

## Kevin McGregor — Curriculum Vitae

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CONTACT INFORMATION  
WEBSITE

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<http://www.kevmcgregor.com>

RESEARCH INTERESTS

Statistical genetics, analysis of microbiome data, epigenomics, high-dimensional data

LANGUAGES SPOKEN

English, French

EDUCATION

**McGill University**, Montréal, QC

Ph.D., Biostatistics, *Expected*: June 2020

- Thesis Topic: *Bayesian community modelling in microbiome data*
- Supervisors: Celia M.T. Greenwood, Ph.D. and Aurélie Labbe, Ph.D.

M.Sc., Biostatistics, November 2015

- Topic: *Methods for estimating changes in DNA methylation in the presence of cell type heterogeneity*
- Supervisors: Aurélie Labbe, Ph.D. and Celia M.T. Greenwood, Ph.D.

**University of Saskatchewan**, Saskatoon, SK

B.Sc. (Hons), Statistics, June 2013

- *Graduated with high honours*

RESEARCH EXPERIENCE

**Visiting Academic** May 2019 - August 2019  
Division of Microbiology and Infection,  
Warwick Medical School  
Supervisors: Christopher Quince, Ph.D. and Todd Parsons, Ph.D.

**Undergraduate Research Assistant** May 2011 - August 2013  
Department of Mathematics and Statistics,  
University of Saskatchewan  
Supervisors: Christine Soteros, Ph.D. and Michael Szafron, Ph.D.

REFEREED JOURNAL PUBLICATIONS

1. **Kevin McGregor**, Aurélie Labbe, Celia MT Greenwood. MDiNE: A model to estimate differential co-occurrence networks in microbiome studies. *Accepted in Bioinformatics November 2019*
2. Lea Thaler, Sarah Brassard, Esther Kahan, **Kevin McGregor**, Aurelie Labbe, Mimi Israel, and Howard Steiger. Methylation of the OXTR gene in women with Anorexia Nervosa: Relationship to Social Behavior. *Accepted in the European Eating Disorders Review: Sept 2019*
3. Thiviya Jeyakumar, Nassima Fodil, Lauren Van Der Kraak, Charles Meunier, Romain Cayrol, **Kevin McGregor**, David Langlais, Celia Greenwood, Nicole Beauchemin, Philippe Gros; P145 Inactivation of IRF1 causes susceptibility to colitis-associated colorectal cancer. *Inflammatory Bowel Diseases, Volume 25, Issue Supplement\_1, 7 February 2019, Pages S66*
4. LaRusso, Kathryn, Geraldine Schaack, Tiffany Fung, **Kevin McGregor**, Justin Long, Marie-Pier Dumas, Zahia Attari et al. "Should you Pick the PICC? Prolonged Use of Peripherally Inserted Central Venous Catheters in Children with Intestinal Failure." *Journal of Pediatric Surgery* (2019).

5. Steiger, Howard, Linda Booij, Esther Kahan, **Kevin McGregor**, Lea Thaler, Emilie Fletcher, Aurelie Labbe et al. "A longitudinal, epigenome-wide study of DNA methylation in anorexia nervosa: results in actively ill, partially weight-restored, long-term remitted and non-eating-disordered women." *Journal of psychiatry & neuroscience: JPN* 44, no. 3 (2019): 205.
6. Arabzadeh, Azadeh, **Kevin McGregor**, Valérie Breton, Lauren Van Der Kraak, Uri David Akavia, Celia MT Greenwood, and Nicole Beauchemin. "EPHA2 signaling is impacted by carcinoembryonic antigen cell adhesion molecule 1-L expression in colorectal cancer liver metastasis in a cell context-dependent manner." *Oncotarget* 8, no. 61 (2017): 104330.
7. **Kevin McGregor**, Sasha Bernatsky, Ines Colmegna, Marie Hudson, Tomi Pastinen, Aurélie Labbe, Celia MT Greenwood (2016). An evaluation of methods correcting for cell type heterogeneity in DNA methylation studies. *Genome Biology*, 2016 17(84).
8. Azadeh Arabzadeh, Jeremy Dupaul-Chicoine, Valérie Breton, Sina Haftchenary, Sara Yumeen, Claire Turbide, Maya Saleh, **Kevin McGregor**, Celia M T Greenwood, Uri David Akavia, Richard S Blumberg, Patrick T Gunning, Nicole Beauchemin (2015). Carcinoembryonic Antigen Cell Adhesion Molecule 1 long isoform modulates malignancy of poorly differentiated colon cancer cells. *Gut*, gutjun-2014.
9. Cheston, M. A., **McGregor, K.**, Soteros, C. E., Szafron, M. L. (2014). New evidence on the asymptotics of knotted lattice polygons via local strand-passage models. *Journal of Statistical Mechanics: Theory and Experiment*, 2014(2), P02014.

