Luke W. Johnston

Updated: March 20, 2018

Education

Degrees

2017 *PhD*, University of Toronto, Canada

Serum Composition of Fatty Acids in Lipid Fractions in the Progression of Metabolic Abnormalities Underlying Type 2 Diabetes Mellitus. Supervisor: Dr. Anthony J. Hanley. Co-supervisor: Dr. Richard Bazinet

2013 *MSc*, University of Toronto, Canada

Association of Leg Length with Metabolic Abnormalities Underlying Type 2 Diabetes Mellitus. Supervisor: Dr. Anthony J. Hanley

2010 *Honours BSc in Kinesiology*, University of Waterloo, Canada

Certificates

2017 *Graduate Professional Skills*

Organization: Graduate Professional Skills Program, School of Graduate Studies, University of Toronto, Canada.

2017 *Data Carpentry Instructor Training*

Organization: Data Carpentry.

2015 *Software Carpentry Instructor Training*

Organization: Software Carpentry. (http://swcarpentry.github.io/training-course/2015/02/luke-johnston/)

2015 *Advanced University Teaching Preparation*

Organization: Teaching Assistants' Training Program, University of Toronto, Canada.

Courses

Present *Mozilla Open Project Leaders Training*

Organization: Mozilla. (https://mozilla.github.io/leadership-training/round-5/projects/#an-r-software-toolkit-to-simplify-an-open-collaborative-scientif)

2016-05-26 *'OMICS and Epidemiology*

Organization: McMaster University Health Sciences.

Publications

Articles

1. **Johnston L**, Liu Z, Retnakaran R, Zinman B, Giacca A, Harris SB, Bazinet RP, Hanley AJ. Clusters of fatty acids in the serum triacylglyceride fraction associate with the disorders of type 2 diabetes. *bioRxiv*. 2018. doi: 10.1101/279703.
2. **Johnston LW**, Harris SB, Retnakaran R, Giacca A, Liu Z, Bazinet RP, Hanley AJ. Association of non-esterified fatty acid composition with insulin sensitivity and beta cell function in the Prospective Metabolism and Islet Cell Evaluation (PROMISE) cohort. *Diabetologia*. 2017;61(821). doi: 10.1007/s00125-017-4534-6.
3. **Johnston LW**, Harris SB, Retnakaran R, Zinman B, Giacca A, Liu Z, Bazinet RP, Hanley AJ. Longitudinal associations of phospholipid and cholesteryl ester fatty acids with disorders underlying diabetes. *J Clin Endocrinol Metab*. 2016;101(6):2536-2544. doi: 10.1210/jc.2015-4267.
4. **Johnston LW**, Harris SB, Retnakaran R, Gerstein HC, Zinman B, Hamilton J, Hanley AJ. Short leg length, a marker of early childhood deprivation, is associated with metabolic disorders underlying type 2 diabetes mellitus: The PROMISE cohort study. *Diabetes Care*. 2013;36(11):3599-3606. doi: 10.2337/dc13-0254.
5. Doughty K, Rothman L, **Johnston L**, Le K, Wu J, Howard A. Low-income countries' orthopaedic information needs: Challenges and opportunities. *Clinical Orthopaedics and Related Research*. 2010;468:2598-2603. doi: 10.1007/s11999-010-1365-x.

Oral presentations

1. Santaren ID, Bazinet R, Liu Z, **Johnston LW**, Retnakaran R, Harris SB, Zinman B, Hanley AJ. Serum Fatty Acids Derived from Dairy Consumption Are Associated with Longitudinal Changes in Insulin Sensitivity and Beta-cell Function: The Prospective Metabolism and Islet Cell Evaluation (PROMISE) Cohort. In: *35th International Symposium on Diabetes and Nutrition*. Skagen, Denmark; 2017.
2. Bonsma M, Tran L, Coome L, **Johnston L**. Study Groups - Crossing the Boundaries of Discipline. In: *Mozilla Festival*. London, UK; 2016. https://app.mozillafestival.org/#_session-552.
3. Santaren ID, Bazinet RP, Liu Z, **Johnston LW**, Retnakaran R, Harris SB, Zinman B, Hanley AJ. Serum Fatty Acids Derived from Dairy Consumption are Associated with Insulin Sensitivity and Beta-cell Function: The PROspective Metabolism and ISlet cell Evaluation (PROMISE) Cohort. *Diabetes*. 2016;65(Supplement 1):A95. doi: 10.2337/db16-1-381.

