

# CHARLES J. WOLOCK

**Research interests:** Decision theory, missing data, statistical genetics, longitudinal data

## CONTACT

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| <b>Address</b>          | Department of Biostatistics, Box 357232, Seattle, WA 98195 |
| <b>Email</b>            | cwolock@uw.edu   |
| <b>Personal webpage</b> | cwolock.github.io  |
| <b>Student webpage</b>  | biostat.washington.edu/people/charles-wolock               |

## EDUCATION

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| <b>University of Washington, Seattle, WA</b><br>Ph.D., Biostatistics | <i>September 2018 - present</i> |
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| <b>Harvard University</b><br>B.A., Organismic and Evolutionary Biology<br>Language citation, Spanish<br><i>Summa cum laude</i> , Highest Honors<br>Thesis: Exploring the functional diversity of microbial communities within carnivorous pitcher plants<br>Advisors: Anne Pringle, Ph.D. and Naomi Pierce, Ph.D. | <i>September 2011 - May 2015</i> |
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## RESEARCH EXPERIENCE

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| <b>Research Assistant</b><br>University of Washington, Department of Biostatistics<br>Supervisor: Bruce S. Weir, Ph.D. | <i>September 2018 - September 2020</i> |
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| <b>Research Staff Associate</b><br>Columbia University, Institute for Genomic Medicine<br>Supervisors: Andrew S. Allen, Ph.D. and David B. Goldstein, Ph.D. | <i>November 2016 - July 2018</i> |
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| <b>Undergraduate Researcher</b><br>Harvard University, Department of Organismic and Evolutionary Biology<br>Supervisors: Anne Pringle, Ph.D. and Naomi Pierce, Ph.D. | <i>September 2012 - May 2015</i> |
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| Harvard University, Department of Earth and Planetary Sciences<br>Supervisor: Erik Sperling, Ph.D. | <i>September 2012 - December 2013</i> |
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| <b>Summer Scholar</b><br>Stowers Institute for Medical Research<br>Supervisor: Matthew Gibson, Ph.D. | <i>June 2013 - August 2013</i> |
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## TEACHING EXPERIENCE

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| <b>Teaching Assistant</b><br>University of Washington<br>BIOST 511: Medical Biometry I (Lead TA) | <i>September 2020 - December 2020</i> |
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| <b>Student Facilitator</b><br>Harvard University<br>Life Sciences 1a: An Integrated Introduction to the Life Sciences | <i>September 2014 - December 2014</i> |
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**Tutor**

University of Washington  
 BIOST 523: Statistical Inference for Biometry II

*February 2021 - present*

**AWARDS, HONORS, FELLOWSHIPS**

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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**

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**Manuscript Reviewer**

Bayesian Analysis

**UNIVERSITY SERVICE**

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**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**

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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., Schepcke 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 (PHDH) causes retinal disease. To appear in *Nature Metabolism*.

## SUBMITTED MANUSCRIPTS

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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, *Nature Human Behavior*.

## POSTER PRESENTATIONS

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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

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| <b>Computer</b>             | Python, R, Bash, SQL, L <sup>A</sup> T <sub>E</sub> X           |
| <b>Bioinformatics tools</b> | samtools, bedtools, bcftools, vcftools, Picard tools, BWA, BMAP |
| <b>Languages</b>            | English (native), Spanish (proficient)                          |