#### PUBLICATIONS IN PREPARATION

1. **Kevin McGregor**, Aurélie Labbe, Celia MT Greenwood (2019+). A Bayesian multinomial model to estimate microbiome co-occurrence networks as a function of a covariate profile.
2. **Kevin McGregor**, Aurélie Labbe, Celia MT Greenwood, Todd Parsons, Christopher Quince (2019+). The hierarchical Pitman-Yor model in microbiome diversity estimation.

#### CORRESPONDENCE

1. Anderson, Chloé, **Kevin McGregor**, and James A. Hanley. "Cranberry Capsules for Bacteriuria Plus Pyuria in Nursing Home Residents." *Jama* 317.10 (2017): 1077-1078.
2. **McGregor, Kevin**, Aurélie Labbe, and Celia MT Greenwood. "Response to: Correcting for cell-type effects in DNA methylation studies: reference-based method outperforms latent variable approaches in empirical studies." *Genome biology* 18.1 (2017): 25.

#### TEACHING EXPERIENCE

##### Instructor

- *EPIB 521 Regression Analysis for Health Sciences* Jan-Apr 2018  
Department of Epidemiology, Biostatistics, and Occupational Health  
McGill University
- *Seminar Series in Biostatistics (5 lectures)* Sept-Oct 2017  
Lady Davis Institute for Medical Research  
Montréal, Québec

##### Teaching Assistant

- *EDPE 676 — Intermediate Statistics* Fall 2015, 2016  
Department of Educational and Counselling Psychology,  
McGill University

	<b>Grader</b> <ul style="list-style-type: none"> <li>• <i>STAT 100 — Elementary Statistics for Applications</i> Winter 2013 University of Regina (Saskatoon Campus)</li> </ul>
	<b>Help Desk Advisor</b> <ul style="list-style-type: none"> <li>• Computer Science Help Desk May-June 2010 Department of Computer Science, University of Saskatchewan</li> </ul>
REVIEWER WORK	<ul style="list-style-type: none"> <li>• Article co-reviewed for <i>Applied Computing and Geosciences</i> 2019</li> <li>• Article co-reviewed for <i>American Journal of Human Genetics</i> 2019</li> <li>• Article co-reviewed for <i>Genome Biology</i> 2017</li> <li>• Article reviewed for <i>International Journal of Epidemiology</i> 2017</li> </ul>
OTHER ACADEMIC ACTIVITIES	<ul style="list-style-type: none"> <li>• Student council - Member at Large 2018-19, 2019-20 Department of Epidemiology, Biostatistics, and Occupational Health McGill University</li> <li>• Local Arrangement Chair Sept 2017 - June 2018 Canadian Statistics Student Conference Statistical Society of Canada</li> <li>• Biostatistics Academic Representative 2016-17, 2017-18 Department of Epidemiology, Biostatistics, and Occupational Health McGill University</li> <li>• Co-organized successful CANSSI Distinguished Visitor application March 2017 Department of Epidemiology, Biostatistics, and Occupational Health McGill University Speaker: Hilary Parker Ph.D.</li> </ul>
OTHER PROJECTS	<ul style="list-style-type: none"> <li>• Statistical analysis and consulting (various projects) 2016-present</li> <li>• Course translation (French to English) Fall 2018 HEC Montréal - Analyse et inférence statistique - 6-619-15</li> </ul>
SOFTWARE	<ul style="list-style-type: none"> <li>• MDiNE: Microbiome Differential Network Estimation - A Bayesian model to estimate precision matrix based network changes with respect to a binary covariate. <a href="https://github.com/kevinmcgregor/mdine">https://github.com/kevinmcgregor/mdine</a></li> <li>• gStirling: Calculates a table of the log of the generalized Stirling numbers of type <math>(-1, -a, 0)</math>, as defined by Hsu and Shiue, 1998. <a href="https://github.com/kevinmcgregor/gStirling">https://github.com/kevinmcgregor/gStirling</a></li> </ul>
AWARDS	<b>Awards — McGill University</b> <ul style="list-style-type: none"> <li>• FRQS Doctoral award (\$21,000/year) 2018-2020</li> <li>• Faculty of Medicine Internal Studentship (\$12,000) 2017</li> <li>• Faculty of Medicine Internal Studentship (\$12,000) 2016</li> <li>• Graduate excellence award Ph.D. (\$10,000) 2015</li> <li>• Graduate excellence award M.Sc. (\$4,000) 2013</li> </ul> <b>Awards — University of Saskatchewan</b> <ul style="list-style-type: none"> <li>• Most Outstanding Graduate in Statistics 2013</li> <li>• Dean's List 2013</li> <li>• Honours Scholarship (\$1500) 2013</li> <li>• Saskatchewan Curling Association Athlete Assistance Award (\$1100) 2009</li> <li>• Edgar Alexander Garton Scholarship (\$1000) 2009</li> <li>• Entrance Scholarship (\$3000) 2008</li> </ul>