4. **Johnston LW**, Lee C, Harris S, Retnakaran R, Zinman B, Bazinet RP, Hanley AJ. Serum Phospholipid (PL) Fatty Acid Composition Predicts Declines in Insulin Sensitivity (IS) and Beta-Cell Function Over 6-years in the Prospective Metabolism And Islet Cell Evaluation (PROMISE) Cohort. In: *International Diabetes Epidemiology Group Scientific Meeting*. Vancouver, Canada; 2015. https://figshare.com/s/1cce7abacad54e48aa0a.
5. **Johnston L**, Lee C, Harris S, Retnakaran R, Zinman B, Bazinet R, Hanley A. Serum Non-Esterified Fatty Acid (NEFA) Concentrations are Associated with Longitudinal Progression of Beta-Cell Dysfunction: Prospective Metabolism and Islet Cell Evaluation (PROMISE) Cohort. In: *33rd International Symposium on Diabetes & Nutrition in Toronto, Canada*. Toronto, Canada; 2015. doi: 10.6084/m9.figshare.1545567.
6. **Johnston L**, Kayaniyil S, Lee C, Harris S, Retnakaran R, Zinman B, Bazinet R, Hanley A. Lower Serum Non-Esterified Eicosapentaenoic Acid (EPA) is Associated with Insulin Resistance in the PROspective Metabolism and ISlet Cell Evaluation (PROMISE) Cohort. In: *Biennial Congress of the International Society for the Study of Fatty Acids and Lipids*. Stockholm, Sweden; 2014. https://figshare.com/s/89dbdcb4695f19cbd2b1.
7. Kennedy R, **Johnston L**. Report of the Smoke-free Policy Scan of YMCAs and YWCAs in Ontario. In: *Meeting of the Tobacco-Free Sports and Recreation Community of Practice*. University of Waterloo, Canada; 2010.

Poster presentation

1. Semnani-Azad Z, Connelly PW, **Johnston LW**, Retnakaran R, Harris SB, Zinman B, Hanley AJ. Longitudinal Associations of Soluble CD163 with Insulin Sensitivity and Beta-Cell Function: The Prospective Metabolism and Islet Cell Evaluation (PROMISE) Cohort. In: *4th Annual Bbdc-Joslin-Ucph Conference in Toronto, Canada.*; 2017.
2. **Johnston LW**, Retnakaran R, Harris SB, Liu Z, Bazinet RP, Hanley. AJ. Fatty Acids Produced by De Novo Lipogenesis (DNL) of Refined Carbohydrates are Associated with Worsening of Metabolic Syndrome (MetS) Components: The Prospective Metabolism and Islet Cell Evaluation (PROMISE) Cohort. *Diabetes*. 2017;66(Supplement 1)(1669-P):A445. doi: 10.2337/db17-1489-1795.
3. Wang WZ, Cole DE, **Johnston LW**, Wong BY, Fu L, Retnakaran R, Harris SB, Zinman B, Hanley. AJ. Urinary Vitamin D Binding Protein as a Potential Biomarker for Nephropathy in Subjects at Risk for Type 2 Diabetes: The Prospective Metabolism and Islet Cell Evaluation (PROMISE) Cohort Study. *Diabetes*. 2017;66(Supplement 1)(1627-P):A435. doi: 10.2337/db17-1489-1795.
4. Semnani-Azad Z, Connelly PW, **Johnston LW**, Retnakaran R, Harris SB, Zinman B, Hanley AJ. Longitudinal Associations of Soluble CD163 with Insulin Sensitivity and Beta-Cell Function: The Prospective Metabolism and Islet Cell Evaluation (PROMISE) Cohort. *Diabetes*. 2017;66(Supplement 1)(1674-P):A447. doi: 10.2337/db17-1489-1795.
5. **Johnston LW**, Retnakaran R, Harris S, Zinman B, Liu Z, Bazinet RP, Hanley AJ. Triglyceride Fatty Acid (TGFA) Composition Longitudinally Associates with Changes in Insulin Sensitivity (IS) and Beta-Cell Function Over 6-yrs in the Prospective Metabolism and Islet Cell Evaluation (PROMISE) Cohort. *Diabetes*. 2016;65(Supplemental 1):A406. doi: 10.6084/m9.figshare.3422767.
6. Semnani-Azad Z, **Johnston LW**, Harris SB, Retnakaran R, Zinman B, Connelly PW, Hanley. AJ. Multivariate Determinants of Reduced Insulin Clearance in Prospective Metabolism and Islet Cell Evaluation (PROMISE) Cohort. *Diabetes*. 2016;65(Supplement 1):A405. doi: 10.2337/db16-1375-1656.
7. **Johnston L**, Lee C, Harris S, Retnakaran R, Zinman B, Bazinet R, Hanley A. Serum Non-Esterified

