CHARLES J. WOLOCK

Research interests: Nonparametric and semiparametric statistics, survival analysis, missing data, statistical genetics

CONTACT

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EDUCATION

University of Washington, Seattle, WA *September 2018 - present*
Ph.D., Biostatistics

Harvard University *September 2011 - May 2015*
B.A., Organismic and Evolutionary Biology
Language citation, Spanish
Summa cum laude, Highest Honors
Thesis: Exploring the functional diversity of microbial communities within carnivorous pitcher plants
Advisors: Anne Pringle, Ph.D. and Naomi Pierce, Ph.D.

RESEARCH EXPERIENCE

Research Assistant
University of Washington, Department of Biostatistics
Supervisor: Bruce S. Weir, Ph.D. *September 2018 - September 2020*

Research Staff Associate
Columbia University, Institute for Genomic Medicine
Supervisors: Andrew S. Allen, Ph.D. and David B. Goldstein, Ph.D. *November 2016 - July 2018*

Undergraduate Researcher
Harvard University, Department of Organismic and Evolutionary Biology
Supervisors: Anne Pringle, Ph.D. and Naomi Pierce, Ph.D. *September 2012 - May 2015*

Harvard University, Department of Earth and Planetary Sciences
Supervisor: Erik Sperling, Ph.D. *September 2012 - December 2013*

Summer Scholar
Stowers Institute for Medical Research
Supervisor: Matthew Gibson, Ph.D. *June 2013 - August 2013*

TEACHING EXPERIENCE

Teaching Assistant
University of Washington
BIOST 511: Medical Biometry I (Lead TA) *September 2020 - December 2020*

Student Facilitator
Harvard University
Life Sciences 1a: An Integrated Introduction to the Life Sciences *September 2014 - December 2014*

Tutor
University of Washington
BIOST 523: Statistical Inference for Biometry II *February 2021 - present*

AWARDS, HONORS, FELLOWSHIPS

NSF Graduate Research Fellowship *September 2020 - present*

University of Washington
Donovan J. Thompson Award *October 2020*
Best combined performance on the PhD Applied and Theory qualifying exams
NIH T32 Statistical Genetics Training Grant *September 2018 - September 2020*

Harvard University
Phi Beta Kappa *May 2015*
Herchel Smith Research Fellowship *June 2014 - August 2014*
Microbial Sciences Initiative Research Fellowship *June 2014 - August 2014*
John Harvard Scholar *May 2013*
National Merit Scholarship *September 2011*

PROFESSIONAL SERVICE

Manuscript Reviewer
Bayesian Analysis

UNIVERSITY SERVICE

University of Washington, Department of Biostatistics
Student Seminar Coordinator *September 2020 - present*
Education Policy and Teaching Evaluation Committee *September 2020 - present*
Biostatistics Activities and Events Squad *September 2019 - present*
Equity, Diversity, and Inclusion Committee *September 2019 - present*
Peer mentor *June 2019 - present*
Student-Faculty-Staff Relations Committee *September 2019 - September 2020*

REFEREED JOURNAL PUBLICATIONS

1. Sperling E.A., **Wolock C.J.**, Morgan A.S., Gill B.C., Kunzmann M., Halverson G.P., Macdonald F.A., Knoll A.H., Johnston D.T. Statistical analysis of iron geochemical data suggests limited late Proterozoic oxygenation. *Nature* 523: 451–454, 2015.

2. Raghavan N.S., Brickman A.M., Andrew H., Manly J.J., Schupf N., Lantigua R., The Alzheimer's Disease Sequencing Project, **Wolock C.J.**, Kamalakaran S., Petrovski S., Tosto G., Vardarajan B.N., Goldstein D.B., Mayeux R. Whole exome sequencing in 20,197 individuals identifies ultra-rare SORL1 loss-of-function variants in late-onset Alzheimer's disease. *Annals of Clinical and Translational Neurology* 5(7): 832-842, 2018.

3. Bittleston L.S., **Wolock C.J.**, Bakhtiar E.Y., Chan X.Y., Chan K.G., Pierce N.E., Pringle A. Convergence between the microcosms of Southeast Asian and North American pitcher plants. *eLife* 7, 2018.

