Canadian Statistical Sciences Institute
Institut canadien des sciences statistiques

Simon Fraser University
8888 University Drive
Burnaby BC Canada V5A 1S6

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CANSSI QUEBEC RECRUITMENT SCHOLARSHIP

List of Potential Supervisors (2023)

Funding amounts are in Canadian dollars.

1. **Yang Lu** (yang.lu@concordia.ca)
   Assistant Professor, Department of Mathematics and Statistics, Concordia University, 1544 Blvd de Maisonneuve O. , Montreal, Quebec
   Research interests: My research focuses on developing statistical methodologies motivated by insurance and finance applications (auto ratemaking, mortality forecasting, natural disaster forecasting, credit risk, derivative pricing). The methodologies I develop concern mainly time series data or multivariate, non Gaussian data (counts, truncated data, dichotomous data, etc).
   Standard support (funding): $8,000 per annum or $4,000 per annum in the case of joint supervision
2. **Russell Steele** (russell.steele@mcgill.ca)
   Associate Professor of Mathematics and Statistics, Associate Dean of Graduate Studies (to June 2026), 805 Rue Sherbrooke O., Montreal, Quebec H3A 0B9
   Research interests: Broadly speaking, my research focuses on development of new methodology for problems which require assumptions about latent model structure. Currently, I am most focused on problems in (1) longitudinal and dynamic causal inference and (2) assessing sensitivity to violations of assumptions in complex models such as neural networks, variational inference, and subjective Bayesian models.
   Standard support (funding): Our department currently requires offers that pay tuition + fees for each student and a living stipend of $1,400 per month (although that may be increasing soon). The supervisor contribution is usually $12,000 for PhD students.
3. **Abbas Khalili** (abbas.khalili@mcgill.ca)
   Associate Professor of Statistics, Department of Mathematics and Statistics, McGill University, Montreal, Quebec

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CANSSI is hosted at Simon Fraser University. L'INCASS est hébergé à l'Université Simon Fraser.

Research interests: High-dimensional and big-data problems; latent variable models: theory and applications; time series and change point problems; sparse network analysis; neural networks and their applications in semi-parametric mixture-of-experts; post-selection inference
Standard support (funding): In general, the total support in our department for a PhD is between $35,000 and $40,000 per year. Supervisor contribution is about $12,000 per year.

4. **Alexandra Schmidt** (alexandra.schmidt@mcgill.ca)
   Professor of Biostatistics, Department of Epidemiology, Biostatistics and Occupational Health, McGill University. 2001 McGill College Avenue, Montreal, Quebec H3A 1G1
   Research interests: Broadly speaking, I develop statistical methodology for the analysis of spatio-temporal processes. The challenge is to capture the underlying covariance structure among observations. I have been developing flexible models for the analysis of the counts of multiple diseases observations. These models allow to account for directional effects in the spatial covariance structure of the underlying spatio-temporal process. I am also developing models for multivariate processes that vary continuously over a region and present some outlying observations (e.g., max temperature and max PM2.5). The proposed models are able to pinpoint regions of the space and instants in time where we have outlying observations. Inference is performed under the Bayesian paradigm and one of the challenges is to develop efficient algorithms to approximate the resultant posterior distribution. Disease mapping; dynamic linear models; Gaussian processes; spatial-temporal processes.
   Standard support (funding): Canadian students receive a minimum stipend of $27,215/year; and international students receive a minimum stipend of $27,725/year. This support is guaranteed for four years.