Fatty Acid (NEFA) Concentration is Associated with Longitudinal Progression of Beta-Cell Dysfunction: Prospective Metabolism and Islet Cell Evaluation (PROMISE) Cohort. *Diabetes*. 2015;64(Suppl. 1):A421, 1621-P. doi: 10.6084/m9.figshare.1545566.

8. **Johnston L**, Lee C, Harris S, Retnakaran R, Zinman B, Bazinet R, Hanley A. Serum Non-Esterified Fatty Acid (NEFA) Composition and Longitudinal Associations with Beta-Cell Dysfunction. In: *International Diabetes Federation World Diabetes Congress in Vancouver, Canada.*; 2015. https://figshare.com/s/7301482497f6a6349dc8.
9. **Johnston L**, Kayaniyil S, Lee C, Harris S, Retnakaran R, Zinman B, Bazinet R, Hanley A. Lower Serum Non-Esterified Eicosapentaenoic Acid (EPA) Is Associated with Insulin Resistance: PROspective Metabolism and ISlet Cell Evaluation (PROMISE) Cohort. *Diabetes*. 2014;63(Suppl. 1):A384, 1463-P. https://figshare.com/s/a7cf86f77bc4be78ac7f.
10. **Johnston LW**, Harris SB, Retnakaran R, Gerstein HC, Hamilton J, Zinman B, Hanley AJ. The association of leg length with metabolic abnormalities underlying type 2 diabetes mellitus: The PROMISE cohort. *Diabetes*. 2013;62(Suppl. 1):A912, 1578-P. https://figshare.com/s/271bfd6c988efcdb5921.
11. Kennedy R, **Johnston L**, Munhall C, Filsinger S. Secondhand Smoke in Common Spaces of Public Housing – Findings from Waterloo Region. In: *7th National Conference on Tobacco or Health, Making the Connection: Knowledge Transforming Health*. Canadian Council on Tobacco Control; 2011.
12. Munhall C, Kennedy R, **Johnston L**, Steibelt E, Trusler A. An Environmental Scan of Tobacco-free Policies of YMCA & YWCA Locations in Ontario, Canada. In: *17th Annual Meeting of the Society on Research on Nicotine and Tobacco.*; 2011.
13. Howard A, **Johnston L**, Rothman L. Probability of Multiple Fractures in Childhood Session. In: *Safety 2010 World Conference.*; 2010.
14. Kennedy R, **Johnston L**, Fong G, Hyland A, Travers M. Experimental Evaluation of Outdoor and Adjacent Indoor Tobacco Smoke Pollution in Doorways. In: *14th World Conference on Tobacco or Health.*; 2009.
15. **Johnston L**, Kennedy R, Fong G. An Environmental Scan of Tobacco Control Policies on University Campuses in Ontario. In: *Tobacco Control for the 21st Century*. Ontario Tobacco Research Unit; 2008.
16. Kennedy R, Fong G, Travers M, Hyland A, **Johnston L**, Mutti S. Experimental Evaluation of Tobacco Control Policies in Outdoor Environments. In: *Tobacco Control for the 21st Century*. Ontario Tobacco Research Unit; 2008.

