Brian D. Segal

New York, NY • 202-870-4049 • bsegal@flatiron.com
https://bdsegal.github.io

EDUCATION

Ph.D. in Biostatistics, University of Michigan, Ann Arbor, MI — July 2017

M.S. in Biostatistics, University of Michigan, Ann Arbor, MI — May 2013

B.S. in Biology, Virginia Tech, Blacksburg, VA, *summa cum laude* — May 2007

RESEARCH INTERESTS

Computationally efficient resampling methods; nonparametric and semiparametric regression; longitudinal analysis; applications in medicine, life sciences, sociology, psychology, and the environment

PROFESSIONAL AND RESEARCH EXPERIENCE

- **Flatiron Health**, New York, NY
  Quantitative Scientist — Aug 2017 – present

  Designed and analyzed studies to assess the quality of data abstracted from electronic health records;

- **Google, Advanced Measurement Technologies**, New York, NY
  AMT Ph.D. Intern — May 2016 – Aug 2016

  Analyzed retention curves of TrueView YouTube advertisements with the goal of identifying creative characteristics that help to retain viewer attention

- **University of Michigan, Department of Orthopaedic Surgery**, Ann Arbor, MI
  Research Associate II (temp) — Sep 2015 – Nov 2016

  Analyzed changes in bone strength growth curves over time in the Fels Longitudinal Study

- **University of Michigan, Institute for Social Research**, Ann Arbor, MI
  Graduate Student Research Assistant — Sep 2014 – Aug 2015
  Regents' Fellow — Sep 2013 – Aug 2014

  Modeled changes in health behavior over time in the Americans' Changing Lives study, analyzed patterns of survey consent in the Health and Retirement Study, investigated entity resolution methods to link employer information in the Health and Retirement Study to employer records in the U.S. Census, and helped to design a study of racism-related vigilance

- **University of Michigan, Department of Biostatistics**, Ann Arbor, MI
  Graduate Student Research Assistant — Jan 2012 – Aug 2013

  Managed data and produced graphics for the Cancer Intervention and Surveillance Modeling Network, part of the National Cancer Institute

- **Abt Associates, Environment and Resources Division**, Bethesda, MD
  Analyst Jun 2010 – Mar 2011
  Associate Analyst Jun 2008 – May 2010
  Research Assistant Jul 2007 – May 2008

  Through contracts with the United States Environmental Protection Agency (US EPA), conducted life cycle assessments of building materials and consumer products, authored market analyses of unregulated chemicals (internal reports), evaluated the benefits of novel chemical technologies for the Green Chemistry Challenge, and informed the general public about environmental health hazards and US EPA regulations

- **Virginia Tech, Department of Civil and Environmental Engineering**, Blacksburg, VA
  Research Assistant Aug 2006 – May 2007

  Helped to design and carry out experiments to study the behavior of ammonia-oxidizing bacteria, with the goal of improving the efficiency of wastewater treatment

- **Environmental Protection Agency, Office of Pesticide Programs, Communication Services Branch**, Crystal City, VA
  Intern May 2006 – Aug 2006

  Communicated science and policy issues to the general public

- **Virginia Tech, Department of Biological Sciences**, Blacksburg, VA
  Research Assistant May 2005 – Aug 2005

  Studied the adhesive properties of viscous capture threads spun by spiders from the Araneoidea clade

PUBLICATIONS

- **Segal, B. D.**, Braun, T., Elliott, M. R. and Jiang, H. (2017). Fast approximation of small p-values in permutation tests by partitioning the permutations. Biometrics. doi:10.1111/biom.12731.

Submitted

- **Segal, B. D.**, Elliott M., Braun T., and Jiang, H. P-splines with an ℓ_1 penalty for repeated measures. arxiv:1707.08933. (Revise and resubmit).
- Burgard, S., Lin, K., and **Segal, B. D.** Clustering, stability, and change in tobacco and alcohol use and BMI among older U.S. adults. (Revise and resubmit)
- **Segal, B. D.**, Braun, T., Gonzalez, R., and Elliott, M. R. Tests of matrix structure for construct validation.

In preparation

- **Segal, B. D.** Exceedance probability for parameter estimates.

