of Toronto finalist *April 2015*
- **McLaughlin Early Career Investigator Award** *October 2015*
- **Younger Family Foundation Award** *Fall 2015*
- **CIHR STAGE (Strategic Training for Advanced Genetic Epidemiology) trainee** *2015–16*
- **Institute of Medical Science Open Fellowship Award** *Fall 2014*
- **University of Toronto McLaughlin Centre Training Award** *Fall 2014*
- **Peterborough K.M. Hunter Graduate Studentship** *Fall 2014*
- **Institute of Medical Science Open Fellowship Award** *Fall 2013*
- **School of Graduate Studies Conference Grants** *Fall 2012, 2013*
- **University of Toronto McLaughlin Centre Training Award** *September 2012*
- **Canadian Bioinformatics Workshop Registration Award** *September 2012*
- **Institute of Medical Science Entrance Award**, University of Toronto September 2012
- **University of Toronto Fellowship – MSc** *September 2012*
- **Silver Medal in Biochemistry, University of Toronto** *June 2012*
- **Fr. Robert Madden, csb Award** for outstanding contribution to student life at St. Michael's College, University of Toronto *June 2012*
- **St. Michael's College In-Course Scholarship** 2010-12
- **Dean's List Scholar** in the Faculty of Arts and Science, University of Toronto 2009-12
- **University of Toronto Scholar** *2008-09*
- **Governor General's Academic Bronze Medal** *June 2008*

Publications

* Equal contribution ****** Co-senior and/or corresponding author ___ Trainee under my supervision

Peer-reviewed

1. K. D'Sa, S. Guelfi, J. Vandrovcova, R.H. Reynolds, D. Zhang, J. Hardy, J.A. Botía, M.E. Weale, K. Small, **S.A. Gagliano Taliun,** M. Ryten (2023) Analysis of subcellular RNA fractions demonstrates significant genetic regulation of gene expression in human brain post-transcriptionally. *Scientific Reports*. PMID: 37620324
2. Q. Ye, **S.A. Gagliano Taliun**** (2023) Genetically predicted waist to hip circumference ratio and coronary artery disease: a sex-specific Mendelian randomization study. *HGG Advances*.
3. F. Lona-Durazo, R.H. Reynolds, S.W. Scholz, M. Ryten, **S.A. Gagliano Taliun**** (2023) Regional genetic correlations highlight relationships between neurodegenerative diseases and the immune system. *Communications Biology*. 6:729. PMID: 37454237
4. Z. Chen, R.H. Reynolds, A.F. Pardiñas, **S.A. Gagliano Taliun**, W. van Rheenen, K. Lin, A. Shatunov, E.K. Gustavsson, I. Fogh, A.R. Jones, W. Robberecht, P. Corcia, A. Chiò, P.J. Shaw, K.E. Morrison, J.H. Veldink, L.H. van den Berg, C.E. Shaw, J.F. Powell, V. Silani, J.A. Hardy, H. Houlden, M.J. Owen, M.R. Turner, M. Ryten, A. Al-Chalabi (2023) The contribution of Neanderthal introgression and natural selection to neurodegenerative diseases. *Neurobiology of Disease*. 180:106082. PMID: 36925053
5. R.H. Reynolds, A.Z. Wagen, F. Lona-Durazo, S.W. Scholz, M. Shoai, J. Hardy, **S.A. Gagliano Taliun**, M. Ryten (2023) Identifying local genetic correlations among neurodegenerative and neuropsychiatric diseases. *npj Parkinson's disease*. 9:70. PMID: 37117178
6. M. Yu, M. Aguirre, M. Jia, K. Gjoni, A. Córdova Palomera, C. Munger, D. Amgalan, X.R. Ma, A. Pereira, C. Seidman, J. Seidman, M. Tristani-Firouzi, W.K. Chung, E. Goldmuntz, D. Srivastava, R. Loos, N. Chami, H. Cordell, M. Dressen, B. Müller-Myhsok, H. Lahm, M. Krane, K. Pollard, J. Engreitz, **S.A. Gagliano Taliun**, B. Gelb, J.R. Priest (2023) Oligogenic architecture of rare

noncoding variants distinguishes 4 congenital heart disease phenotypes. *Circulation: Genomic and Precision Medicine.* e003968. PMID: 37026454