5. **Johanna G. Neslehova** (johanna.neslehova@mcgill.ca)
   Full Professor, Department of Mathematics and Statistics, McGill University, 805 rue Sherbrooke Ouest, Montréal, Quebec H3A 0B9
   Research interests: Dependence modeling, extreme-value theory, multivariate analysis, causal inference, and spatio-temporal models with applications in climatology, environmental sciences, and risk management. Potential projects include causal inference for and of climate extremes, and spatio-temporal models for extremes in the pre-asymptotic regime.
   Standard support (funding): $26,000 per year

6. **Shirin Golchi** (shirin.golchi@mcgill.ca)
   Assistant Professor, Biostatistics, McGill University, 2001 McGill College, Suite 1200, Montreal, Quebec, Canada H3A 1G1

Research interests: Potential project topics are broadly defined on innovative Bayesian design, analysis and computational approaches for clinical trials including adaptive designs. Specific problems include estimating heterogenous treatment effects and patient subgroup identification covering a range of applications from early phase dose finding trials to patient subpopulation refinement for available treatments. Addressing these problems involves development of novel methods or tailoring of existing methodology. Common methodology that the trainees acquire knowledge and skills on, and further contribute to, include Bayesian hierarchical models, Bayesian model averaging, Gaussian processes, Markov chain Monte Carlo methods, and Bayesian sequential design. Keywords: Bayesian adaptive clinical trials, Bayesian computation, Bayesian inference in clinical trials, effect heterogeneity, sequential experiments, Gaussian process.
Standard support (funding): The minimum required international PhD stipend to be provided by the supervisor: $27,725; the department pays the differential international tuition fee.

7. **Louigi Addario-Berry** (louigi.addario@mcgill.ca)
Professor, Department of Mathematics and Statistics, McGill University, Montreal, Quebec
Research interests: My research spans a range of topics, but includes questions in the area of combinatorial statistics sometimes referred to as network archaeology or rumour spreading. Here is a paradigmatic question from this rapidly developing field. Suppose that at time n we observe a set S of sites in a network G, which have been exposed to a randomly spreading computer virus. For what sorts of network models, propagation dynamics, and times, can we determine a likely candidate for the viral source S? Two major variants of this question have been studied in the literature. In rumour spreading, there is a fixed underlying graph on which the virus (or rumour) propagates. In network archaeology, growth is intrinsic rather than on an existing network. Equivalently, it is the network as a whole which grows: one observes a snapshot of the network at time t, and aims to infer a likely candidate for the time-zero network (this is called the root reconstruction problem).
Standard support (funding): I ensure all my doctoral trainees are funded at a minimum level of $25,000/year for a five-year period. This funding comes from a variety of sources, including (1) departmental funds; (2) teaching assistantships; (3) my own research grants (NSERC, CRC, FRQNT); (4) external awards. It is departmental policy that students who receive external scholarships receive financial benefit from those scholarships (they are not simply used to reduce the department's financial commitment to the student).

8. **Amin Emad** (amin.emad@mcgill.ca)
   McGill University, 845 Sherbrooke St W, Montreal, Quebec H3A 0G4
   Research interests: Research in my lab is focused on developing novel computational methods based on machine learning, network representation learning, and statistical methods to address various biomedical problems, including cancer precision medicine, gene regulation, protein interactions, etc. Statistical inference; deep learning; machine learning; bioinformatics; network biology; precision medicine
   Standard support (funding): $25,000/year

9. **Qihuang Zhang** (qihuang.zhang@mcgill.ca)
   Department of Epidemiology, Biostatistics, and Occupational Health, McGill University, Montreal, Quebec
   Research interests: Measurement error, statistical inference, machine learning, genomics, Bayesian framework, data integration, latent variable model.
   Topic: Statistical Inference for AI-Generated Genomic Data
   Artificial Intelligence (AI) has revolutionized genomics, yielding vast amounts of data ready for statistical interpretation. Notably, machine learning algorithms now generate intricate cell-type compositional data, revealing cell-type ratios within tissues. Yet, a challenge arises: machine-derived data frequently contain measurement errors. Overlooking these can lead to misleading conclusions. Our mission is two-fold: (1) Address Measurement Error: Machine-generated data, while groundbreaking, is often subject to inaccuracies. We aim to delve deep into measurement error of AI-generated data, particularly those stemming from machine learning. We're exploring methods to identify, examine, and adjust for these errors, ensuring solid statistical inferences. Emphasis will be placed on understanding the intricacies of compositional data arising from the genomic data and the unique errors they present. (2) Data Integration: Data of varied quality emerges from multiple sources or different processing methods. Our goal is to seamlessly amalgamate these diverse datasets. Through the use of a Bayesian framework with a logistic-transformed Gaussian process, we hope to conduct an inference on the association between cell-type compositions and related covariates while the disparity of data quality of different sources is considered.
   Standard support (funding): The student will receive a base funding of $27,500 per year. Additionally, the department offers Teaching Assistant (TA) and Research Assistant (RA) opportunities.