**Travel Awards**

- McGill University Graduate Mobility Award (\$3,120) 2019
- Queen Elizabeth Scholar: “Quantitative Biology and Medical Genetics for the World” (\$6,000) 2019
- 2017 Microbiome Summer School: Big Data Analytics for Omics Science (All conference expenses covered) 2017
- Workshop on Statistical Issues in Biomarkers and Drug Co-Development (\$500) 2014

**Other Awards**

- Statistical Society of Canada Student Conference Award for best undergraduate poster (co-authored with Marla Cheston) 2013

**PRESENTATIONS****Invited talks**

- McMaster University, Hamilton ON Jan 2020  
Department of Mathematics and Statistics
- Queen’s University, Kingston ON Jan 2020  
Department of Public Health Sciences
- Bellairs Research Institute, Folkestone, St. James, Barbados Jan 2020  
Workshop on Clinical Implementation of Genomics and Epigenomics
- York University, Toronto ON Dec 2019  
Department of Mathematics and Statistics

**Contributed talks**

- Research Day 2019, Montréal QC Mar 2019  
Department of Epidemiology, Biostatistics, and Occupational Health  
McGill University, Montréal QC
- Statistical Society of Canada Annual Meeting, Montréal QC Jun 2018
- (Bio)Statistics Student Research and Career Day, McGill University Sept 2017
- Statistical Society of Canada Annual Meeting, Winnipeg MB Jun 2017
- 4th Annual Human and Statistical Genetics Meeting, Vancouver, BC Apr 2015

**Posters**

- International Genetic Epidemiology Society Annual Conference Oct 2019  
Houston, TX
- American Society of Human Genetics Annual Meeting, San Diego, CA Oct 2018
- Canadian Human and Statistical Genetics Meeting Jun 2018  
Harrison Hot Springs, BC
- Causal Challenge, Workshop on Statistical Causal Inference and Applications to Genetics, Montréal, QC Jul 2016
- EBOH 50th anniversary conference, Montréal, QC Apr 2015
- 4th Annual Human and Statistical Genetics Meeting, Vancouver, BC Apr 2015
- Workshop on Statistical Issues in Biomarker and Drug Co-development Nov 2014  
Fields Institute, Toronto, ON
- Statistical Society of Canada Annual Meeting May 2014  
Case Study Competition, Toronto, ON
- Statistical Society of Canada Student Conference May 2013  
Student poster competition, Edmonton, AB