Panel member

1. Saderi D, Vousden-Dishington GR, Patterson L, **Johnston L**. Community building. In: *Working Open Workshop, Mozilla Science Lab*. Montreal, Canada; 2017. https://mzl.la/2017wow.

R packages

CRAN

prodigenr *Research Project Directory Generator*: Create a project directory structure, along with typical files for that project. This allows projects to be quickly and easily created, as well as for them to

be standardized. Designed specifically with scientists in mind (mainly bio-medical researchers, but likely applies to other fields). *First published*: Apr, 2016

mason *Build Data Structures for Common Statistical Analysis*: Use a consistent syntax to create data structures of common statistical techniques that can be continued in a magrittr pipe chain. Design the analysis, add settings and variables, construct the results, and polish the final structure. Rinse and repeat for any number of statistical techniques. *First published*: Jul, 2016

carpenter *Build Common Tables of Summary Statistics for Reports*: Easily create tables commonly used in scientific papers that can be reproduced and automatically updated whenever new data is included or from suggestions by reviewers. *First published*: Jul, 2016

GitHub

seer Become a seer of data to gain insights into the structure of your results. Use a common syntax to quickly create commonly used plots from analyses.

fost Formatting and style templates for (biomedical) journal submission. These templates convert reproducible R Markdown documents into Word documents ready for journal submission.

PROMISE.audit Checks given values of a dataset for 'wrong' values (e.g. a DaysPerWeek column should only contain integers 1 to 7 since there are 7 days in a week). Adds these 'flaws' to the data so that a 'flaw' report can be created to look into the violations in the raw data source.

PROMISE.scrub Scrub the PROMISE dataset. Functions to take the raw PROMISE datasets and scrub, clean, and organize them into a 'tidy', single dataset.

PROMISE.methods Programmatically construct data dictionaries of the PROMISE datasets. Any additions or changes to the data will be automatically updated and reflected in the data dictionary.

ggepi ggplot2 extensions for visualizing epidemiological analyses. This package expands on my seer package by developing underlying ggplot2 geom layers. This allows the epi graphs to be easily customized and extensible.

aide Aiding with common and simple utility functions. More of a helper package to the other packages.

Contributed to

broom Convert statistical analysis objects from R into tidy data frames, so that they can more easily be combined, reshaped and otherwise processed with tools like 'dplyr', 'tidyr' and 'ggplot2'. The package provides three S3 generics: tidy, which summarizes a model's statistical findings such as coefficients of a regression; augment, which adds columns to the original data such as predictions, residuals and cluster assignments; and glance, which provides a one-row summary of model-level statistics. I added S3 methods to the functions for generalized estimating equation results.

Awards

2017 *Michael C. Archer Research Excellence Award*, University of Toronto, Canada

Recognition for the best research article published in 2016 by a graduate student in the Department of Nutritional Sciences.

2017 *Marie Skłodowska-Curie Master Class and Travel Fund*, Aarhus University, Denmark

Participation in a workshop aimed at applying for the Marie Curie Fellowship, with travel expenses and accommodations paid.

2017 *Working Open Workshop and Travel Scholarship*, Mozilla Science Lab

Value: USD 300. Attendance to a workshop hosted by the Mozilla Science Lab to train on using open source and processes for research projects.

2017 *Gordon Cressy Student Leadership Award*, University of Toronto

For recognition of outstanding extra-curricular contributions to the faculty and the university as a whole. Contributions include creating a workshop series (offered in the Graduate Professional Skills program) to teach coding to graduate students, playing an instrumental role in starting a student group (UofTCoders) to allow for peer-level skill sharing of coding and programming for science and research, and for running short, twice-monthly coding sessions in the Department of Nutritional Sciences.