10. **Heungsun Hwang** (heungsun.hwang@mcgill.ca)
    Professor, Department of Psychology, McGill University, 2001 McGill College Avenue, Montreal, Quebec, Canada H3A 1G1

Research interests: As a quantitative psychologist, my research is generally devoted to the development and application of statistical methods for the measurement and analysis of human characteristics, aspects, and processes. I am interested in a wide array of statistical methods and computational algorithms in multivariate statistics, structural equation modelling, machine learning, functional data analysis, and genetic and neuroimaging data analysis. A few potential projects include (1) the development of a general statistical approach for examining associations among genetic, brain, and behavioural/cognitive variables in a biologically meaningful and confirmatory manner, and (2) the integration of deep learning into structural equation modelling to create an interpretable, theory-based artificial neural network with various constructs in the social, behavioural, and health sciences (e.g., self-esteem, depression, socioeconomic status, etc.).
Standard support (funding): $22,000 for each PhD student per year

11. **Simone Brugiapaglia** (simone.brugiapaglia@concordia.ca)
Assistant Professor, Department of Mathematics and Statistics, Concordia University, J.W. McConnell Building, 1400 De Maisonneuve Blvd. W., Montréal, Quebec, Canada H3G 1M8
Research interests: I have research projects for PhD students in the area of the mathematical and statistical foundations of data science and machine learning. Specifically, I am interested in the foundations of deep learning. Recent advances in deep neural networks have led to countless technological breakthroughs, with applications ranging from computer vision (e.g., self-driving cars) to natural language processing (e.g., ChatGPT). However, the mathematical and statistical foundations of deep learning are still in their infancy. There are many open problems in the field, such us understanding the true generalization limits of these algorithms, enhancing their interpretability, characterizing their approximation properties, studying their behaviour in the data-scarce regime, and improving their robustness and stability.
Potential PhD projects in this area include:
(i) the study of fundamental limits of deep neural networks in the context of generalization outside the training set and in terms of robustness and stability (including stability to adversarial attacks);
(ii) the development of sampling complexity bounds aimed at characterizing how much data is sufficient to successfully perform a given task;
(iii) the uncertainty quantification of neural network predictions both in the classification and the regression setting;
(iv) the study of optimization landscapes and dynamics of training algorithms such as stochastic gradient descent or Adam;
(v) the development of new techniques to improve interpretability, such as the

identification of the most relevant features driving deep neural networks' decisions.
Along with new theoretical developments, projects will include the application of newly developed mathematical and statistical tools to synthetic and real-world datasets. A specific project will be tailored on the PhD student's interests, background, and strengths. Research projects will include both a theoretical and a computational component, so I am looking for candidates with both a strong theoretical background and very good programming skills. Besides projects in the area of deep learning, projects in the areas of compressed sensing and randomized linear algebra are also available.
Standard support (funding): Standard support over four years: TA = $57,000 (department), RA = $24,000 (supervisor)