7. M. Shoaib, Q. Ye, H. IglayReger, M. Boehnke, C.F. Burant, S.A. Soleimanpour, **S.A. Gagliano Taliun**** (2023) Evaluation of polygenic risk scores to differentiate between type 1 and type 2 diabetes. *Genetic Epidemiology*. 47, 303-313. 10.1002/gepi.22521. PMID: 36821788
8. G.J.M. Zajac, **S.A. Gagliano Taliun**, C. Sidore, S.E. Graham, B.O. Åsvold, B. Brumpton, J.B. Nielsen, W. Zhou, M. Gabrielsen, A.H. Skogholt, L.G. Fritsche, D. Schlessinger, F. Cucca, K. Hveem, C. Willer, G.R. Abecasis (2023) A Fast Linkage Method for Population GWAS Cohorts with Related Individuals. *Genetic Epidemiology*. 10.1002/gepi.22516. PMID: 36739617
9. C. Savignac, S. Villeneuve, A. Badhwar, K. Saltoun, K. Shafighi, C. Zajner, V. Sharma, **S.A. Gagliano Taliun**, S. Farhan, J. Poirier, D. Bzdok (2022) APOE alleles are associated with sex-specific structural differences in brain regions affected in Alzheimer's disease and related dementia. *PLoS Biology* 20(12): e3001863. PMID: 36512526
10. G.R.B. Saunders*, X. Wang*, F Chen*, S-K. Jang*, M Liu*, C. Wang*, S. Gao, Y. Jiang, C. Khunsriraksakul, J.M. Otto, 23andMe Research Team, The Biobank Japan Project, […] ~100 middle authors […], Chiara Batini, Andrew Bergen, Laura Bierut, Sean P. David, **Sarah A. Gagliano Taliun**, D.B. Hancock, B. Jiang, M.R. Munafò, T. Thorgeirsson, D.J. Liu**, Scott Vrieze** (2022) Multi-Ancestry Meta-analyses map 2,143 loci for Tobacco and Alcohol Use. *Nature*. 612:720-724. PMID: 36477530
11. Y. Zhao, **S.A. Gagliano Taliun** (2022) Lipid-lowering drug targets and Parkinson's disease: a sex-specific Mendelian randomization study. *Frontiers in Neurology.* 3:940118. PMID: 36119674
12. S.C. Hanks, L. Forer, S. Schönherr, J. LeFaive, T. Martins, R. Welch, **S.A. Gagliano Taliun**, D. Braff, J.M. Johnsen, E.E. Kenny, B.A. Konkle, M. Laakso, R.F.J. Loos, S. McCarroll, C. Pato, M.T. Pato, A.V. Smith, NHLBI Trans-Omics for Precision Medicine (TOPMed) Consortium, M. Boehnke, L.J. Scott, C. Fuchberger. (2022) Extent to which array genotyping and imputation with large reference panels approximates deep whole genome sequencing. *American Journal of Human Genetics*. 109(9):1653-1666. PMID: 35981533
13. M.R. Moksnes, A. Falkmo Hansen, S.E. Graham, **S.A. Gagliano Taliun**, K-H. Wu, K. Thorstensen, L.G. Fritsche, D. Gill, S. Burgess, F. Cucca, D. Schlessinger, G.R. Abecasis, B. Olav Åsvold, J.B. Nielsen, K. Hveem, C.J. Willer & B.M. Brumpton. (2022) Genome-wide meta-analysis of iron status and the effect of iron on all-cause mortality in HUNT. *Communications Biology*. 5:591. PMID: 35710628
14. T.N. Kelly*, X. Sun*, K.Y. Ye*, M.R. Brown*, **S.A. Gagliano Taliun***, J.N. Hellwge*, X. Mi*, J.A. Brody* […] ~100 middle authors […] T.L. Edwards, G.R. Abecasis, X. Zhu, D. Levy, D.K. Arnett, A.C. Morrison. (2022) Insights from a Large-Scale Whole Genome Sequencing Study of Systolic Blood Pressure, Diastolic Blood Pressure, and Hypertension. *Hypertension*. PMID: 35652341
15. **S.A. Gagliano Taliun**, P. Sulem, G. Sveinbjornsson, D.F. Gudbjartsson, K. Stefansson, A.D. Paterson, M. Barua. (2022) GWAS of hematuria. *Clinical Journal of the American Society of Nephrology*. 17(5):672-683. PMID: 35474271
16. T. Singh, T. Poterba, D. Curtis, H. Akil, M. Al Eissa, J.D. Barchas, N. Bass, T.B. Bigdeli, G. Breen, E.J. Bromet, P.F. Buckley, W.E. Bunney, J. Bybrerg-Grauholm, W.F. Byerley, […] **S.A. Gagliano Taliun** […] ~100 middle authors […] R.A. Ophoff, T.M. Werge, P.F. Sullivan, M.J. Owen, M. Boehnke, M.C. O'Donovan, B.M. Neale, M.J. Daly. (2022) Exome sequencing identifies rare coding variants in 10 genes which confer substantial risk for schizophrenia. *Nature.* 604:509-516. PMID: 35396579
17. **S.A. Gagliano Taliun**** & D.M. Evans. (2021) Ten simple rules for conducting a Mendelian randomization study. *PLoS Computational Biology*. 17(8): e1009238. PMID: 34383747
18. R. Feleke, R.H. Reynolds, A. Smith, B. Tilley, **S.A. Gagliano Taliun**, J. Hardy, P.M. Matthews, S. Gentleman, D. Owen, M.R. Johnson, P. Srivastava, M. Ryten. (2021) Cross-platform transcriptional profiling identifies common and distinct molecular pathologies in Lewy Body diseases. *Acta Neuropathologica*. 142(3):449-474. PMID: 34309761
19. M. Riise Moksnes, H. Røsjø, A. Richmond, M. Nakrem Lyngbakken, S.E. Graham, A. Falkmo Hansen, B.N. Wolford, **S.A. Gagliano Taliun**, J. LeFaive, H. Rasheed, L. Thomas, W. Zhou, A. Campbell, D.J. Porteous, P. Welsh, N. Sattar, G. Davey Smith, L. Fritsche, J.B. Nielsen, B.O. Åsvold,

K. Hveem, C. Hayward, C. Willer, B.M. Brumpton, T. Omland. (2021) Genome-wide association study of cardiac troponin I in the general population. *Human Molecular Genetics*. ddab124. PMID: 33961016