PRESENTATIONS AND POSTERS

- Invited talk: "P-splines with an ℓ_1 penalty for repeated measures." Statistical learning and data science/nonparametric statistics conference, June 2018.
- Contributed poster: "Tests of matrix structure for construct validation." Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS), Mar 2017 (won best poster from Biostatistics department).
- Contributed poster: "P-splines with an ℓ_1 penalty for repeated measures." ENAR, Mar 2017.
- Contributed talk (winner of travel award): "Fast approximation of small p-values in permutation tests by partitioning the permutation space." JSM Biometrics section student paper awards session, Aug 2016.
- Contributed poster: "Fast approximation of small p-values in permutation tests by partitioning the permutation space." ENAR, Mar 2016.

TECHNICAL REPORTS

- Amarakoon, S., Smith, J., **Segal, B.** Lithium-ion batteries and nanotechnology for electric vehicles: life cycle assessment study. U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxics, Design for the Environment Program. EPA 744-R-08-001, Apr 2012.
- Socolof, M., Amarakoon, S., Smith, J., **Segal, B.** Life-cycle assessment of plenum space communication cable. The Society of the Plastics Industry, Oct 2009.
- Greco, S., Smith, J., **Segal, B.**, Post, E., Lynch, M., Hattis, D. Evaluating methods for quantifying human noncancer health risks: case study application, draft report. US EPA, Mar 2009.
- Greco, S., Acquaye, A., Peak, K., **Segal, B.**, Rast, M. Framework for estimating costs and benefits associated with changes in the reference dose at federal facility hazardous waste sites. US EPA, Oct 2008.
- **Segal, B.** Biofilm forming properties of the ammonia oxidizing bacteria Nitrosomonas europaea. Undergraduate research project. Department of Civil and Environmental Engineering, Virginia Tech, May 2007.

SOFTWARE

- `fastPerm`: R package for quickly approximating small p-values in permutation tests. Available at https://github.com/bdsegal/fastPerm.

TEACHING EXPERIENCE

- Grader: Introduction to Public Health (PUBHLTH 610), University of Michigan, Fall 2014
- Graduate Student Instructor: Introduction to Biostatistics (BIOSTAT 503), University of Michigan, Fall 2011

HONORS AND AWARDS

- Best poster from Biostatistics departments at MSSISS, "Tests of matrix structure for construct validation" 2017
- Rackham Predoctoral Fellowship 2016
- Travel Award for JSM, Biometrics Section, "Fast approximation of small p-values in permutation tests by partitioning the permutation space" 2016
- Rackham Graduate Student Research Grant 2014
- Regents' Fellowship 2013
- Phi Beta Kappa 2005
- Virginia Tech Paul Dirksen Smith Cycling Scholarship 2004

PROFESSIONAL INVOLVEMENT

- Reviewer, Biometrics 2018
- Member, Eastern North American Region International Biometric Society 2015 – present
- Volunteer, Statisticians Without Borders, response to Ebola outbreak Oct 2014
- Member, American Statistical Association 2012 – present
- Committee Member, Abt Associates Community Engagement Program 2009 – 2010

COMMUNITY INVOLVEMENT

- Volunteer Juggling Instructor, Zip Zap Circus, Washington, DC Apr 2011 – Aug 2011
- Volunteer, Al-Rowwad Children's Art Center, Bethlehem, West Bank Jul 2010
- Participant, Service learning project to help recent immigrants adjust to life in the United States, Roanoke, VA Jan 2006 – May 2006
- Volunteer English Teacher, Salomon Kim School, Quito, Ecuador Sep 2005 – Dec 2005
- President, Virginia Tech Cycling Club, Blacksburg, VA Aug 2004 – May 2005
- Sponsorship Officer, Virginia Tech Cycling Club, Blacksburg, VA Aug 2003 – May 2004

COMPUTER SKILLS

- Proficient: R, SAS, LaTeX, GaBi life-cycle assessment software
- Familiar: Python, C, Unix, SQL, Mplus, Cytoscape, Git/GitHub

REFERENCES

Michael Elliott, Ph.D.
Professor, Biostatistics
Research Professor, Institute for Social Research
University of Michigan
734-647-5160
mrelliot@umich.edu

Thomas Braun, Ph.D.
Professor, Biostatistics
University of Michigan
734-936-9844
tombraun@umich.edu

Hui Jiang, Ph.D.
Assistant Professor, Biostatistics
University of Michigan
734-764-6742
jianghui@umich.edu