4. Hayeck T.J., Stong N., **Wolock C.J.**, Copeland B., Kamalakaran S., Goldstein D.B., Allen A.S. Improved Pathogenic Variant Localization using a Hierarchical Model of Sub-regional Intolerance. *American Journal of Human Genetics* 104(2): 299-309, 2019.

5. **Wolock C.J.**, Stong N., Ma F., Nagasaki T., Lee W., Tsang S.H., Kamalakaran S., Goldstein D.B., Allikmets R. A case-control collapsing analysis identifies retinal dystrophy genes associated with ophthalmic disease in patients with no pathogenic *ABCA4* mutations. *Genetics in Medicine* 21: 2336-2344, 2019.

6. Gelfman S., Dugger S.A., Moreno C.A.M., Ren Z., **Wolock C.J.**, Shneider N.A., Phatnani H., Cirulli E.T., Lasseigne B.N., Harris T., Maniatis T., Rouleau G.A., Brown R.H., Gitler A.D., Myers R.M., Petrovski S., Allen A.S., Harms M.B., Goldstein D.B. A new approach for rare variation collapsing on functional protein domains implicates specific genic regions in ALS. *Genome Research* 29(5): 809-818, 2019.

7. Cameron-Christie S., **Wolock C.J.**, Groopman E., Petrovski S., Kamalakaran S., Povysil G., Zhang M., Fleckner J., March R.E., Gelfman S., Marasa M., Li Y., Sanna-Cherchi S., Kiryluk K., Allen A.S., Fellström B., Haefliger C., Platt A., Goldstein D.B., Gharavi A. Exome-based rare-variant analyses in chronic kidney disease. *Journal of the American Society of Nephrology* 30(6): 1109-1122, 2019.

8. Ma C.J., **Wolock C.J.**, Stong N., Nagasaki T., Lee W., Goldstein D.B., Allikmets R. Case-control collapsing analysis identifies genes mimicking Stargardt/ABCA4 disease. *Investigative Ophthalmology & Visual Science* 60(9): 2935-2935, 2019.

9. Eade K, Gantner M.L., Hostyk J.A., Nagasaki T., Giles S., Harkins-Perry S., Fallon R., Baldini M., Scheppke L., Dorrell M.I., Cai C., Baugh E.H., **Wolock, C.J.**, Wallace M., Berlow R.B., Goldstein D.B., Metallo C.M., Friedlander M., Allikmets R. Serine biosynthesis defect due to haploinsufficiency of phosphoglycerate dehydrogenase (PHDGH) causes retinal disease. *Nature Metabolism* 3(3): 366-377, 2021.

SUBMITTED MANUSCRIPTS

1. Wasser S.K., **Wolock C.J.**, Brown J.E., Morris C., Horowitz R., Wong A., Otiende M.Y., Weir B.S. Familial matching of tusks delineates the size and connectivity of transnational criminal organization. Under revision.

2. Bansal A., Heagerty P.J., Inoue L.Y.T., Veenstra D.L., **Wolock C.J.**, Basu A. A Value of Information Framework for Personalizing the Timing of Surveillance Testing. Under revision.

POSTER PRESENTATIONS

1. **Wolock C.J.**, Bittleston L.S., Pierce N.E., Pringle A. Nitrogenase genes in carnivorous plant microbial communities. Microbial Sciences Initiative Research Symposium. Cambridge, MA. September 2014.

2. **Wolock C.J.**, Bittleston L.S., Pierce N.E., Pringle A. Carnivorous pitchers of *Nepenthes* with less acidic fluid house nitrogen-fixing bacteria. Harvard University Organismic and Evolutionary Biology Thesis Symposium. Cambridge, MA. May 2015.

3. **Wolock C.J.**, Kamalakaran S., Goldstein D.B., Allen A.S. A test for balanced coverage across cases and controls as a qualifying criterion in collapsing analysis. Human Genetics in NYC Conference. New York, NY. September 2017.

SKILLS

Computer	Python, R, Bash, SQL, LaTeX
Bioinformatics tools	samtools, bedtools, bcftools, vcftools, Picard tools, BWA, BBMap
Languages	English (native), Spanish (proficient)