Glen McGee, PhD

Department of Statistics and Actuarial Science
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ORCID

Current Position

Assistant Professor 2020—
Department of Statistics and Actuarial Science
University of Waterloo

Education

PhD in Biostatistics 2014–2019
Harvard University, Cambridge, MA

MA in Biostatistics 2014–2016
Harvard University, Cambridge, MA

BScH in Mathematics and Economics 2010–2014
Queens University, Kingston, ON

Other Experience

Postdoctoral Researcher 2019–2020
Harvard T.H. Chan School of Public Health, Boston, MA
Statistical modelling of non-bank payment database

Teaching

Instructor

University of Waterloo
STAT 931: Causal Inference and Epidemiological Studies Fall 2023
STAT 431/831: Generalized Linear Models and their Applications Fall 2022, Spring 2023, Spring 2022
STAT 331: Applied Linear Models Fall 2022, Spring 2021, Winter 2021

Harvard University (avg. student eval.)
Biostatistics Prep Course: Introductory Probability August 2018, 2017

Teaching Assistant

Harvard University
Statistical Methods Fall 2018
Analysis of Multivariate and Longitudinal Data Spring 2017
Statistical Methods I Fall 2016
Regression and ANOVA in Experimental Research Fall 2015

Queens University (grading only)
Linear Algebra Fall 2013
Introduction to Linear Algebra Spring 2012

Department Service

Associate Director of Statistical Consulting and Survey Research Unit 2023—
Previous: Asst. to the Director, Statistical Consulting and Collaboration Unit 2020—2023

MMath Admissions committee 2023—

Editorial

Statistical Reviewer for JAMA Network Open 2019—

Ad-Hoc Referee:

American Journal of Epidemiology
American Journal of Infection Control
Biometrics
Biostatistics
Communications Medicine
Environmental Health Perspectives
Epidemiologic Methods
Epidemiology
Fertility and Sterility
JAMA Network Open
Journal of Agricultural, Biological, and Environmental Statistics
Statistical Methods in Medical Research
Statistics in Biosciences
Statistics in Medicine

Grant Review:

MADRES Center for Environmental Health Disparities Environmental Health Disparities Research (USC), Pilot Projects Program

Professional Activities

Session chair for CANSSI-NISS	2023
Session chair for JSM 2022 Biometrics Session	2022
Session Organizer for CMStatistics	2021, 2022

Awards

Banting-CANSSI Ontario Discovery Award in Data Science	2021
ISGlobal Exposome Data Challenge Prize (Committee Vote)	2021
Young Investigator Award (ASA Section on Statistics in Epidemiology)	2020
Certificate of Distinction in Teaching (Department of Biostatistics)	2019
ENAR Distinguished Student Paper Award	2019
International Conference on Health Policy Statistics Travel Award	2018
Harvard University Certificate of Distinction in Teaching (Derek Bok Center)	2016
NSERC CGS-M Award (Declined in favor of Harvard funding)	2014
Albert Harold Lightstone Scholarship	2013
Nellie and Ralph Jeffery Award in Mathematics	2012, 2013
James H Rattray Scholarship in Science	2012
Queen's Appeal Undergraduate Scholarship	2011
Annie Bentley Lillie Prize In First Year Calculus	2011
Dean's Honour List with Distinction	2010, 2011
Queen's University Excellence Scholarship	2010

Funding

Active

NSERC Discovery Grant 2022–2027

Statistical methods for informative and outcomedependent data. Role: Principal Investigator. RGPIN-2022-03068. 2022-04-01—2027-03-31 Total: $107,500 (Including Discovery Launch Supplement: $12,500)

New Frontiers in Research Fund – Exploration 2022–2024

Being confident in the discovery of new physics from cosmological observations.

NFRFE-2021-00595. 2022/03/31—2024/03/30. Role: Co-applicant (PI: Will Percival). Total: $250,000

University of Waterloo New Faculty Startup Grant 2020–2025
Internal. 2020-09-01—2025-08-30. Total: $60,000

Completed

Banting-CANSSI Ontario Discovery Award in Data Science 2021–2022
Addressing Informative Presence Bias in Analyses of Electronic Health Records. 2021/07/01—2022/06/30. Role: Principal Investigator. Total: $18,241

Professional Associations

ASA Member 2019–
SSC Member 2021–

Submitted Manuscripts

Pan, T., Stringer, A., and **McGee, G.** "Marginal and Conditional Inference in Bayesian Hierarchical Additive Models in Ecology." *Submitted.*

Wen, L. & **McGee, G.** "Estimating Average Causal Effects with Incomplete Exposure and Confounders." (2024+) *Submitted.*

Publications

* indicates co-first authorship.