12. **Jackie Mari Vogel** (jackie.vogel@mcgill.ca)
Associate Professor of Biology, Member Centre for Research in Biological Structures; Director, Integrated Quantitative Biology Initiative; Faculty Advisor, CS-BIOL joint B.Sc. program, McGill University, Department of Biology, Bellini Pavilion Room 269, 3649 Sir William Osler, Montreal, Quebec H3G 0B1
Research interests: We study the spatial and temporal regulation and mechanisms of cell division machinery. My research program uses an interdisciplinary approach based in cell biology, computational biology and biophysics to investigate the processes of spindle assembly and spindle positioning in cells with an asymmetric morphology. We combine high speed super resolution microscopy, custom image analysis methods and modelling to study these processes in living cells as dynamic systems, evoking feedback, instability and symmetry breaking. Projects in the lab focus on discovering the control systems that ensure accurate segregation of chromosomes during cell division and the molecular origins of errors that cause cell death. A new focus is to understand how the material properties of biomolecular condensates contribute to the *a priori* functional identity of specific microtubules that sense cellular geometry during spindle positioning.
Standard support (funding): $21,525

13. **Arthur Charpentier** (charpentier.arthur@uqam.ca)
Professeur, Université du Québec à Montréal (UQAM), Département de mathématiques, UQAM, 201, avenue du Président-Kennedy, Montréal, Québec H2X 3Y7
Research interests: algorithmic fairness; discrimination; predictive modeling; actuarial science
Standard support (funding): $30,000 CAN par an (probablement un peu plus

compte tenu de l'inflation récente), l'université donne une bourse liée aux frais d'inscriptions (exonération de frais majorés pour les étudiants étrangers)

14. **Alexandre Bureau** (alexandre.bureau@fmed.ulaval.ca)
    Centre de recherche CERVO et Département de médecine sociale et preventive, Université Laval, Pavillon Ferdinand-Vandry, local 2457, Québec (Québec) G1V 0A6
    Research interests: Analyse de données unicellulaires de contacts en 3 dimensions de la chromatine du génome. Implique l'analyse de structures de données creuses et le développement d'approches calculatoires pour des données massives. Application à l'annotation de variants génétiques rares non-codants identifiés par séquençage génomique.
    Standard support (funding): 21 000 $/année (cumulatif du directeur et de la faculté)

15. **Jean-François Renaud** (renaud.jf@uqam.ca)
    Département de mathématiques, Université du Québec à Montréal (UQAM), 201 avenue Président-Kennedy, Montréal (Québec) H2X 3Y7
    Research interests: Projets potentiels à la frontière entre les probabilités appliquées et les mathématiques actuarielles, plus particulièrement l'analyse de problèmes d'optimisation stochastique comme, par exemple, la maximisation des dividends
    Standard support (funding): Minimum de 27,000$/an, incluant la bourse CANSSI, répartis comme suit: l'UQAM offre 5,000$/an, le département attribue des charges d'auxiliaires d'enseignement (environ 5,000$/an) et je fournirai 10,000$/an de mes subventions

16. **Marzia Angela Cremona** (marzia.cremona@fsa.ulaval.ca)
    Département d'Opérations et Systèmes de Décision, Pavillon Palasis-Prince, local 2449, 2325, rue de la Terrasse, Québec (Québec) G1V 0A6
    Research interests/Intérêts de recherche: statistique appliquée, apprentissage statistique/automatique, analyse de données fonctionnelles, sélection de variables, découverte de motifs fonctionnels, données omiques, données complexes, bio-informatique, biologie computationnelle.
    Projets potentiels: analyse de données fonctionnelles (méthodologie et application), apprentissage statistique/automatique, analyse de données d'hypoglycémie chez les personnes avec diabète de type 1.
    Standard support (funding): Au moins 20 000 $ par année, au total (bourses fournies par le professeur et bourses de la faculté)

17. **Mathieu Boudreault** (boudreault.mathieu@uqam.ca)
    Professeur, Département de mathématiques, Université du Québec à Montréal

Research interests: Modélisation des impacts financiers des changements climatiques en actuariat (assurance, réassurance et régimes de retraite). Modélisation spatiale et temporelle des inondations, ouragans, feux de forêts et autres risques climatiques avec des modèles statistiques et climatiques. Modélisation des impacts des changements climatiques sur différentes classes d'actifs financiers. Apprentissage profond. Risques physiques et risques de transition. Programmation en R et Python avec GIS. Partenariats de recherche avec le secteur privé et public.
Standard support (funding): Minimum 100,000$ pour la durée du doctorat

