October 2021

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*
  Departments of Medicine and 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

- 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) *2020-2024*
  Project: Le développement des modèles prédictifs qui sont spécifiques au sexe pour la médecine personnalisée en santé cardiovasculaire
- **Precision Health Scholars Award**, University of Michigan *2019–20*
- **Stellar Abstract Award** Program in Quantitative Genomics (PQG), Harvard *November 2018*
- **Postdoctoral Fellowship Award**, Stanley Center for Psychiatric Research, Broad *2017–18*
- **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*
- **University of Toronto Fellowship – MSc** *September 2012*

Publications

* Equal contribution † Co-senior author

Peer-reviewed

1. **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
2. 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*. PMID: 34309761
3. 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
4. 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
5. 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
6. J. 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
7. 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
8. 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
9. **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
10. 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
11. 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
12. 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

13. 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
14. 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
15. 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
16. **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
17. 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
18. **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
19. 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
20. 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
21. 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
22. **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
23. **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
24. 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
25. **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
26. **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

27. **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
28. 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
29. **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
30. **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

Under-review

1. 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. Whole-genome sequencing study of blood pressure traits in the Trans-Omics for Precision Medicine and Centers for Common Disease Genomics programs.
2. K. D'Sa, R.H. Reynolds, S. Guelfi, D. Zhang, S.G. Ruiz, International Parkinson's Disease Genomics Consortium (IPDGC), System Genomics of Parkinson's Disease (SGPD), J.Hardy, **S.A. Gagliano Taliun**, K.S. Small, M. Ryten, J. Botía. ERASE: Extended Randomization for assessment of annotation enrichment in ASE datasets.

Scientific commentaries (edited, but not peer-reviewed)

1. **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
2. **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/
3. **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

- 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

- 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

- **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

- **Guest lecturer**, MSO 6018: Introduction to Genetic Epidemiology *Winter 2021*
  Université de Montréal
  Prepared and taught a 3h class on Mendelian Randomization for this graduate-level course of ~15 students.
- **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 *Fall 2017*

Statistical Genetics, University of Michigan
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.

Undergraduate level

- **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, *Fall 2016, 2017*
  University of Michigan
  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

Secondary school level

- **Mentor** for students *Winter 2015, Fall 2016, Winter 2017, Fall 2017, Winter 2019, Fall 2019*
  for the Ontario On-Line Research Co-op program
  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.

Co-mentoring of undergraduate/graduate students

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

Bioinformatics Masters Research Internship Supervisor, Université de Montréal

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

Doctoral Supervisor, Université de Montréal

- Qiang Ye (Bourse de Mérite Scholarship- 2021-2023) January 2021 –

Undergraduate Research, Université de Montréal

- Yangfan Zhao June 2021 – August 2021

Service on Graduate Student Committees

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

- Justin Pelletier (Masters) 2020 – 2021

Examination committee jury member or president, Université de Montréal

- Cécile Poulain (PhD examination committee president) 2021
- Mame Seynabou Diop (Masters examination committee jury member) 2021
- Fatima Mostefai (Pre-doctoral examination committee president) 2021

Examination committee jury member or president, other universities

- Gwenaëlle Lemoine, Université Laval (PhD examination committee jury) 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

- **ASHG Program Committee member** *Jan 2022 – Dec 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* *2017–18*
- **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 *Brain*, *Annals of Oncology, Annals of Medicine, BMC Psychiatry*, *Circulation*, *Current Drug Targets, Frontiers in Immunology, Genomics, GigaScience, International Journal of Epidemiology, International Journal of Psychiatry in Clinical Practice, Journal of Neuroscience, Molecular Biology Reports, Nature Reviews Methods Primers, Neurobiology of Aging, PeerJ, PLoS Genetics, PLoS ONE, Psychiatric Genetics, Psychiatry Research*, *Scientific Reports*