Paradiso, S., DiMarco, M., Chen, M., **McGee, G.**, & Percival, W. J. (2024). "A convenient approach to characterizing model uncertainty with application to early dark energy solutions of the Hubble tension." *Monthly Notices of the Royal Astronomical Society, stae101.* DOI:10.1093/mnras/stae101

McGee, G.*, Stringer, A.* "Marginal additive models for population-averaged inference in longitudinal and cluster-correlated data." (2023) *Scandinavian Journal of Statistics.* DOI:10.1111/sjos.12681

Génard-Walton, M., **McGee, G.**, Williams, P., Souter, I., Ford, J., Chavarro, J., Calafat, A., Hauser, R., Mínguez-Alarcón, L. for the Earth Study Team. "Mixtures of urinary concentrations of phenols and phthalate metabolites in relation to markers of ovarian function among women from a fertility clinic" (2023). *Science of the Total Environment* DOI:10.1016/j.scitotenv.2023.165536

McGee, G., Génard-Walton, M., Williams, P., Chavarro J., Meekeri, J., Braun, J., de Poorterek, R., Broerenk, M., Ford, J., Calafatl, A., Hauserd, R., Mínguez-Alarcón L., for the Earth Study Team. "The association of maternal urinary concentrations of phenols, individually and as a mixture, with serum biomarkers of thyroid function and autoimmunity: results from the EARTH Study" (2023). *Toxics.* DOI:10.3390/toxics11060521

McGee, G., Wilson, A., Coull, B., Webster, T. "Integrating Biological Knowledge in Kernel-Based Analyses of Environmental Mixtures and Health." (2023) *Statistics in Medicine.* DOI:10.1002/sim.9765

Yim, G., **McGee, G.**, Gallagher, L., Baker, E., Jackson, B.P., Calafat, A.M., Botelho, J.C., Gilbert-Diamond, D., Karagas, M.R., Romano, M.E. and Howe, C.G. (2023). "Metals and per-and polyfluoroalkyl substances mixtures and birth outcomes in the New Hampshire birth cohort study: Beyond single-class mixture approaches."

Chemosphere. DOI:10.1016/j.chemosphere.2023.138644

Quante, M., **McGee, G.**, Yu, X., von Ash, T., Luo, M., Kaplan, E. R., Rueschman, M., Haneuse, S., Davison, K., Redline, S., Taveras, E. M. (2022) "Associations of sleep-related behaviors and the sleep environment at infant age one month with sleep patterns in infants five months later." *Sleep Medicine.* DOI:10.1016/j.sleep.2022.03.019

McGee, G., Haneuse, S., Coull, B., Weisskopf, M., Rotem, R. (2022). "On the Nature of Informative Presence Bias in Analyses of Electronic Health Records." *Epidemiology.* DOI:10.1097/EDE.0000000000001432

McGee, G., Wilson, A., Webster, T., Coull, B. (2021) "Bayesian Multiple Index Models for Environmental Mixtures." *Biometrics.* DOI:10.1111/biom.13569

Bie, R., Haneuse, S., Huey, N., Schildcrout, J. and **McGee, G.** (2021) "Fitting Marginal Models in Small Samples: A Simulation Study of Marginalized Multilevel Models and Generalized Estimating Equations." *Statistics in Medicine.* DOI:10.1002/sim.9126

Sotomayor, R. J., Toscano, C. M., Choez, X. S., Ortíz, M. V., Condo, J. R., Ghisays, G., Haneuse, S., Weinberger, D. M., **McGee, G.**, & de Oliveira, L. H. (2020). "Impact of pneumococcal conjugate vaccine on pneumonia hospitalization and mortality in children and elderly in Ecuador: Time series analyses." Vaccine, 38(45), 7033-7039. DOI:10.1016/j.vaccine.2020.09.032