2014 - 2017 *Doctoral Student Research Award*, Canadian Diabetes Association

Value: $21000. National competitive award

2014 - 2015 *Graduate Novo Nordisk Studentship*, Banting and Best Diabetes Centre, University of Toronto, Canada

Value: $3840.

2014 - 2015 *Margaret and Nicholas Fodor Fellowship*, School of Graduate Studies, University of Toronto, Canada

Value: $3000. University-wide awards

2014 - 2015 *Ontario Graduate Scholarship*, Government of Ontario, Canada

Value: $15000. Awarded, but declined for the CDA Doctoral Award

2015 *Trainee Travel Award*, Banting and Best Diabetes Centre, University of Toronto, Canada

Value: $1000. For attendance to the American Diabetes Association 75rd Scientific Sessions

2013 - 2014 *Ontario Graduate Scholarship*, Government of Ontario, Canada

Value: $15000.

2014 *Trainee Travel Award*, Banting and Best Diabetes Centre, University of Toronto, Canada

Value: $1000. For attendance to the American Diabetes Association 74rd Scientific Sessions

2014 *Conference Travel Grant*, School of Graduate Studies, University of Toronto, Canada

Value: $1120. For attendance to the International Society for the Study of Fatty Acids and Lipids 2014 Biennial Congress

2014 *Alumni Travel Award*, Department of Nutritional Sciences, University of Toronto, Canada

Value: $200. For attendance to the International Society for the Study of Fatty Acids and Lipids 2014 Biennial Congress

2014 *New Investigator Award*, International Society for the Study of Fatty Acids and Lipids

Given out during the International Society for the Study of Fatty Acids and Lipids 2014 Biennial Congress

2012 - 2013 *Ontario Graduate Scholarship*, Government of Ontario, Canada

Value: $15000.

2013 *Trainee Travel Award*, Banting and Best Diabetes Centre, University of Toronto, Canada

Value: $1000. For attendance to the American Diabetes Association 73rd Scientific Sessions

2009 - 2010 *Ashley Studentship*, Ontario Tobacco Research Unit, Canada

Value: $3600 (stipend), $3600 (research budget). Title: *Smoking in Outdoor and Quasi-Outdoor Environments – An Opportunity for Knowledge Transfer.* Collaborated with Physicians for Smoke-Free Canada to develop effective communication tools (factsheets, conference presentations) using data from previous outdoor smoking experiments to influence policy development in tobacco control. Supervised by Dr. Geoffrey Fong

Teaching

Jun, 2015 – Jan, 2018 *Instructor*, Programming code-alongs, UofT Coders, University of Toronto, Canada

Various coding sessions (Git, R). Website: http://uoftcoders.github.io.

Sep – Dec, 2017 *Teaching Assistant*, Theoretical Ecology and Reproducible Quantitative Methods in R (EEB430), Department of Ecology and Evolutionary Biology, University of Toronto, Canada

Created the curriculum (along with five other members). Taught three lectures, created and marked assignments. Website: https://uoftcoders.github.io/rcourse.

Sep – Dec, 2017 *Teaching Assistant*, Public Health Nutrition (NFS1201), Department of Nutritional Sciences, University of Toronto, Canada

Gave a lecture and created the assignment (see website). Marked the assignment. Website: https://gitlab.com/lwjohnst/nfs1201-2017.

May, 2017 *Instructor*, Software Carpentry workshops (R), Software Carpentry

Instructed the second day of the two-day workshop at Ryserson University on advanced uses of R.

Jan – Apr, 2017 *Teaching Assistant*, Basic Human Nutrition (NFS284), Department of Nutritional Sciences, University of Toronto, Canada

Marked assignments and exams.

