Avery I. McIntosh, Ph.D.

Boston, MA USA
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Education

Ph.D. in Biostatistics, Boston University 2017

- Recipient of NIH Interdisciplinary Training for Biostatisticians Grant.
  Thesis: Bayesian Extensions to Generalized Linear Mixed Effects Models for Household Tuberculosis Transmission. `R` package to implement method: `https://CRAN.R-project.org/package=upmfit`

M.A. in Biostatistics, Boston University 2014
B.S. in Mathematics, University of Massachusetts, Amherst 2012
Minor in Economics

- Recipient for NHLBI-funded Summer Institute for Training in Biostatistics (SIBS). Modules in epidemiology, clinical trials, statistical genetics. Analysis in SAS of data from the Framingham Heart Study.
- Dean's List 2009-2011.
- Study Abroad: Uzhgorod National University, Uzhgorod, Ukraine, 2008. Six-credit summer program to study economic and democratic change in Ukraine.

Awards

- Selection for ICI3D Research Exchange Scholars Program: Six week visiting scholarship at SACEMA Institute, Stellenbosch University, Stellenbosch, South Africa (2016)
- Boston University SPH Excellence in Teaching Award (2015 & 2016)
- Boston University Department of Biostatistics Student Paper Competition (2016)
- Selection for travel and presentation to Clinic on the Meaningful Modeling of Epidemiological Data (MMED). Muizenberg, South Africa (2015)
- National Science Foundation Graduate Research Fellowship Honorable Mention (2014): Resampling Methods for Model Selection of PGMs from Clustered Data
- UMass Amherst Economics Achievement Award (2012)
- Wikander Scholarship; Sutton Scholarship; Barber Memorial Scholarship; Community Foundation of Western Mass Scholarship (2008-2012)

Experience

Principal Biostatistician, Novartis Institutes for BioMedical Research 2017-Present

- Design, monitoring, and analysis of phase I and II proof-of-concept clinical trials. Collaboration with external partners, contract research organizations, health authorities; tracking and execution of timeline-sensitive internal and external deliverables; written and oral presentation of strategies and statistical methods for optimal decision making in multiple disease areas. Engagement and consulting in company global health initiatives.

Visiting Scholar, SACEMA Institute, Stellenbosch, South Africa 2016

- Co-authored `R` package *inctools*, methods for assay-based HIV incidence estimation, power and sample size calculation: `https://CRAN.R-project.org/package=inctools`

Research Assistant, Boston University Section of Infectious Diseases 2015-2017

- Performed statistical analysis and management of large clinical datasets to spatially map multidrug-resistant tuberculosis cases in Western Cape, South Africa, under Dr. Karen Jacobson. Manuscript preparation, methods research, conference presentation of results and methods.

Biostatistics Intern, Baim Institute for Clinical Research (formerly Harvard Clinical Research Institute) 2013-2014

- Data management and statistical analyses for three international clinical trials under Dr. Moshe Vardi, Xiaohua Chen. Analysis of effect of proton-pump inhibitors (PPIs) in conjunction with dual anti-platelet therapy on dyspepsia, bleeding and other GI outcomes.

IRB Intern, Boston University Medical Center IRB 2013

- Institutional Review Board (IRB) review of human subjects research protocols for NIH Training Grant under Dr. Louis Vachon. Presented oral and written summaries of study proposals to the board of reviewers.

Genetics Trainee, BU Department of Biostatistics 2012

- NIH Training Grant rotation under Professor Josée Dupuis: Performed Bayesian trans-ethnic meta-analysis and conditional analysis of genetic data to fine-map genetic effects on glycemic traits. Attended Glycemic Working Group meetings, presented findings and methods.

Bioinformatics Trainee, Framingham Heart Study, Boston 2013

- Training Grant rotation on cardiovascular genetics and quality control of sequence data under Dr. Honghuang Lin.

Research Assistant, BU Department of Biostatistics 2013-2014

- Modeling of longevity with the New England Centenarian Study (NECS) and Long Life Family Study (LLFS) under Professor Paola Sebastiani. Used longitudinal, Bayesian, and statistical genetics methods to characterize components of longevity and healthy aging.