20. Z. Chen, D. Zhang, R.H. Reynolds, E. Gustavsson, K. D'Sa, S. García Ruiz, A. Fairbrother-Browne, J. Vandrovcova, J. Hardy, H. Houlden, **S.A. Gagliano Taliun**, J. Botía, M. Ryten. (2021) Human-lineage-specific genomic elements are enriched within genes implicated in neurodegenerative diseases. *Nature Communications.* 12:2076. PMID: 33824317
21. D. Taliun*, D.N. Harris*, M.D. Kessler*, J. Carlson*, Z.A. Szpiech*, R. Torres*, **S.A. Gagliano Taliun***, A. Corvelo*, […] ~100 middle authors […], C.C. Laurie, C.E. Jaquish, R.D. Hernandez, T.D. O'Connor, G.R. Abecasis. (2021) Sequencing of 53,831 diverse genomes from the NHLBI TOPMed Program. *Nature*. 590:290-299. PMID: 33568819
22. J.B. Nielsen, O. Rom, I. Surakka, S. Graham, W. Zhou, T. Roychowdhury, L. Fritsche, **S.A. Gagliano Taliun** […] ~50 middle authors […] M. Boehnke, S. Kathiresan, G.R. Abecasis, Y.E. Chen, C. Willer, K. Hveem. (2020) Loss-of-function genetic variants with impact on liver-related blood traits highlight potential therapeutic targets for cardiovascular disease. *Nature Communications*. 11:6417. PMID: 33339817
23. X. Zhao, D. Qiao, C. Yang, S. Kasela, W. Kim, N. Shrine, C. Batini, T. Sofer, **S.A. Gagliano Taliun** [...] ~ 60 middle authors […] M. Cho, A. Manichaikul. (2020) Whole genome sequence analysis of pulmonary function and COPD in 19,996 multi-ethnic participants. *Nature Communications*. 11:5182. PMID: 33057025
24. Z. Chen, W. Yan Yau, Z. Jaunmuktane, A. Tucci, P. Sivakumar, **S.A. Gagliano Taliun** […] ~20 middle authors […] J. Hardy, M. Ryten, J. Vandrovcova, H. Houlden. (2020) Neuronal intranuclear inclusion disease is genetically heterogenous. *Annals of Clinical and Translational Neurology*. 10;7(9):1716-172. PMID: 32777174
25. **S.A. Gagliano Taliun***, P. VandeHaar*, A.P. Boughton, R.P. Welch, D. Taliun, E.M. Schmidt, W. Zhou, J.B. Nielsen, C.J. Willer, S. Lee, L.G. Fritsche, M. Boehnke, G.R. Abecasis (2020) Exploring and visualizing large-scale genetic associations using PheWeb. *Nature Genetics*. 52:550–552. PMID: 32504056
26. W. Zhou*, Z. Zhao*, J.B. Nielsen, L.G. Fritsche, J. LeFaive, **S.A. Gagliano Taliun**, W. Bi, M.J. Daly, B.M. Neale, K. Hveem, G.R. Abecasis, C.J. Willer, S. Lee. (2020) Scalable generalized linear mixed model for region-based association tests in large biobanks and cohorts. *Nature Genetics*. 52:634–639. PMID: 32424355
27. F. Zhang, M. Flickinger, **S.A. Gagliano Taliun**, InPSYght Psychiatric Genetics Consortium, G.R Abecasis, L.J. Scott, S.A. McCarroll, C.N. Pato, M. Boehnke, H.M. Kang (2020) Ancestry-agnostic estimation of DNA sample contamination from sequence reads. *Genome Research*. 30(2):185-194. PMID: 31980570
28. S. Guelfi, K.D'Sa, J. Botía, J. Vandrovoca, R.H. Reynolds, D. Zhang, A. Ramasamy, D. Trabzuni, L. Collado-Torres, A. Thomason, P. Quijada Leyton, **S.A. Gagliano Taliun**, Mike A. Nalls, C. Smith, J. Hardy, M.E. Weale, K.S. Small, M. Ryten (2020) Regulatory sites for known and novel splicing in human basal ganglia are enriched for disease-relevant information. *Nature Communications.* 11:1041. PMID: 32098967
29. R.H. Reynolds, J. Hardy, M. Ryten**, **S.A. Gagliano Taliun**** (2019) Informing disease modelling with brain-relevant functional genomic annotations. *Brain*. 0:1-19. PMID: 31603214
30. D. Dutta, **S.A. Gagliano Taliun**, J. Weinstock, M. Zawistowski, C. Sidore, F. Cucca, D. Schlessinger, G. Abecasis, C. Brummett, S. Lee. (2019) Meta-MultiSKAT: Multiple phenotype meta-analysis for region-based association test. *Genetic Epidemiology*. 43(7):800-814. PMID: 31433078
31. L.G. Fritsche, L. J. Beesley, P. VandeHaar, R.B. Peng, M. Salvatore, M. Zawistowski, **S.A. Gagliano Taliun**, S. Das, J. LeFaive, E.O. Kaleba, T.T. Klumpner, S.E. Moser, V.M. Blanc, C.M. Brummett, S. Kheterpal, G. R. Abecasis, S.B. Gruber, B. Mukherjee (2019) Exploring various polygenic risk scores for skin cancer in the phenomes of the Michigan Genomics Initiative and the UK Biobank with a visual catalog: PRSWeb. *PLOS Genetics*. 15(6):e1008202. PMID: 31194742
32. **S.A. Gagliano Taliun** (2019) Genetic determinants of low vitamin B12 levels in Alzheimer's disease risk. *Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring*. 11:430-434. PMID: 31206009