May, 2016 – Apr, 2017 *Instructor*, Departmental R workshops, Code As Manuscript

I wanted to increase the computing capacity of my graduate department and to start to promote a culture of code-sharing and code reviews. Since how analyses are conducted and what the code is to create the scientific results is increasingly becoming more important, I wanted to start teaching students how to use R efficiently and productively. I've also set up a code review with

my lab, so it was efficient for me to wrap these workshops up with the code reviews. Website: http://codeasmanuscript.github.io/code-along.

Feb, 2017 *Helper*, Software Carpentry workshops (Python), Software Carpentry

Acted as helper to the instructors at a two-day workshop introducing computing to researchers and students at the University of Toronto. Duties were to answer any questions and fix any problems that novice learners encountered during the two day workshop. Website: http://uoftcoders.github.io/2017-02-03-utoronto/.

Jan, 2017 *Helper*, Software Carpentry workshops (R), Software Carpentry and UofTCoders

Helped learners during the Git session of the two day workshop. Website: https://uoftcoders.github.io/2018-01-18-utoronto/.

Sep – Dec, 2016 *Teaching Assistant*, Advanced Nutrition (NFS484-1484), Department of Nutritional Sciences, University of Toronto, Canada

Marked exams. Developed and marked a short assignment. Answered any student questions.

Sep, 2016 *Instructor*, Software Carpentry workshops (R), Software Carpentry

Taught the first R session to novice learners at a two-day workshop on introducing computing to researchers and students at York University. Website: https://gvwilson.github.io/2016-09-14-yorku/.

Jul – Aug, 2016 *Helper*, CUPE3902 Post-doc Python workshops, CUPE3902 Unit 5

The UofTCoders members were hired by CUPE3902 Unit 5 to teach Python to post-doctoral fellows. As a core member of the UofTCoders, I acted as a helper to the instructors at the three-part workshop series introducing the Python programming language. Duties were to answer any questions and fix any problems that novice learners encountered during the Python sessions.

May, 2016 *Instructor*, Software Carpentry workshops (Python), Software Carpentry

Taught the Git session to novice learners at a two-day workshop on introducing computing to researchers and students at the University of Toronto, as well as acted as helper during the Shell and Python sessions. Website: http://uoftcoders.github.io/2016-05-09-utoronto/.

Apr, 2016 *Helper*, Software Carpentry workshops (R), Software Carpentry

Acted as helper to the instructors at a two-day workshop introducing computing to researchers and students at the University of Toronto. Duties were to answer any questions and fix any problems that novice learners encountered during the R sessions. Website: http://uoftcoders.github.io/2016-04-25-utoronto/.

Sep – Dec, 2015 *Teaching Assistant*, Public Health Nutrition (NFS1201), Department of Nutritional Sciences, University of Toronto, Canada

Gave two lectures during the course and developed and marked the final (third) assignment.

Oct, 2014 – Nov, 2015 *Instructor and founder*, Code as Manuscript: Data wrangling, visualization, and reproducibility in R, Graduate Professional Skills Program, University of Toronto, Canada

I started this workshop series in the Department of Nutritional Sciences and eventually got it approved for teaching in the GPS program. Initially I taught with colleague Dr. Daiva

Nielsen and we taught graduate students SAS coding and computing skills. I now teach R and Git, having co-instructed with Sarah Meister. We teach version control, beginner and advanced coding techniques, and how to structure research projects around the idea of reproducibility. Consistent with our mission statement, our material is publicly available online at http://github.com/codeasmanuscript/workshops. Website: http://codeasmanuscript.org.

Jul, 2015 *Instructor*, Software Carpentry Workshop (R), Software Carpentry

Coding workshop hosted at the Hospital for Sick Children, Toronto. I taught version control using Git and acted as helper for the Shell and R sessions. Website: http://blog.tomwright.ca/2015-07-16-sickkids/.

Jan, 2015 *Teaching Helper*, Software Carpentry Workshop (R), Software Carpentry

Coding workshop hosted at the Hospital for Sick Children, Toronto. I provided technical support, worked through students' problems and issues with them, and answered any questions. Website: http://tomwright01.github.io/2015-01-29-sickkids/.