Allen, W. E.*, Altae-Tran, H.*, Briggs, J.*, Jin, X.*, **McGee, G.***, Andy Shi*, Raghavan, R., Kamariza, M., Nova, N., . . . , Zhang, F., and Lin, X. (2020). Population-scale Longitudinal Mapping of COVID-19 Symptoms, Behavior, and Testing Identifies Contributors to Continued Disease Spread in the United States. *Nature Human Behaviour.* DOI:10.1038/s41562-020-00944-2

McGee, G., Kioumourtzoglou, M.-A., Weisskopf, M., Haneuse, S., and Coull, B. (2020). "On the Interplay Between Exposure Misclassification and Informative Cluster Size in Multigenerational Studies." *Journal of the Royal Statistical Society: Series C.* DOI:10.1111/rssc.12430

McGee, G., Perkins, N. J., Mumford, S. L., Kioumourtzoglou, M. A., Weisskopf, M. G., Schildcrout, J. S., Coull, B., Schisterman, E., and Haneuse, S. (2020). "Methodological Issues in Population-Based Studies of Multigenerational Associations." *American Journal of Epidemiology.* DOI:10.1093/aje/kwaa125

Glover, M., **McGee, G.**, Wilkinson, D., Singh, S., Bolick, A., Betensky, R., Harvey, H. B., Weinstein, D., and Schaffer, A. (2020). "Characteristics of Paid Malpractice Claims Among Resident Physicians from 2001-2015." *Academic Medicine.* DOI:10.1097/ACM.0000000000003039

Coull, B., Lee, S., **McGee, G.**, Manjourides, J., Mittleman, M., and Wellenius, G. (2020). "Corrections for Measurement Error Due to Delayed Onset of Illness for Case-Crossover Designs." *Biometrics.* DOI:10.1111/biom.13173

McGee, G., Schildcrout, J., Normand, S.-L. and Haneuse, S. (2020). "Outcome-Dependent Sampling in Cluster-Correlated Data Settings with Application to Hospital Profiling." *Journal of the Royal Statistical Society: Series A.* DOI:10.1111/rssa.12503

McGee, G., Weisskopf, M. G., Kioumourtzoglou, M. A., Coull, B. A., and Haneuse, S. (2020). "Informatively empty clusters with application to multigenerational studies". *Biostatistics.* DOI:10.1093/biostatistics/kxz005

Presentations

2023 Invited Presentation, Joint Statistical Meeting (JSM), Toronto, ON, Canada, "Informative Presence Bias in Electronic Health Records: The Impact of Outcome-Dependent Observation Mechanisms."

2023 Invited Presentation, Statistical Society of Canada (SSC) Annual Meeting, Ottawa, Canada, "Testing for Non-Additive Interaction in Flexible Bayesian Models for Multi-Pollutant Mixtures."

2022 Oral Presentation, Annual Conference for the International Society for Environmental Epidemiology (ISEE), Athens, Greece, "Incorporating Biological Knowledge in Analyses of Environmental Mixtures and Health."

2022 Invited, Joint Statistical Meeting (JSM), Washington, DC, "Incorporating Biological Knowledge in Analyses of Environmental Mixtures and Health."

2022 Contributed Oral Presentation, Statistical Society of Canada (SSC) Annual Meeting (Virtual), "Flexible Marginal Models For Dependent Data."

2021 Invited Seminar, International Conference on Computational and Methodological Statistics (CMStatistics 2021), London, UK. (Virtually). "Bayesian Multiple Index Models for Environmental Mixtures."

2021 Contributed Oral Presentation, Joint Statistical Meetings (Virtual), "Bayesian Multiple Index Models for Environmental Mixtures."

2021 Contributed Oral Presentation, Statistical Society of Canada Annual Meeting (Virtual), "Bayesian Multiple Index Models for Environmental Mixtures."

2021 Contributed Oral Presentation, ISGlobal Exposome Data Challenge, Spain (Virtual). " Quantifying Exposome-Health Associations with Bayesian Multiple Index Models."

2021 Invited Seminar, NIEHS PRIME Webinar, Virtual. "Bayesian Multiple Index Models for Environmental Mixtures."

2020 Invited Seminar, International Conference on Computational and Methodological Statistics (CMStatistics 2020), London, UK. (Virtually). "Informative presence bias in electronic health records."