33. R.H. Reynolds, J.A. Botía, M.A. Nalls, International Parkinson's Disease Genomics Consortium (IPDGC), J. Hardy, **S.A. Gagliano Taliun****, M. Ryten****** (2019) Moving beyond neurons: the role of cell type-specific gene regulation in Parkinson's disease heritability. 5:6. *NPJ Parkinsons Disease*. PMID: 31016231
34. **S.A. Gagliano****, S. Sengupta, C. Sidore, A. Maschio, F. Cucca, D. Schlessinger, G.R Abecasis** (2018) Relative impact of indels versus SNPs on complex disease. *Genetic Epidemiology*. 43(1):112-117. PMID: 30565766
35. C.D. Hughes, M.L. Choi, M. Ryten, L. Hopkins, A. Drews, J.A. Botía, M. Iljina, M. Rodrigues, **S.A. Gagliano**, S. Gandhi, C. Bryant, D. Klenerman (2018) Picomolar concentrations of oligomeric alpha synuclein sensitizes TLR4 to play an initiating role in PD pathogenesis. *Acta Neuropathologica*. 137(1):103-120. PMID: 30225556
36. W. Zhou, J.B. Nielsen, L.G. Fritsche, R. Dey, M.B. Elvestad, B.N. Wolford, J. LeFaive, P. VandeHaar, **S.A. Gagliano**, A. Gifford, L.A. Bastarache, W-Q. Wei, J.C. Denny, M. Lin, K. Hveem, H.M. Kang, G.R. Abecasis, C.J. Willer, S. Lee (2018) Efficiently controlling for case-control imbalance and sample relatedness in large-scale genetic association studies. *Nature Genetics*. 50(9):1335-1341. PMID: 30104761
37. M. Hernandez-Fuentes, C. Franklin, I. Rebollo-Mesa, J. Mollon, F. Delaney, E. Perucha, C. Stapleton, R. Borrows, C. Byrne, G. Cavalleri, B. Clarke, M. Clatworthy, J. Feehally, S. Fuggle, **S.A. Gagliano**, S. Griffin, A. Hammad, R. Higgins, A. Jardine, M. Keogan, T. Leach, I. MacPhee, Patrick B. Mark, J. Marsh, P. Maxwell, W. McKane, A. McLean, C. Newstead, T. Augustine, P. Phelan, S. Powis, P. Rowe, N. Sheerin, E. Solomon, H. Stephens, R. Thuraisingham, R. Trembath, P. Topham, R. Vaughan, S.H. Sacks, P. Conlon, G. Opelz, N. Soranzo, M.E. Weale, G.M. Lord, United Kingdom and Ireland Renal Transplant Consortium (UKIRTC), Wellcome Trust Case Control Consortium (WTCCC)-3 (2018) Long- and short-term outcomes in renal cadaveric allografts: a large recipient and donor genome-wide association study. *American Journal of Transplantation*. 18(6):1370-1379. PMID: 29392897
38. **S.A. Gagliano** (2017) It's all in the brain: a review of available functional genomic annotations. *Biological Psychiatry*. 81(6):478-483. PMID: 27788914
39. **S.A. Gagliano**, J. G. Pouget, J. Hardy, J. Knight, M.R. Barnes, M. Ryten, M.E. Weale (2016) Genomics implicates adaptive and innate immunity in Alzheimer's and Parkinson's. *Annals of Clinical and Translational Neurology*. 3(12):924-933. PMID: 28097204
40. G. Zai, […] **S.A. Gagliano** […], ~40 alphabetized middle authors […], J.L. Kennedy (2016) Rapporteur Summaries of Plenary, Symposia, and Oral sessions from the XXIIIrd World Congress of Psychiatric Genetics Meeting in Toronto, Canada, October 16-20, 2015. *Psychiatric Genetics*. 26(6):229-257. PMID: 27606929
41. **S.A. Gagliano**, C. Ptak, D.Y.F. Mak, M. Shamsi, G. Oh, J. Knight, P.C. Boutros, A. Petronis (2016) Allele-skewed DNA modification in the brain: relevance to schizophrenia GWAS. *American Journal of Human Genetics.* 98(5):956-962. PMID: 27087318
42. **S.A. Gagliano**, R. Ravji, M.R. Barnes, M.E. Weale, J. Knight (2015) Smoking gun or circumstantial evidence? comparison of statistical learning methods using functional annotations for prioritizing risk variants. *Scientific Reports*. 5:13373. PMID: 26300220
43. **S.A. Gagliano**, A.D. Paterson, M.E. Weale, J. Knight (2015) Assessing models for genetic prediction of complex traits: a comparison of visualization and quantitative methods. *BMC Genomics*. 16:405. PMID: 25997848
44. C.C. Zai, V. Gonçalves, A.K. Tiwari, **S.A. Gagliano**, G. Hosang, V. de Luca, S.A. Shaikh, N. King, Q. Chen, W. Xu, J. Strauss, G. Breen, C.M. Lewis, A.E. Farmer, P. McGuffin, J. Knight, J.B. Vincent, J.L. Kennedy (2014) A genome-wide association study of suicide severity scores in bipolar disorder. *Journal of Psychiatric Research*. 65:23-9. PMID: 25917933
45. **S.A. Gagliano**, A. K. Tiwari, N. Freeman, J.A. Lieberman, H.Y. Meltzer, J.L. Kennedy, J. Knight, D.J. Müller (2014) Protein kinase cAMP-dependent regulatory type II beta (*PRKAR2B*) gene variants in antipsychotic-induced weight gain. *Human Psychopharmacolgy*. 29(4):330-5. PMID: 24737441
46. **S.A. Gagliano**, M.R. Barnes, M.E. Weale, J. Knight (2014) A Bayesian method to incorporate hundreds of functional characteristics with association evidence to improve variant prioritization. *PLoS ONE*. 9(5):e98122. PMID: 24844982

Scientific commentaries (edited, but not peer-reviewed)

