

Erin Calfee

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erincalfee.rbind.io

Education

PhD in Population Biology, University of California, Davis
BA in History, Brown University, *magna cum laude*

Expected 05/2021
05/2011

Skills

Statistics: R programming, graduate coursework in Bayesian statistics
Bioinformatics: Whole genome sequence analysis, git, bash, python, snakemake
Lab: PCR, DNA extraction, quantification & library preparation
Languages: English (native), Spanish (proficient), German (intermediate)

Research

Graduate Researcher, UC Davis PhD Program in Population Biology 09/2015 – present
Research advisor: Dr. Graham Coop

- Developing novel statistical methods to detect selection in admixed populations using whole genome sequence data
- Applying new methods to identify adaptively introgressed loci in highland maize
- Conducted a comparative study of selection in the *scutellata*-European hybrid honey bee invasion in North and South America; wrote and received ~\$10k external grant and initiated a collaboration in Argentina to pursue this research
- Presented research in scientific talks at four international conferences

Data Science Intern, Bayer Crop Science, Woodland, CA 09/2019 – 12/2019
Supervisor: Dr. Sean MacEachern, Statistics and Digital Innovations Team

- Analyzed pedigree and genomic data to estimate the heritability of a lab trait and evaluate potential genetic markers
- Designed a python pipeline to automate trait measurements for watermelon using computer vision and machine learning techniques
- Communicated findings to leadership, plant breeding, wet lab, and statistics teams

Junior Research Specialist (Full-time), UC Davis MIND Institute 10/2012 – 07/2015
PI: Dr. Julie Schweitzer, ADHD Research Program

- Conducted human-subject research, including running fMRI brain scans, administering IQ tests and structured interviews, and analyzing preliminary data
- Assisted with grant writing and Institutional Review Board (IRB) approvals
- Managed 3-5 undergraduate research assistants at a time

Publications

Calfee E, Agra MN, Palacio MA, Ramírez SR, Coop G (2020) Selection and hybridization shaped the rapid spread of African honey bee ancestry in the Americas. *PLoS Genetics* 16(10): e1009038.
<https://doi.org/10.1371/journal.pgen.1009038>

Data Visualization and R

Team Leader, CA 2020 Election Data Challenge, UC Davis 10/2020

- Won campus-wide data science competition
- Created interactive RShiny visualization using public data relevant to California's 2020 election (Prop 20): https://erincalfee.rbind.io/project/miss_demeanors

R Workshop Instructor and Course Developer 05/2017 – 08/2018

- Co-developed a three day course in the statistical programming language R
- Taught course four times for 'STEMinist' (UC Berkeley) and 'GAP' (UC Davis) programs, providing free data science workshops for women and students of color

Teaching

Graduate Teaching Assistant, UC Davis 09/2016 – 12/2018

- Taught undergraduate courses in population and quantitative genetics (EVE102), evolution (EVE100), and genetics (BIS101)
- Planned lessons and lead weekly discussion sections, developed R coding assignments, and graded homework and exams for 35-100 students per course
- Achieved consistently > 4.5/5 instructor evaluations from student reviews

Instructor and Workshop Developer, UC Davis School of Medicine 05/2013
Medicine and Improv: A communication skills workshop for medical students

GRE & GMAT Teacher, Kaplan Test Prep 09/2011 – 11/2012

- Achieved > 90% excellent student reviews

Research Grants

North American Pollinator Protection Campaign (NAPPC) Honey Bee Health Improvement Project Grant, awarded to Erin Calfee and CO-PI Dr. Santiago Ramirez for grant "Identifying key loci for honey bee stock improvement using genomic signatures of selection in Africanized bees," 2018-2019 (\$9,963).
Daphne and Ted Pengelley Award in Evolutionary Biology from the Center for Population Biology, UC Davis, for the research proposal "How selection and hybridization shape the Africanized honey bee invasion," 2017-2018 (\$2000).

Fellowships and Honors

Loomis Graduate Fellowship in Agronomy, UC Davis 2019
Population Biology Graduate Student Fellowship, UC Davis 2015 – 2016
Undergraduate Teaching and Research Award (UTRA), Brown University 2010

Mentorship

Mentor for 'Evolution and Ecology Grad Preview', student-led diversity initiative 2020
Mentor for two UC Davis undergraduate researchers in evolution 2018 – 2019
STEM Mentor, UC Davis Women's Research and Resource Center 2015 – 2016