18. **Janie Coulombe** (janie.coulombe@umontreal.ca)
Université de Montréal, Department of Mathematics and Statistics, Pavillon André-Aisenstadt (AA-5190) 2920, chemin de la Tour, Montréal (Québec) H3T 1J4
This faculty member has already identified a potential candidate.
Research interests: Drs. Janie Coulombe and Philippe Gagnon are Assistant Professors in the Department of Mathematics and Statistics at Université de Montréal. Dr. Coulombe's research is in causal inference and focuses on irregular observation times and missing data problems. Dr. Gagnon's research is in computational statistics and inference under the Bayesian paradigm. Both researchers have separately been published in top-tier statistics journals such as *Biometrics*, *Annals of Applied Statistics*, *Bayesian Analysis*, and *Journal of Computational and Graphical Statistics*. They aim to combine their strengths to improve statistical methods addressing missing data.
Standard support (funding): The standard amount of money provided to PhD students in our department is $16,000, which we plan on separating among ourselves ($8,000 provided by Dr. Coulombe and $8,000 provided by Dr. Gagnon). The student does not receive other funding from the department.

19. **Éric Marchand** (eric.marchand@usherbrooke.ca)
2500, boulevard de l'Université, Département de mathématiques, Université de Sherbrooke, Sherbrooke (Québec), J1K 2R1
Research interests: Prediction is at the heart of statistics and vital to many problems of science, engineering, medicine and health sciences, finance, and economics, among other fields of study. A predictive density is a density estimate, based on past and current data that can be used as a surrogate density for future or missing observables. Prediction, and more precisely predictive densities, are central in statistical methodology and practice, and arise in linear regression models, nonparametric regression, generalized linear models, time series, stochastic processes, model selection, metrology, and data compression, and others. The main objectives and challenges of this proposal are

methodological. They consist in making available and practicable efficient predictive densities for a wide array of situations. The proposed program of research will be concerned with deepening our understanding of statistical methods and foundations as related to the estimation of predictive densities and to methods of inference. They will also be motivated by applications, namely by problems with many parameters or more complex structures.
In particular, the proposed research is directed towards problems with additional information available on the unknown parameters as there exist many situations where such prior information is available, and for which methods of inference ought to capitalize on such informaton. Finally, we plan to investigate a wider range of multivariate probability models going beyond symmetry assumptions which have characterized much of the predictive inference work as of now.
Standard support (funding): 24,000$ tout inclus, mais peut varier un peu à la hausse.

20. **Denis Larocque** (denis.larocque@hec.ca)
Department of Decision Sciences, HEC Montréal
Research interests: Modern data often have complex characteristics that require the development of sophisticated methods. Firstly, the link between the covariates and the response is often complicated and involves non-linear effects and interactions. This means that flexible models that can automatically uncover these links are useful. Secondly, dependency structure (e.g., network, clustered) of the data and their dynamic (temporal) nature also add challenges to the analysis. It is therefore important to develop generalizations of these flexible methods to analyze such complex data. One such method, random forest, is very popular among data analysts and widely used in practice. This is because this method has one of the best performance to complexity of use ratios available. Moreover, random forests are by design embarrassingly parallel, making them practical even with large data sets. The popularity of this method is largely explained by its excellent empirical performance in a wide variety of situations with real data, but the advantages are now also confirmed by theoretical properties. One disadvantage of random forests was that they were difficult to interpret. But the availability of modern interpretation techniques (i.e., explainable AI), some general and some specifically designed for random forests, means that this is no longer a significant issue. Given all their advantages, it is not a surprise that random forests have been adapted to some settings involving complex data. However, there are several problems for which such methods have not yet been developed, and several methodological challenges remain. Some possible projects are about investigating several aspects of random forests

for spatio-temporal, network, survival, longitudinal and clustered data.
Standard support (funding): We provide $26,000 per year in scholarships.