1. **S.A. Gagliano Taliun** (2022) Science communication with a French twist. *Nature*. https://doi.org/10.1038/d41586-022-01715-x. PMID: 35725825
2. **S.A. Gagliano Taliun** (2021) One scientist couple's five suggestions to solve the 'two body problem'. *Nature*. https://doi.org/10.1038/d41586-021-00917-z
3. **S.A. Gagliano Taliun** (2020) How to navigate academia as a female who is the first in her family with a PhD. *Academic Matters*. https://academicmatters.ca/how-to-navigate-academia-as-a-female-who-is-the-first-in-her-family-with-a-phd/
4. **S.A. Gagliano Taliun** (2019) Teaching at the university-level is not a hassle. *Nature*. 574(7777): 285. PMID: 31591538

Oral Presentations as an Invited Speaker

- Seminar at the Département de pharmacologie et physiologie, Université de Montréal. "La randomisation Mendélienne pour identifier les liens de causalité" (Montréal, Québec; September 14, 2023)
- Nephrotic Syndrome Study Network (NEPTUNE) Steering Committee meeting "Common genetically predicted splicing of *COL4A4* exon 27 is associated with hematuria" (Virtual meeting; May 9, 2023)
- VAST Seminar series "Genome-wide association studies to understand genetic factors contributing to complex traits including vascular dementia" (Virtual meeting; February 17, 2023)
- Statistical methods for genetics & genomics- research seminar and journal club, University of Toronto. "Leveraging dense genotype imputation for disease-associated rare variant discovery" (Virtual meeting; May 21, 2021)
- Association canadienne-française pour l'avancement des sciences (ACFAS) meeting. "L'imputation des génotypes permet la découverte de variations rares associées aux maladies" (Virtual meeting; May 7, 2021)
- Beyond Mendelian Genetics Symposium: Joint Genome Biology and Precision Medicine and Molecular Basis of Rare Diseases Section Symposium. "Leveraging dense genotype imputation for disease-associated rare variant discovery" (Virtual meeting; December 10, 2020)
- Invited Seminar, Centre for Addiction and Mental Health. "Using regulatory elements to prioritize genetic risk variants for neurodegeneration" (Toronto, Ontario; August 22, 2018)
- Invited Seminar, Michigan State University. "Prioritizing risk variants for neurodegeneration using functional genomics" (East Lansing, Michigan; June 15, 2018)
- Annual Canadian Human and Statistical Genetics meeting. "Understanding brain disorders through functional genomics" (Harrison Hot Springs, British Columbia; June 11, 2018)
- Genomics of Brain Disorders. "Neurodegeneration: Beyond the brain" (Hinxton, UK; April 24, 2018)

Oral Presentations

___ Trainee under my supervision

- American Society of Human Genetics (ASHG) Meeting. "Regional genetic correlations highlight relationships between neurodegenerative diseases and the immune system" (Los Angeles, California; October 28, 2022) Presented by: Frida Lona Durazo
- Whole Genome Sequencing of Psychiatric Disorders (WGSPD) meeting. "InPSYght case-control and leveraging controls from TOPMed" (Cambridge, Massachusetts; January 24, 2019)
- Trans-omics for Precision Medicine (TOPMed) meeting "TOPMed imputed UK Biobank genetic data reveals disease-associated rare loss of function variation" (Tysons, Virginia; Dec. 5, 2018)
- Program in Quantitative Genomics (PQG) Conference. "Dense imputation of the UK Biobank genetic data reveals disease-associated rare loss of function variation" (Boston, Massachusetts; November 1, 2018)

- Whole Genome Sequencing of Psychiatric Disorders (WGSPD) meeting. "InPSYght case-control and controls from other sources" (Bethesda, Maryland; January 10, 2018)
- University of Michigan Biostatistics Grand Rounds "PheWAS of >100 traits in the SardiNIA study: Insights" (Ann Arbor, Michigan; November 2, 2017)
- Whole Genome Sequencing of Psychiatric Disorders (WGSPD) meeting. "Joint analysis of sequenced InPSYght African American schizophrenia and bipolar cases and controls with TOPMed external controls" (Cambridge, Massachusetts; June 5, 2017)
- Center for Biomedicine, European Academy of Bolzano (EURAC). "PheWAS of >100 traits in SardiNIA" (Bolzano, Italy; Nov 22, 2016)
- European Mathematical Genetics Meeting (EMGM). "*In silico* identification of genetic risk variants for Parkinson's disease" (Newcastle, UK; May 12, 2016)
- World Congress of Psychiatric Genetics (WCPG) 2015 annual meeting. "*In silico* prioritization of genetic risk variants for psychiatric disorders using functional genomic information" (Toronto, Ontario; October 20, 2015)
- Harvey Stancer Research Day 2014. "Assessing models for genetic prediction of complex traits: visualization and quantitative methods" (Toronto, Ontario; June 19, 2014)
- Statistical Society of Canada annual meeting. "Investigation of Predictive Accuracy Measures for Genetic Models" (Toronto, Ontario; May 26, 2014)
- Toronto Bioinformatics User Group. "A method to incorporate hundreds of functional characteristics with association evidence to improve SNP prioritization" (Toronto, Ontario; November 27, 2013) https://www.youtube.com/watch?v=xpDYFfAfPZE
- Harvey Stancer Research Day 2013. "Protein kinase cAMP-dependent regulatory type II beta (PRKAR2B) gene variants in antipsychotic-induced weight gain" (Toronto, Ontario; June 13, 2013)
- Neuroscience Research Exchange Day. "Distribution of epiSNPs in sub-threshold variants from genome-wide association studies for psychiatric disorders" (Toronto, Ontario; April 12, 2013)
- Genetic Analysis Workshop 18 Conference. "GAW18: Gene-based tests" (Stevenson, Washington; October 16, 2012); Co-presenters: Heather Cordell and Indranil Mukhopadhyay

