JENNIFER BLANC

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EDUCATION

University of Chicago September 2018 - November 2024
PhD in Human Genetics
- NHGRI F31 Ruth L. Kirschstein Predoctoral Individual National Research Service Award

University of California, Davis October 2014 - June 2018
B.S in Genetics and Genomics, minor in Statistics
- Graduated with highest honors (top 2%)
- Top Senior in Genetics and Genomics

RESEARCH EXPERIENCE

Postdoctoral Scholar December 2024 - Present
Department of Human Genetics, University of Chicago
- Continued development of theory, methods, and data analysis to address population stratification in polygenic score analyses

PhD Candidate September 2018 - November 2024
Department of Human Genetics, University of Chicago
- Studied human adaptation and the evolution of complex traits in Dr. Jeremy Berg's lab
- Developed novel statistical approach to control for confounding in polygenic score analyses

Student Researcher September 2017 - August 2018
Department of Evolution and Ecology, University of California, Davis
- Completed undergraduate honors thesis in the population genetics lab of Dr. Graham Coop
- Worked with Dr. Emily Josephs on detecting local adaptation in Maize using gene expression data

Laboratory Intern June 2017 - August 2017
Icahn School of Medicine at Mount Sinai
- Summer Undergraduate Research Program intern for Dr. Eimear Kenny
- Studied the demographic history of Oceanic populations using identity by descent

Student Researcher April 2015 - June 2017
Department of Evolution and Ecology, University of California, Davis
- Lead independent project mapping the genetic basis of cytoplasmic incompatibility in *D. melanogaster* in Dr. Michael Turelli's lab

High School Intern April 2015 - June 2015
Department of Plant Sciences, University of California, Davis
- Learned basic laboratory techniques including PCR and bacterial cloning
- Assisted on a project to sequence the genes involved in the first step of a hydrolysable tannin pathway in the lab of Dr. Li Tian

TECHNICAL SKILLS

Programming	R (including tidyverse and base R), Python, shell scripting
Data Analysis	Snakemake, Plink, GCTA, SAMtools, GATK
Laboratory	PCR, DNA Extraction/Purification, qPCR, Inverse PCR, Bacterial Cloning, Gel Electrophoresis, *Drosophila* stock keeping and crossing experiments

PUBLICATIONS

Blanc, Jennifer, and Jeremy J. Berg. "Testing for differences in polygenic scores in the presence of confounding." bioRxiv (2023): 2023-03 https://doi.org/10.1101/2023.03.12.532301

Blanc, Jennifer and Jeremy J. Berg. 2020. "Polygenic Scores: How Well Can We Separate Genetics from the Environment?" eLife 9: e64948. https://doi.org/10.7554/eLife.64948

Blanc, Jennifer, Karl AG Kremling, Edward Buckler, and Emily B. Josephs. "Local adaptation contributes to gene expression divergence in maize." G3 11, no. 2 (2021): jkab004. https://doi.org/10.1093/g3journal/jkab004

TEACHING EXPERIENCE

Course Instructor

QBio: Quantitative Analysis Bootcamp - Population Genetics Workshop September 2022
Taught two sections of a population genetics workshop to first-year graduate students as part of a week long bootcamp focused on establishing familiarity with computational biology and analysis in R.

Citizen Science at Bard College January 2022 - February 2022
Taught 3 week intensive, project-based undergraduate course on scientific literacy and data science.

Teaching Assistant

Teaching Assistant: Human Variation and Disease January 2022 - March 2022
University of Chicago Graduate Course

Teaching Assistant: QBio (Quantitative Analysis Bootcamp) September 2021
University of Chicago Graduate Student Bootcamp

Teaching Assistant: Human Genetics 1 September 2020 - December 2020
University of Chicago Graduate Course

Teaching Assistant: Human Variation and Disease March 2020 - June 2020
University of Chicago Graduate Course
Awarded Divisional Teaching Assistantship Award in the Biological Sciences

Summer Abroad Tutor: Intro to Genes and Gene Expression August 2016 - September 2016
UC Davis Undergraduate Course

PRESENTATIONS

Invited Speaker

Adaptation in Structured Populations June 2023
Department of Human Genetics the Quantitative Life Sciences Program at McGill University (virtual)
Testing for differences in polygenic scores in the presence of confounding

DISCOVER: What you can do with a career in natural or social sciences April 2023
Saint Norbert's College
Evolution of Complex Traits