Sep – Dec, 2014 *Teaching Assistant*, Advanced Nutrition (NFS484-1484), Department of Nutritional Sciences, University of Toronto, Canada

Developed and lead tutorials for graduate students. Developed and marked the final exam. Answered any student questions.

Oct, 2014 *Teaching Helper*, Software Carpentry Workshop (Python), Software Carpentry

Coding workshop hosted at the Gerstein Library, University of Toronto. I provided technical support, assisted students' with problems and issues, and answered student questions. Website: http://swcarpentry.github.io/2014-10-30-utoronto/.

Sep – Dec, 2013 *Teaching Assistant*, Advanced Nutrition (NFS484-1484), Department of Nutritional Sciences, University of Toronto, Canada

Lead tutorials for undergraduate students. Developed and marked the midterm exam. Answered any student questions.

Jan – Apr, 2013 *Teaching Assistant*, Nutritional Microbiology (NFS485), Department of Nutritional Sciences, University of Toronto, Canada

Answer student emails and questions. Mark midterm exam, assignment and final exam. Invigilate midterm and final exam.

Curriculum

Sep, 2017 – Dec, 2016 *Theoretical Ecology and Reproducible Quantitative Methods in R (EEB430)*, Department of Ecology and Evolutionary Biology, University of Toronto, Canada

Pilot course to teach computational and quantative analyses in R for ecology and evolutionary biology undergraduate students. Website: https://github.com/uoftcoders/rcourse. DOI: 10.5281/zenodo.1117432.

Mentoring

Undergraduate students

Sep, 2014 – Apr, 2015 Windy Wang. Project: *Validating a bioelectric impedance instrument against the gold standard dual-energy x-ray absorptiometry on measures of adiposity.*

For the Research Projects course (NFS394) in Nutritional Sciences. Co-mentored with Dr. Anthony Hanley. Supervision consisted of helping guide the development of the research question and teaching Windy coding in SAS and using statistical techniques to analyze the data.

Master's students

Sep, 2017 – Jan, 2018 Shahen Yashpal. Project: *Metabolomic Profiling of the DASH Diet: Novel Insights for the Nutritional Epidemiology of Type 2 Diabetes Mellitus*

Master's Student in Nutritional Sciences. Co-mentored with Dr. Anthony Hanley. Trained Shahen in R and statistics, assisted in guiding the research project and analysis.

Affiliations

May, 2015 – present *Instructor and member*, Software Carpentry

Jan, 2016 – Jan, 2018 *Treasurer*, UofT Coders, University of Toronto & Mozilla Science Lab

Responsible for managing the finances, identifying potential sources of funding and applying to them as applicable, reimbursing students for expenses, and buying the snacks for the coding sessions. Other communal duties include maintaining the GitHub repository and dealing with Issues and Pull Requests (via GitHub) that may arise. Website: https://github.com/UofTCoders/council/tree/master/treasurer.

Sep, 2014 – Aug, 2017 *Treasurer*, Nutritional Sciences Graduate Student Association, University of Toronto, Canada

Responsible for the accounting of the NSGSA finances, reimbursing students for expenses, applying for the Graduate Student Union Head Grant to secure funding, and dealing with any finance related issues that may come up.

Employment

Feb, 2018 – present *Postdoctoral researcher*, Department of Public Health, Aarhus University, Aarhus, Denmark

Doing research in diabetes epidemiology, specifically on identifying: patterns of accelerometry-derived physical activity with metabolic status; the metabolic mediation between early childhood biomarkers and adult diabetes status; and, developing a simulation method for incorporating multiple epidemiological results into a single framework. Also, assisting a PhD student's social network analysis on the programming aspects of work. Supervisor: Dr. Daniel Witte

Dec, 2017 – present *Course developer*, DataCamp

Developing an online course on analyzing cohort studies using R. Supervisor:

Sep, 2017 – Jan, 2018 *Postdoctoral fellow*, Department of Nutritional Sciences, University of Toronto, Canada