Poster presentations as first author or senior author

___ Trainee under my supervision

- F. Lonza-Durazo, K. Omachi, D. Fermin, F. Eichinger, J.P. Troost, J.H. Miner, A.D. Paterson, M. Barua, **S.A. Gagliano Taliun**. "Skipping of COL4A4 exon 27 is associated with hematuria" American Society of Human Genetics (ASHG) Meeting (Washington DC, November 2, 2023)
- W. Belbellaj, **S.A. Gagliano Taliun**. "The Impact of Iron Levels in the Blood on Neurodegenerative and Cardiovascular Diseases" World Congress of Psychiatric Genetics (Montréal; October 12, 2023)
- M. Shoaib, Q. Ye, M. Boehnke, C. Burant, S. Soleimanpour, **S.A. Gagliano Taliun**. "Evaluation of polygenic risk scores to differentiate between type 1 and type 2 diabetes" American Society of Human Genetics (ASHG) Meeting. (Los Angeles, California; October 26, 2022)
- Q. Ye, **S.A. Gagliano Taliun**. "Sex-specific risk scores for coronary artery disease using machine learning models" American Society of Human Genetics (ASHG) Meeting. (Los Angeles, California; October 26 2022)
- **S.A. Gagliano Taliun**, Y. Li, D. Ray, P. Yajnik, NIMH InPSYght Consortium and NHLBI TOPMed Program, S. Lee, L.J. Scott, S.A. McCarroll, C.N. Pato, G.R. Abecasis, M. Boehnke, H.M. Kang. "High-specificity variant filter enables joint analysis of whole genome sequence data from multiple studies and sequencing centres" American Society of Human Genetics (ASHG) Meeting. (Houston, Texas; October 17, 2019)
- **S.A. Gagliano**, W. Zhou, J.B. Nielson, J. LeFaive, S. Das, D. Taliun, R. Dey, G.R. Abecasis. "Analysis of densely imputed UK Biobank genetic data reveals disease-associated rare loss of function variation" American Society of Human Genetics (ASHG) Meeting. (San Diego, California; October

17, 2018) *Top 10% of submissions.*

- **S.A. Gagliano**, W. Zhou, J.B. Nielson, J. LeFaive, S. Das, D.Taliun, R. Dey, G.R. Abecasis. "Analysis of densely imputed UK Biobank genetic data reveals disease-associated rare loss of function variation previously only implicated in family studies" UK Biobank Conference Early-Career Researcher of the Year (London, UK; June 21, 2018) *Top 20% of submissions.*
- **S.A. Gagliano**, S. Sengupta, C. Sidore, A. Maschio, F. Cucca, D. Schlessinger, G.R. Abecasis. "Pinpointing GWAS signals: Indels vs. SNPs" American Society of Human Genetics (ASHG) Meeting. (Orlando, Florida; October 19, 2017)
- **S.A. Gagliano**, J.G. Pouget, J. Hardy, J. Knight, M.R. Barnes, M. Ryten, M.E. Weale. "Genetic variability in both the adaptive and innate immune systems contribute to Alzheimer's and Parkinson's disease risk" International Genetic Epidemiology Society (IGES) Meeting (Toronto, Ontario; October 25, 2016)
- **S.A. Gagliano**, C. Ptak, D.Y.F. Mak, M. Shamsi, G. Oh, J. Knight, P.C. Boutros, A. Petronis. "Allele-specific DNA modification: relevance to GWAS of complex traits" World Congress of Psychiatric Genetics (WCPG). (Toronto, Ontario; October 17, 2015)
- **S.A. Gagliano**, A.D. Paterson, M.E. Weale, J. Knight. "Assessing models for genetic prediction of complex traits: a comparison of visualization and quantitative methods" American Society of Human Genetics (ASHG) Meeting. (Baltimore, Maryland; October 7, 2015)
- **S.A. Gagliano**, R. Ravji, M.R. Barnes, M.E. Weale, J. Knight. "Comparing statistical learning methods for genetic variant prioritization" International Genetic Epidemiology Society (IGES) Meeting. (Baltimore, Maryland; October 4, 2015)
- **S.A. Gagliano**, R. Ravji, M.R. Barnes, M.E. Weale, J. Knight. "Comparison of machine-learning methodologies to prioritize genetic variants based on functional data" American Society of Human Genetics (ASHG) Meeting (San Diego, California; October 21, 2014)
- **S.A. Gagliano**, M.R. Barnes, M.E. Weale, J. Knight. "A Bayesian method to incorporate hundreds of functional characteristics with association evidence to improve variant prioritization" Institute of Medical Science Scientific Day (Toronto, Ontario; May 22, 2014)
- **S.A. Gagliano**, M.R. Barnes, M.E. Weale, J. Knight. "Enrichment of functional information (543 annotation tracks) in GWAS hits" American Society of Human Genetics (ASHG) Meeting (Boston, Massachusetts; October 24, 2013)
- **S.A. Gagliano**, D.Y.F. Mak, C. Ptak, P.C. Boutros, A. Petronis, J. Knight. "Distribution of epiSNPs in Sub-threshold Variants from Genome-wide Association Studies for Psychiatric Disorders" World Congress of Psychiatric Genetics (Boston, Massachusetts; October 18, 2013)
- **S.A. Gagliano**, A.K. Tiwari, N. Freeman, J.A. Lieberman, H.Y. Meltzer, D.J. Mueller, J.L. Kennedy, J. Knight "Protein kinase cAMP-dependent regulatory type II beta (PRKAR2B) gene variants in antipsychotic-induced weight gain" Canadian College of Neuropsychopharmacology annual meeting (Toronto, Ontario; May 30, 2013)
- **S.A. Gagliano**, D.Y.F. Mak, C. Ptak, P.C. Boutros, A. Petronis, J. Knight. "Distribution of epiSNPs in sub-threshold variants from genome-wide association studies for psychiatric disorders" Institute of Medical Science Scientific Day (Toronto, Ontario; May 28, 2013)
- **S.A. Gagliano**, K. Benke, J. Knight. Genetic Analysis Workshop 18 Conference, "Functional Annotation of Rare Variants in GAW18 Data" (Stevenson, Washington; October 16, 2012)