Publications

1. A McIntosh, G Doros, E Jones-López, M Gaeddert, H Jenkins, P Marques, J Ellner, R Dietze, L White (2017). Extensions to Bayesian Generalized Linear Mixed Effects Models for Household Tuberculosis Transmission. Statistics in Medicine
2. E Jones-López, L White, C Acuña-Villaorduña, A McIntosh, M Gaeddert, J Ellner, R Dietze (2017). Incident Mycobacterium Tuberculosis Infection in Household Contacts of Infectious Tuberculosis Patients in Brazil. BMC Infectious Diseases
3. M Vardi, D Bhatt, A McIntosh, C Cannon (2015). The Effect of Proton Pump Inhibition on Patient-Reported Severity of Dyspepsia Assessment in Patients Receiving Dual Antiplatelet Therapy: Analysis from the Clopidogrel and the Optimization of Gastrointestinal Events Trial (COGENT). Alimentary Pharmacology & Therapeutics
4. P Sebastiani, S Andersen, A McIntosh, L Nussbaum, M Stevenson, K Salance, T Perls, (2015), Familial Risk for Exceptional Longevity. North American Actuarial Journal
5. F Sun, P Sebastiani, N Schupf, H Bae, S Andersen, AI McIntosh, H Abel, I Elo, T Perls (2014). Extended Maternal Age and Womens Longevity in the Long Life Family Study. Menopause

Publications (other)

1. Avery I. McIntosh. The Jackknife Estimation Method. arXiv.org e-print: `https://arxiv.org/pdf/1606.00497v1.pdf`
2. P Sebastiani, SL Andersen, AI McIntosh, L Nussbaum, MD Stevenson, L Pierce, S Xia, K Salance, T Perls, Contribution of Familial Longevity to Living to 100. In Proceedings of 2014 Living to 100 and Beyond `https://www.soa.org/Library/Monographs/Life/Living-to-100/2014/2014-toc-listing.aspx`

3. P Sebastiani, H Bae, AI McIntosh, S Monti. Bayesian Graphical Models for Gene-Environment Interaction (2013). Proceedings of the JSM.

Reviewing Activities BioMed Central Public Health (BMC), Chapman & Hall/CRC, SAGE, Springer publishing

Certifications Human Subjects Protection Training (formerly known as NIH Training)
Advanced Responsible Conduct of Research (RCR) Training
Massachusetts EMT Certification (Cert. 876838)

Presentations

- Predicted Probability of Success for Trial Interim Decisions: Workflow, Implementation and a Case Study. 7th Annual Novartis US Biostatistics Conference. 2017.
- Community Transmission of Tuberculosis in a Household Contact Study. International Conference on Infectious Disease Dynamics. Sitges, Spain. 2017.
- Mapping the Spatio-Temporal Distribution of Multidrug-Resistant Tuberculosis in Western Cape, South Africa. SACEMA Institute, Stellenbosch, South Africa. 2016.
- Extensions to Bayesian Generalized Linear Mixed Effects Models for Household Tuberculosis Transmission. SACEMA Institute, Stellenbosch, South Africa. 2016.
- Introduction to LaTeX Seminar. BU Student Chapter of the American Statistical Association (ASA), Boston, MA. 2014, 2016.
- Use of MDR-TB Laboratory Data to Create Surveillance Maps in Western Cape Province, South Africa. Boston University Evans Department of Medicine Research Days. Boston, MA. 2016.
- Computational Methods for Data Linkage in Large Electronic Health Records Data. Boston University Data Science Day (BUDS). Boston, MA. 2016.
- Extensions to Bayesian Generalized Linear Mixed Effects Models for Household Tuberculosis Transmission. Clinic on the Meaningful Modeling of Epidemiological Data (MMED). Muizenberg, South Africa. 2015.

Teaching

Instructor, BU Department of Biostatistics, Boston, MA 2014-2017
- Taught graduate course at BU School of Public Health: Introduction to `R`. Lectures on data manipulation, programming, parametric and nonparametric testing, linear and logistic regression, categorical data and survival analysis.

Teaching Assistant, BU Department of Biostatistics, Boston, MA 2013-2015
- Assisted in teaching and grading of graduate course: Statistical Methods in Epidemiology. Assisted in teaching and grading of graduate course: Selected Topics in Outbreak Investigations.

Instructor, Tutor, North Star, Hadley, MA 2009-2011
- Taught and tutored mathematics and preparation for GED and college-level courses.

Teaching Assistant, University of Massachusetts, Amherst 2010
- Held office hours and assisted Calculus I professor with exam proctoring, in-class questions.

Technical Skills Proficient in `R` and RStudio, SAS/IML, Unix/Linux, LaTeX, GitHub, ArcGIS, MS-Word/ Excel/ OneNote. Experience with statistical genetics software: Plink, Merlin, Pedstats, Mantra. Experience with other software: HTML, MS-Access, QGIS

Website: `http://people.bu.edu/aimcinto/`