Kristin M. Lee

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Professional Experience

2018–present **Postdoctoral researcher**, *Columbia University*.
- Analyzing large genomic datasets across many species to study the evolution of color vision.

2013–2018 **Graduate student researcher**, *University of California, Davis*.
- Developed novel statistical models to understand population genetic and genomic data.
- Built publicly-available statistical inference pipelines in R.
- Collaborated with other researchers, across disciplines and universities, to analyze and explore their data.
- Presented at invited international conferences and seminars; received recognition for best student talks.

2017–2018 **R programming instructor**, *STEMinist Data Science Bootcamp, UC Berkeley and UC Davis*.
- Co-created and taught multiple, intensive R programming workshops for undergraduate and graduate students.
- Designed lecture material and hands-on exercises including final-day challenge projects at multiple skill levels.

Education

2013–2018 **University of California, Davis**, *Population Biology*, PhD.
- Dissertation title: Detecting signatures of convergent adaptation in population genomic data

2008–2013 **University of Wisconsin − Madison**, *Biology and Mathematics*, BS.

Selected Projects

DMC **Distinguishing Modes of Convergence**.
- Created a model-based, composite likelihood approach to detect signals of convergent adaptation and discern between the processes that generate this pattern in population genetic data.
- Wrote a highly-flexible statistical inference pipeline in R used by other scientists in the field.
- Simulated data to test robustness of methods and perform parametric bootstrapping for model comparison and obtain confidence intervals for parameter estimation.
- Published work in GENETICS, where is was showcased as one of the best articles published in 2017.

MyAdIDAS **DMC Modified for Young Adaptive Introgression Distinguished from Allele Standing**.
- Collaborated with other researchers to extend my inference framework for their data scenario.
- Published work in Science, a top academic journal selective for cutting-edge research.

runDMC **Genome-wide scan version of DMC**.
- Extended and modified previous framework to efficiently run on large, multi-population genomic datasets.
- Created visualization to easily recognize important patterns on this large scale.

Leadership

2019–present **Career Development Subcommittee member**, *Genetics Society of America (GSA)*.
- Developing content for early-career scientists by building relationships with professionals across sectors.

2016–2018 **After School Coding Club instructor**, *Martin Luther King Jr. K-8, Sacramento, CA*.
- Taught weekly coding activities to middle schoolers to teach fundamentals and generate excitement for STEM.

Relevant Courses

Statistics Probability Theory, Statistical Computing, Statistical Methods for Bioscience I and II, Statistical Rethinking: A Bayesian Course with Examples in R and Stan, Stochastic Methods

Comp. Sci. Introduction to Programming, Introduction to Data Structures, Introduction to Bioinformatics

Technical Skills: R, SQL, Java, MATLAB, LaTeX

Awards

2014 – 2018   **Graduate Research Fellowship**, *National Science Foundation*, ($150,000).

2016   **Fitch Award Finalist**, *Society for Molecular Biology and Evolution*, ($2,000).

2016   **Hamilton Award Finalist**, *Society for the Study of Evolution*, ($500).

2013   **Population Biology Graduate Group Fellowship**, *UC Davis*, ($30,000).

2013   **Hilldale Undergraduate Research Fellowship**, *UW Madison*, ($4,000).

2012   **Zoology Undergraduate Research Grant**, *UW Madison*, ($1,500).

Publications

1. **Lee KM**, Coop G, 2019. Population genomics perspectives on convergence. *Philosophical Transactions B* (in press; out June 11, 2019). Link to preprint on bioRχiv.

2. Oziolor EM, Reid NM, Yair S, **Lee KM**, VerPloeg S, Bruns PC, Shaw JR, Whitehead A, Matson CW, 2019. Adaptive introgression enables evolutionary rescue from extreme environmental pollution. *Science*, 364(6439), 455-457. Link.

3. **Lee KM**, Coop G, 2017. Distinguishing among modes of convergent adaptation using population genomic data. *GENETICS*, 207: 1591-1619. Link.

4. Lee CE, Remfert JL, Opgenorth T, **Lee KM**, Stanford E, Connolly JW, Kim J, Tomke S, 2017. Evolutionary responses to crude oil from the Deepwater Horizon oil spill by the copepod *Eurytemora affinis*. *Evolutionary Applications*, 10: 813-828. Link.

Presentations

Invited Seminars

2018   Temple University Institute for Genomics and Evolutionary Medicine, *Philadelphia, PA*.

2018   Stanford University Center for Computational, Evolutionary and Human Genomics, *Palo Alto, CA*.

2017   Duke University Population Biology, *Durham, NC*.

2016   UC Berkeley Center for Theoretical Evolutionary Genomics, *Berkeley, CA*.

Invited Conference Oral Presentations

2017   Society of Systematic Biologists (Evolution meeting), *Portland, OR*.

2016   Society for the Molecular Biology and Evolution, *Gold Coast, Queensland, Australia*.

2016   Society for Study of Evolution (Evolution meeting), *Austin, TX*.

Contributed Conference Oral Presentations and Seminars

2018   Columbia University Evolution Supergroup, *New York, NY*.

2018   Genetics Society of America (Population, Evolutionary and Quantitative Genetics), *Madison, WI*.

2017   Society for the Molecular Biology and Evolution, *Austin, TX*.

2016   Bay Area Population Genomics, *Berkeley, CA*.

2015   UC Davis Center for Population Biology, *Davis, CA*.

2015   Society for the Molecular Biology and Evolution, *Vienna, Austria*.

2013   UW-Madison Undergraduate Research Symposium, *Madison, WI*.