Find Yourself: Tracing Human Origins Using DNA April 2021
New York Academy of Sciences course for high school students (virtual)
Guaranteeing unbiasedness in selection tests based on polygenic scores

Conference Oral Presentations

American Society of Human Genetics Annual Meeting November 2023
Testing for differences in polygenic scores in the presence of confounding

Probabilistic Modeling in Genomics March 2023
Analyzing the role of population structure in polygenic score analyses

Population, Evolutionary, and Quantitative Genetics Conference June 2022
Guaranteeing unbiasedness in selection tests based on polygenic scores

Probabilistic Modeling in Genomics March 2022
Guaranteeing unbiasedness in selection tests based on polygenic scores

Midwest Population Genetics VII August 2021
Guaranteeing unbiasedness in selection tests based on polygenic scores

UC Davis Undergraduate Research Conference April 2018
Detecting Local adaptation in gene expression in maize

Conference Poster Presentations

American Society of Human Genetics Annual Meeting November 2024
Robust tests for association between polygenic scores and ancestry

The Allied Genetics Conference: PEQG March 2024
Testing for differences in polygenic scores in the presence of confounding

Midwest Population Genetics VIII August 2023
Testing for differences in polygenic scores in the presence of confounding

The Mitchell Conference on Human Genetics May 2023
Testing for differences in polygenic scores in the presence of confounding

American Society of Human Genetics Annual Meeting October 2022
Guaranteeing unbiasedness in selection tests based on polygenic scores

American Society of Human Genetics Annual Meeting October 2021
Guaranteeing unbiasedness in selection tests based on polygenic scores

Probabilistic Modeling in Genomics April 2021
Guaranteeing unbiasedness in tests of polygenic adaptation
Reviewer's Choice selected abstract (top 10%)

American Society of Human Genetics Annual Meeting October 2020
Using derived allele status to detect and correct for stratification in GWAS summary statistics

Midwest Population Genetics VI August 2019
Detecting local adaptation in gene expression in maize
Winner of best graduate student poster

Summer Undergraduate Research Program Symposium (Mount Sinai) August 2017
Reconstructing the population history of Oceania using identity by descent

UC Davis Undergraduate Research Conference April 2016
Mapping genes controlling the level of cytoplasmic incompatibility in *Drosophila melanogaster*

ACADEMIC ACHIEVEMENTS

Awarded F31 Ruth L. Kirschstein Predoctoral Individual National Research Service Award

Semi-finalist for Provosts Office Dissertation Completion Fellowship (2023-2024)

Won Divisional Teaching Assistantship Award in the Biological Sciences Division 2019-2020

Graduated UC Davis with Highest Honors (top 2% of graduating class)

Won Outstanding Senior in Genetics and Genomics (2018). Nominated by Dr. Michael Turelli and given to the top student in each major for academic and research achievement.

Graduated from the UC Davis Honors Program and completed Honors thesis.

UC Davis Reagents Scholar (top 4% of applicants)

PROFESSIONAL AFFILIATIONS

Genetics Society of America (GSA) 2022-Present

American Society of Human Genetics (ASHG) 2021-Present

OUTREACH AND SERVICE

Department of Human Genetics Diversity, Equity, and Inclusion Committee Member 2023-Present

UC COMBO Communication and Education Chair 2022 - Present
- In charge of organizing coding workshops and marketing for UC COMBO (UChicago Computational Biology Outreach)

Program in Computational Biology Snakemake Tutorial Development 2024
- Designed an introduction to the workflow management system Snakemake

Student Representative, Human Genetics Graduate Program 2019-2021
- Organized graduate recruitment events, the annual Molecular Biosciences retreat, and events for Human Genetics graduate students

Software Carpentry Instructor 2019 - 2021
- Led a virtual Introductory to R and Unix workshop for graduate students, postdocs, and staff in the BSD community

History of Race and Genetics Reading Group 2020
- Participated in and wrote reflections for a reading group on the history of race and genetics, helped design the website to publish materials

Computational STEM Lab Instructor 2019-2020
- Helped design and led in person and virtual workshops on computational biology in Python for Chicago area high school and middle school age students

Graduate student tutor 2019-2021
- HGEN 47400: Introduction to Probability and Statistics for Geneticists
- HGEN 47100: Statistical Genetics
- ECEV 35600: Population Genetics

Volunteer in Chicago Public Schools 2019

Volunteer at Explorit Science Center 2009-2018