21. **Juliana Schulz** (juliana.schulz@hec.ca)
Assistant Professor, Department of Decision Sciences, HEC Montréal, 3000, chemin de la Côte-Sainte-Catherine, Montréal (Québec), Canada H3T 2A7
Research interests: My work primarily focuses on dependence modelling, with the goal of developing novel multivariate statistical models appropriate for various types of data, including multi-dimensional discrete and mixed outcomes. With a background in actuarial mathematics, I am particularly interested in developing statistical methods appropriate for the analysis of multivariate claims data stemming from non-life insurance. I am also interested in biostatistical approaches for precision medicine wherein the objective is to develop statistical methods for estimating optimal personalized treatment strategies. Currently, I have several ongoing projects that focus on dependence modelling in the context of ratemaking in non-life insurance. Ratemaking involves a comprehensive evaluation of past claims, which are typically multidimensional as they reflect the multi-peril nature of insurance products. In order to effectively manage and price the underlying risk of an insurance portfolio, the analysis of claims data must be carried out on a multivariate scale. In analyzing claims, it is often helpful to consider both components driving the claims process, namely, the frequency (number of claims) and severity (loss amount per claim). A main goal of my current research program is to develop a two-part modelling framework involving multivariate frequency and severity models. These multivariate models must allow to adequately capture the complex dependence structures inherent in claims data. In order for the models to be particularly appropriate for ratemaking purposes, covariate effects must also be incorporated into the modelling framework. As such, regression-based versions of the multivariate models will also be explored. In order to impart a complete picture of the ratemaking process, retention considerations will also be explored; specifically, personalized retention strategies will be investigated.
Standard support (funding): Total funding is a minimum of $80,000 over four years ($20,000 per year), in addition to a tuition fee waiver and financial help to participate in scientific activities. Additional funding can also be offered for pedagogical activities promoted by the program.

22. **Léo Belzile** (leo.belzile@hec.ca)
HEC Montréal, 3000, chemin de la Côte-Sainte-Catherine, Montréal (Québec) Canada, H3T 2A7
Research interests: Extreme value analysis, including threshold selection method, spatial modelling. Applications in climate science, hydrology,

demography.
Standard support (funding): $25,000 per year over four years

23. **Archer Yi Yang** (archer.yang@mcgill.ca)
McGill University, Department of Mathematics and Statistics, Burnside Hall, Rm. 1241, 805 Sherbrooke Street West, Montreal, QC H3A 0B9, Canada
Research interests: Archer Yang is an Associate Professor in the Department of Mathematics and Statistics at McGill University and an associate member of the School of Computer Science and the Quantitative Life Science program. His main areas of research are in statistical machine learning, statistical computing, high-dimensional statistics, causal inference, and optimization with applications in biology and genomics, medicine, and industry.
Standard support (funding): Doctoral trainees are funded at a minimum level of $25,000/year for a five-year period.

24. **Cédric Beaulac** (beaulac.cedric@uqam.ca)
Département de mathématiques, Université du Québec à Montréal (UQAM), 201 avenue Président-Kennedy, Montréal (Québec) H2X 3Y7
Research interests: Mon programme de recherche se penche sur le développement de nouvelles méthodologies pour l'analyse d'image et la génération d'images. Je travaille aussi sur l'intégration de modèles d'apprentissage machine dans l'analyse de données fonctionnelles. Actuellement je développe un projet visant à faire la détection de contour sur des images. L'objective est l'estimation de contours paramétriques et/ou fonctionnels plutôt que sur une grille de pixels comme il est présentement fait dans la littérature. Ce projet requiert à la fois des développements théoriques et méthodologiques ainsi que des expérimentations plus appliquées. La balance théorie-applications dépendra ainsi des habiletés et intérêts de l'étudiant/e. Un autre projet est l'application des techniques présentement en développement sur de vraies données d'imagerie par résonnance magnétique. La taille de ces données cause un important problème d'optimisation et la résolution de réels problèmes sera le facteur déterminant les développements méthodologiques nécessaires afin de résoudre ses problèmes; ce projet serait donc idéal pour un étudiant avec une bonne expérience en programmation. Finalement, un dernier projet possible touche l'apprentissage de distribution afin de développer des modèles génératifs statistiques. Des travaux récents démontrent que bien qu'une image générée par un modèle génératif est satisfaisante, un échantillon d'image ne ressemble pas à un échantillon d'image réelle, la principale différence provenant d'une sous-estimation de la variance. Ce problème costaud serait un excellent projet pour un étudiant avec un fort bagage théorique.
Standard support (funding): Je peux offrir un financement de 22 000 $