Finishing up PhD research projects, maintaining and developing a website for the PROMISE data dictionary and description (https://promise-cohort.gitlab.io/PROMISE), and training new graduate students on data analysis using R. Supervisor: Dr. Anthony Hanley

Jan – Jul, 2011 *Research Assistant*, Propel Center for Population Health Impact, University of Waterloo, Canada

Collected air quality samples from Region of Waterloo-owned social housing. Analyzed the air quality data using MS Excel. Produced and tested a survey for Program Training and Consultation Centre on SurveyMonkey. Wrote three reports on data collected from the survey results. Organized and scheduled interviews and data collection dates for a study in the Waterloo Region evaluating the School Food and Beverage Policy PPM150. Managed a team of 4 researchers to collect survey and interview data from primary and secondary schools in the Waterloo Region. Managed the storing and organizing of data collected from the surveys and interviews. Supervisor: Karen Pieters, Dr. Ryan David Kennedy, and Dr. Rhona Hanning

Aug, 2010 *Research Assistant*, Health Psychology Lab, University of Waterloo, Canada

Analyzed data from previous cigarette smoking experiments done in 2008 using MS Excel. Conducted a smoke-free policy scan of YMCAs and YWCAs in Ontario and presented findings to the Tobacco-free Sports and Recreation Community of Practice. Supervisor: Dr. Ryan David Kennedy

Sep – Dec, 2009 *Research Assistant*, Child Health Evaluative Sciences, Hospital for Sick Children, Canada

Analyzed data from the WHO and PLoS Medicine using MS Excel. Developed a method for interpreting fracture data from the National Ambulatory Care Reporting System using statistical probability equations. Supervisor: Dr. Andrew Howard

Jan – Apr, 2009 *Research Assistant*, Toronto Rehabilitation Institute, Canada

Examined balance in clinical populations, including individuals with dementia, using pressure plates. Used EMG electrodes, VICON markers and other monitoring equipment to obverse and collect data from research participants. Analyzed data from various experiments and studies using LabView and MATLAB software. Evaluated the reliability of using Bluetooth technology in the foot switch device (industry gold standard) and analyzed the relationship with an accelerometer. Supervisor: Dr. Avril Mansfield and Dr. William McIlroy

Sep – Dec, 2008 *Research Assistant*, Health Psychology Lab, University of Toronto

Used MS Excel and SPSS 17.0 to organize and analyze data from experiments and prepare the data for presentations at provincial and international tobacco control conferences. Independently conducted a phone survey of Ontario's university campuses' outdoor smoking policies and prepared a poster to be presented at a tobacco control conference. Supervisor: PhD(c) Ryan David Kennedy

May – Aug, 2008 *Project Manager*, Health Psychology Lab, University of Toronto

Managed 3 projects aimed at measuring tobacco smoke pollution in outdoor and quasi-outdoor environments. Organized and analyzed data using MS Excel and SPSS 17.0. Supervised and scheduled a team of 10 Research Assistants. Supervisor: PhD(c) Ryan David Kennedy

Miscellaneous

Programming languages

Competent

- R (ggplot2, knitr, rmarkdown, dplyr, tidyr, devtools, testthat, roxygen2)
- SAS (macros, ODS system)
- LaTeX (beamer, beamerposter)
- Web (HTML, CSS, Jekyll, Github Pages)
- Makefiles
- Bash/Linux OS
- Git
- Pandoc
- Markdown
- YAML
- GraphViz
- Unit testing, code coverage, continuous integration

Familiar

- Python
- SQLite
- Elisp

Statistical techniques

Competent

- Basic statistics (mean, sd, t-test, etc)
- ANOVA, ANCOVA
- Correlation
- Linear regression
- Logistic regression
- Generalized estimating equations
- Principal component analysis
- Latent class mixed models
- Partial least squares regression
- Partial least squares discriminant analysis
- Cross-validation
- Directed Acyclic Graphs (covariate selection)
- Information Criterion (AIC, QIC)
- Resampling (bootstrap)

Familiar

- Linear discriminant analysis
- Mixed effects models
- Factor analysis
- Structural Equation Modeling