Teaching and Mentoring

Graduate level

- **Co-instructor,** NSC6040 : Neuro-omics *Winter 2023*
  Prepared and taught 3 3h classes on GWAS and complex traits, including polygenic risk scores, gene-by-environment interactions and Mendelian randomization, for this graduate-level course. Prepared and graded a homework assignment.
- **Co-instructor**, CGE6004: Population genetics and epidemiology, *Winter 2022, 2023*
  Université de Montréal
  Prepared and taught a 3h class on GWAS and complex traits for this graduate-level course of ~10 students.

- **Guest lecturer**, MSO6018: Introduction to Genetic Epidemiology, Université de Montréal *Winter 2021, 2022, 2023*
  Prepared and taught a 3h class on Mendelian Randomization for this graduate-level course of ~15 students. Taught two 3h classes on this topic in 2022, which included a take-home practical activity. In 2023, in addition to the 2022 tasks, I also co-taught an in-class practical activity.
- **Co-instructor**, Human Genetics 542: Molecular Basis of Human Genetic Disease, University of Michigan *Winter 2019, 2020*
  Prepared and delivered four classes on complex traits and gene-environment interactions for this graduate-level course of ~30 students. Created and graded assignments and exam.
- **Guest lecturer**, Epidemiology 516: Genomics in Epidemiology, University of Michigan *Spring 2018, 2019*
  Co-prepared and co-taught a lecture and a hands-on practical on Biobanks and Electronic Health Records in Genetics for this graduate-level course of ~24 students.
- **Co-instructor**, Human Genetics 544: Basic Concepts in Population and Statistical Genetics, University of Michigan *Fall 2017*
  Prepared and led four 1.5h white-board-format lectures and two in-class discussions for ~20 graduate students. Met regularly with the co-instructors for planning and grading.
- **Practical Sessions Assistant** at a five-day Advanced GWAS Course *June 2013*
  Tested tutorials provided by the lecturers, and aided students with computer issues.
- **Co-leader hands-on tutorial series** in statistical genetics at CAMH *2013-15*
  Topics included methods for genome-wide association and sequencing studies.

<u>Undergraduate level</u>

- **Faculty mentor**, Genomics, Big Data Summer Institute, University of Michigan *Summer 2019*
  Prepared Mendelian randomization (MR) practical for ~15 students and supervised four of the students on a project using MR on real data from large-scale cohorts
- **Guest lecturer**, Biostatistics 666: Statistical Methods in Human Genetics, University of Michigan *Fall 2016, 2017*
  Prepared and gave Functional Genomics lecture for this graduate-level course of ~30 students.
- **Mentor** for high school summer student *June – August 2015*
  Supervised the student through the completion of a genome-wide association study

<u>Secondary school level</u>

- **Mentor** for students for the Ontario On-Line Research Co-op program *Winter 2015, Fall 2016, Winter 2017, Fall 2017, Winter 2019, Fall 2019*
  Created/graded assignments, met regularly with student/group of students, assisted with writing a final research paper, and provided feedback to the co-op teacher.
- **DNA Day Ambassador**, Skyline High School, Ann Arbor, Michigan *April 2018*
  Co-led a lesson on genetics and inheritance for Grade 9 students.

<u>Co-mentoring of undergraduate/graduate students</u>

- **Honorary Senior Research Associate**, UCL Institute of Neurology, Neurodegenerative Diseases *Nov 2018 – Oct 2021*
  Affiliation for my role as mentor for Regina H. Reynolds (supervisor: Mina Ryten)
- **Teaching Assistant**, HMB265H- General and Human Genetics, University of Toronto *May – June 2015*
  Prepared and led weekly tutorials, graded, helped with exam invigilation.
- **Co-mentor** (with one of my PhD supervisors) for an undergraduate research student from Vellore Institute of Technology, India *Dec 2014 – April 2015*
- **Co-mentor** (with one of my PhD supervisors) for an undergraduate exchange student from University College London, UK *Summer 2014*
  Supervised methods comparison of statistical learning models for genetic risk prediction.