annuellement pour 4 années d'études. Ce financement inclut la bourse de recrutement de l'INCASS pour les 2 premières années (14 000 $ total), le soutient universelle de l'UQAM (13 000 $ total), des charges d'enseignement (20 000 $ total) ainsi qu'une contribution directement de mes fonds de recherche (41 000 $ total). Il sera possible pour le/la candidat/e d'aller chercher du financement additionnel auprès du centre facultaire de recherche en statistiques (STATQAM), de la fondation de l'UQAM ainsi que du Centre de recherche en mathématique (CRM). Finalement, l'UQAM offre un financement aux étudiants étrangers leur garantissant de payer les mêmes frais de scolarité que les étudiants québécois.

25. **Mamadou Yauck** (yauck.mamadou@uqam.ca)
    Université du Québec à Montréal (UQAM), Département de mathématiques, Local PK-5525, 201 Avenue du Président-Kennedy, Montréal (Québec) H2X 3Y7
    Research interests: My current research includes topics in the area of statistical analysis of network data. I am particularly interested in developing theoretical and methodological tools for analyzing partially observed network data that are obtained from variants of link-tracing sampling techniques such as respondent-driven sampling (RDS). I have a range of projects for PhD students, including network reconstruction when sampling provides partial information about the topology of the underlying graph, network-induced identification issues in regression settings, and causal inference under interference when the underlying network structure is partially observed. Potential PhD candidates will be co-supervised by my colleague Prof. Cédric Beaulac (UQAM).
    Standard support (funding): $20,000/year

26. **Elliot Paquette** (elliot.paquette@mcgill.ca)
    Department of Mathematics and Statistics, McGill University, 805 Sherbrooke St W, Montreal, Quebec H3A 2K6
    Research interests: (1) Random matrix theory, pure and applied. (2) Statistical optimization theory of high-dimensional random objectives functions, especially those that come from statistical learning. (3) Theory of machine learning: high-dimensional probability and limit theorems associated to learning of neural networks.
    Standard support (funding): Stipend of $20,000/yr, all tuition/fees paid. 4 years guaranteed.

27. **Geneviève Gauthier** (genevieve.gauthier@hec.ca)
    HEC Montréal - 3000, chemin de la Côte-Sainte-Catherine, Montréal, Québec
    Research interests: Financial econometrics, filtering, modelling, estimation, risk measurement, numerical methods, statistical learning.
    Standard support (funding): $30,000 per year

28. **David Ardia** (david.ardia@hec.ca)
    GERAD & HEC Montréal
    Research interests: Quantitative methods for finance; text mining/NLP for finance; ML/AI for finance.
    Standard support: $25,000 per year for 4 years
29. **Mélina Mailhot** (melina.mailhot@concordia.ca)
    Associate Professor, Department of Mathematics and Statistics, Concordia University, 1544 Blvd de Maisonneuve O., Montreal, Quebec
    Research interests: Develop, estimate and analyse multivariate models and measures, uncertainty assessment, risk decomposition, spatio-temporal models, applications to non-life insurance risks and natural catastrophes.
    Standard support (funding): Total funding is a minimum of $82,000 over four years, in addition to financial help to participate in scientific activities. Additional funding may also be applicable.