2020 Invited Seminar, Student Seminar Series, Department of Statistics and Actuarial Science, University of Waterloo, ON. (Virtually). "Bayesian Multiple Index Models for Multi-Pollutant Mixtures."

2020 Invited Oral Presentation, Health Data Science Lab, University of Waterloo, ON. (Virtually). "Bayesian Multiple Index Models for Multi-Pollutant Mixtures."

2020 New Investigator Lightning Talk, NIEHS PRIME Program Grantee Meeting, NIEHS, Durham, NC (Virtually). "Bayesian Single and Multiple Index Models for Multi-Pollutant Mixtures."

2020 Contributed Oral Presentation, Joint Statistical Meetings, Philadelphia, PA (Virtually). "On the Interplay Between Exposure Misclassification and Informative Cluster Size."

2020 Contributed Oral Presentation, ENAR Spring Meeting, Nashville, TN (Virtually). "On the Interplay Between Exposure Misclassification and Informative Cluster Size."

2020 Invited Seminar, Department of Biostatistics, University of Toronto, Toronto, ON. "Methodological Problems in Multigenerational Epidemiology."

2020 Invited Seminar, Department of Statistics and Actuarial Science, University of Waterloo, ON. "Methodological Problems in Multigenerational Epidemiology."

2019 Invited Seminar, International Conference on Computational and Methodological Statistics (CMStatistics 2019), London, UK. "Outcome-Dependent Sampling with Application to Hospital Profiling."

2019 Invited Seminar, Department of Biostatistics, Vanderbilt University Medical Center, Nashville, TN. "Methodological Problems in Multigenerational Epidemiology."

2019 Oral presentation, Nurses Health Study Meeting, Brigham and Women's Hospital, Boston, MA. "On the Interplay Between Exposure Misclassification and Informative Cluster Size."

2019 Contributed Oral Presentation, ENAR Spring Meeting, Philadelphia, PA. "Informatively Empty Clusters with Application to Transgenerational Studies."

2019 Quantitative Issues in Cancer Research Working Seminar, Department of Biostatistics, Harvard University, Boston, MA. "Methodological Considerations for Studies of Multigenerational and Transgenerational Effects."

2019 Invited Seminar, Department of Mathematics and Statistics, York University, Toronto, ON. "Informatively Empty Clusters and Multigenerational Studies."

2018 Oral presentation, Nurses Health Study Meeting, Brigham and Women's Hospital, Boston, MA. "Informatively Empty Clusters with Application to Transgenerational Studies."

2018 Contributed oral presentation, Joint Statistical Meetings, Vancouver, BC. "On the Impact of Empty Clusters."

2018 Working Group on Outcome-Dependent Sampling, National Institute of Child Health and Human Development (NIH), Bethesda, MD. "Statistical Considerations for Transgenerational Studies."

2018 Poster presentation, Harvard/MIT ACE Science Advisory Committee Meeting, Boston, MA. "Corrections for Measurement Error Due to Delayed Onset of Illness for Case-Crossover Designs."

2018 Contributed oral presentation, International Conference on Health Policy Statistics, Charleston, SC. "Outcome-Dependent Sampling in Cluster-Correlated Data Settings with Application to Hospital Profiling."

2017 Contributed oral presentation, Eastern North American Region Spring Meeting, Washington, DC. "Outcome-Dependent Sampling in Cluster-Correlated Data Settings with Application to Hospital Profiling."

2016 Invited seminar, Environmental Statistics Seminar Series, Harvard University. "Corrections for Measurement Error Due to Delayed Onset of Illness in Case-Crossover Designs."

2016 Working Group on Outcome-Dependent Sampling, National Institute of Child Health and Human Development (NIH), Bethesda, MD. "Mixed Effects Models Under Outcome Dependent Sampling."

2015 P01/Environmental Statistics Retreat, Wellesley College Club, MA. "Mixed Effects Models Under Outcome Dependent Sampling."

2015 Summer Research Presentation, Department of Biostatistics, Harvard University, Cambridge, MA. "Generalized Linear Mixed Models Under Outcome Dependent Sampling."

2013 Oral presentation, Financial Stability Department, Bank of Canada. "The Role of Non-Banks in the Payment Industry: Adoption and Use."