Supervision/Mentorship

Trainee Supervision, Université de Montréal

Postdoctoral Mentor, Université de Montréal

- Frida Lona Durazo (Bourses de formation postdoctorale, FRQS- Fall 2023-Summer 2025) *November 2021 –*
- Muhammad Shoaib *July 2021 – November 2022*

Bioinformatics MSc or PhD, Research-based, Université de Montréal

- Linda (Yuan) Wang - MSc *September 2023*
- Justin Bellavance - MSc *September 2023*
- Wiame Belbellaj - MSc (Complément de bourse d'exemption, Bourse découverte des Études supérieurs de recrutement à la maîtrise) *May 2022 –*
- Qiang Ye **–** PhD (Bourse de Mérite Scholarship- 2021-2023) *January 2021 – August 2023*

Bioinformatics Masters Research Internship Supervisor, Université de Montréal

- Oumaima Hamza *May 2021 – October 2021*
- Hester Faou *January 2021 – June 2021*

Undergraduate Research, Université de Montréal

- Rime Diany *June 2023 – August 2023*
- Nikita Neale *June 2023 – August 2023*
- Melody Zuo (Bourse de stagiaires d'été PREMIER Scholarship-2022) *May 2022 – August 2022*
- Yangfan Zhao *June 2021 – August 2022*

CÉGEP interns

- Rayen Amrani *April 2023 – May 2023*

Service on Graduate Student Committees

- Cécile Poulain (PhD committee president) *2022 – present*

Graduate student Mentor ("Parrain"), Université de Montréal

- Rose Laflamme (MSc) *2022 – 2024*
- Justin Pelletier (MSc) *2020 – 2022*

Examination committee jury member or president, Université de Montréal

- Mame Seynabou Diop (Predoc examination committee president) *November 2023*
- Isabelle Hébert-Milette (PhD examination committee president) *September 2023*
- Xavier Navarri (Pre-doctoral examination commitee member) *September 2023*
- Yann Ilboudo (PhD examination committee president) *September 2023*
- Amélie Jeuken (MSc examination committee president) August 2023
- Saiyet de la Caridad Baez Llovio (MSc committee member) *May 2023*
- Sayeh Kazem (Pre-doctoral examination committee member) *December 2022*
- Marjorie Labrecque (MSc examination committee examiner) *July 2022*
- Catherine Proulx (MSc examination committee president) *June 2022*
- Justin Pelletier (MSc examination committee president) *June 2022*
- Fatima Mostefai (Pre-doctoral examination committee president) *August 2021*

Examination committee jury member or president, other universities

- Leticia Camargo Tavares, Monash University (PhD examination committee jury) October 2023
- Gwenaëlle Lemoine, Université Laval (PhD examination committee jury) *December 2021*

Certifications

- Training for Diversity & Inclusive Teaching (University of Michigan) *Winter 2018*
- THE500H: Teaching in Higher Education (University of Toronto) *Fall 2015*
- Scientific Computing & High Performance Computing (SciNet) *September 2015*
- Advanced University Teaching Preparation (University of Toronto) *May 2014*

Professional Service

- **Co-organizer, Neuroscience Department Research Day** *November 2023*

- Poster presentation **moderator at the 25th Montreal Heart Institute Research Day** *June 2023*
- **Member, Equity, Diversity and Inclusion (EDI) Planning committee**, Research Centre, Montreal Heart Institute *2021 – 2022*
- **Associate Member of the College of Reviewers**, CIHR *February 2023 – present*
- **2023 Vascular Training (VAST) Conference organizing committee member**, Montréal Conference held from May 17 – 18, 2023
- **Co-moderator for ASHG poster talks session** *October 25, 2022*
- **Platform Advisory Committee member**, VCI Health Research Training (VAST) Platform *July 2022 – July 2024*
- Oral Presentation **judge at the 24th Montreal Heart Institute Research Day** *June 2022*
- IVADO MSc Excellence Scholarships **Reviewer** *March 2022*
- **ASHG Program Committee member** *January 2022 – December 2024*
- **Co-moderator for ASHG platform session** "Novel associations take novel statistical methods" *October 19, 2021*
- CIHR "Fellowships - Post-PhD" **Awards Committee ECR member** *July 2021 – July 2022*
- Poster **judge at the 23rd Montreal Heart Institute Research Day** *June 2021*
- **Co-Moderator for ASHG platform session** "A Deep Dive into Deep Learning" *October 17, 2019*
- **ASHG abstract reviewer**, Statistical Genetics and Genetic Epidemiology *2019*
- **Co-Moderator for ASHG platform session** "Biases of Polygenic Risk Scores" *October 20, 2018*
- **Writer, ASHG newsletter**, *The Nascent Transcript* *2017 – 2018*
- **Proposer/Moderator for ASHG invited session** "Using controls from external studies: issues, methods & successes" *October 20, 2017*
- **IGES Webmaster** (Communications Committee) *July 2016 – present*
  Post announcements to the website, updated to new website
- **IGES Young Investigators Committee member** *2015 – 2018*
  Co-organized Young Investigators Mixer at the 2016 Meeting in Toronto
- **ASHG Genetics Education Outreach Network member** *January 2015 – present*
- Poster **co-judge at the Summer Undergraduate Research Day** *August 2014*
  for the Institute of Medical Science, University of Toronto
- **DNA Day Essay Contest Judge** for ASHG *2014 – 2017*
- **Reviewer** for *Annals of Oncology, Annals of Medicine, Annals of Translational Medicine, BMC Psychiatry*, *Brain*, *Brain and Behavior*, *Canadian Journal of Cardiology*, *Circulation*, *Current Drug Targets, European Journal of Epidemiology, Frontiers in Genetics, Frontiers in Immunology, Frontiers in Neuroscience, Genes, Genomics, GigaScience, International Journal of Epidemiology, International Journal of Psychiatry in Clinical Practice, Journal of Neuroscience, Molecular Biology Reports, Molecular Genetics and Genomics, Nature, Nature Genetics, Nature Reviews Methods Primers, Neurobiology of Aging, PeerJ, PLoS Computational Biology (associate editor), PLoS Genetics, PLoS ONE, Psychiatric Genetics, Psychiatry Research*, *Science Advances*, *Scientific Reports, Stroke*