

JAZLYN A. MOONEY

University of Southern California
Department of Quantitative and Computational Biology
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<https://mooney-lab.github.io/>

Academic Appointments

University of Southern California
Gabilan Assistant Professor in Quantitative and Computational Biology (2022–Present)

Education

Stanford University — Postdoctoral Scholar in Biology (2020–2022)
Advisor: Noah Rosenberg

University of California, Los Angeles — Ph.D. in Genetics and Genomics (2015–2020)
Thesis: Understanding the Persistence of Deleterious Variation Across Taxa
Advisor: Kirk Lohmueller

University of New Mexico — B.S. with Honors in Anthropology and Biology, Summa Cum Laude (2010–2014)
Honors Thesis: Inferring Evolutionary History from Ancestry Informative Markers (AIMs)
Advisor: Jeffrey Long

Honors and Awards

USC Women in Science and Engineering Gabilan Assistant Professorship (2022)
NSF Postdoctoral Research Fellow in Biology (2020)
NSF Graduate Research Fellowship (2015)
UNM Presidential Fellowship (2010)

Research Funding

Submitted: NIH R35 ESI-MIRA (2022 & 2023); NIH R25 Genome Research Experiences to Attract Talented Undergraduates into Genomic Fields to Enhance Diversity (2022 & 2023); HHMI Freeman Hrabowski (2022 & 2024); NSF CAREER (2023, 2024, & 2025); Beckman Fellowship Program (2025); Simons Collaborations in Ecology and Evolution (2025); Templeton Foundation (2025)

Funded: NIH R35 ESI-MIRA & USC URAP

Peer-Reviewed Publications

Highlights

- PNAS cover article (2024)
- Genetics cover article (2023)
- Publications in *Cell*, *PNAS*, *Nature Communications*, *Nature Methods*, *Genetics*, *Molecular Biology and Evolution*, *The American Journal of Human Genetics*, *Genome Biology and Evolution*, *Molecular Ecology Resources*, and others

***Corresponding author**

†Equal contribution (co-first author)

♦ Publications arising from trainees in the Mooney Laboratory

Bolded names are students I mentored

2026

Sweetalana[†], **Nataneli S[†]**, **Huang S**, **Mooney JA***, Szpiech ZA*. Genotypic and phenotypic consequences of domestication in dogs. *G3: Genes, Genomes, Genetics*. 2026;jkag195.

Oleksyk TK, Wolfsberger WW, Chhugani K, Huang YN, Pokrytiuk V, Shchubelka K, Zelikovsky A, Pasaniuc B, Jinga V, Bucur O, Edmunds SC, Guio H, Lombard Z, Henn BM, Lobiuc A, Levitchi A, Ciorba D, Bostan V, Munteanu V, Gordeev V, Schaaf CP, Hoh BP, Moreno Estrada A, Covasa M, Dimian M, Kairov U, Pak VM, Seow SW, Chiang CWK, Nepolo E, Pellegrini M, Hamdi Y, Abedalthagafi MS, Mulder NJ, **Mooney JA**, Sanchez-Galan JE, de Souza SJ, Raventós H, Muzzio M, Chavarria-Soley G, Mangul S. Challenges and recommendations in establishing national human diversity genomic projects. *Nat Methods*. 2026;1–6.

Nataneli S, **Karatas AL**, **Ferrari T**, Patel RA, **Mooney JA***. Analytical expectations for ancestry junction accumulation in admixed genomes. *Genetics*. 2026;233:iyag062.

Agranat-Tamir L, Agwamba KD, **Mooney JA**, Rosenberg NA. Shared ancestors and the birthday problem. *Am Stat*. 2026;1–10. doi:10.1080/00031305.2025.2595972.

2025

Akopyan M, **Genchev M**, Armstrong EE, **Mooney JA***. Reference genome choice compromises population genetic analyses. *Cell*. 2025;188:6939–6952.

Sherman CA[†], **Nataneli S[†]**, Claw KG, **Mooney JA***. Echoes of eugenics: confronting its effects in Indigenous genomics. *Genetics*. 2025;231:iyaf127.

Ferrari T, Feng S, Zhang X*, **Mooney JA***. Parameter scaling in population genetics simulations may introduce unintended background selection: Considerations for scaled simulation design. *Genome Biol Evol.* 2025;17:evaf097.

2024

Armstrong EE†, **Li C†**, Campana MG, **Ferrari T**, Kelley JL, Petrov DA, Solari KA, **Mooney JA***. A pipeline and recommendations for population and individual diagnostic SNP selection in non-model species. *Mol Ecol Resour.* 2024;e14048.

Kreger J, **Mooney JA**, Shibata D, MacLean AL. Developmental hematopoietic stem cell variation explains clonal hematopoiesis later in life. *Nat Commun.* 2024;15:10268.

Armstrong EE†*, **Mooney JA†***, Solari KA, Kim BY, Barsh GS, Grant VB, Greenbaum G, Kaelin CB, Panchenko K, Pickrell JK, Rosenberg N, Ryder OA, Yokoyama T, Ramakrishnan U, Petrov DA, Hadly EA*. Unraveling the genomic diversity and admixture history of captive tigers in the United States. *Proc Natl Acad Sci U S A.* 2024;121:e2402924121.

Highlights: PNAS Cover Article (September 2024); featured by *Science*, *The New York Times*, Stanford News, and USC Dornsife.

Agranat-Tamir L, **Mooney JA**, Rosenberg NA. Counting the genetic ancestors from source populations in members of an admixed population. *Genetics.* 2024;iyae011.

Armstrong EE, Bissell KL, Fatima HS, Heikkinen MA, Jessup A, Junaid MO, Lee DH, Lieb EC, Liem JT, Martin EM, Moreno M, Otgonbayar K, Romans BW, Royar K, Adler MB, Needle DB, Harkess A, Kelley JL, **Mooney JA***, Mychajliw AM*. Chromosome-level assembly of the gray fox (*Urocyon cinereoargenteus*) confirms the basal loss of PRDM9 in Canidae. *G3 (Bethesda)*. 2024;14:jkae034.

2023

Mooney JA, Agranat-Tamir L, Pritchard JK, Rosenberg NA. On the number of genealogical ancestors tracing to the source groups of an admixed population. *Genetics.* 2023;224:iyad079.

Highlights: *Genetics* Cover Article (July 2023); featured by Stanford News, USC Dornsife, *The Daily Trojan*, and Axiom.

Mooney JA*, Marsden CD, Yohannes A, Wayne RK, Lohmueller KE*. Long-term small population size, deleterious variation, and altitude adaptation in the Ethiopian wolf, a severely endangered canid. *Mol Biol Evol.* 2023;40:msac277.

2021

Mooney JA, Yohannes A, Lohmueller KE. The impact of identity by descent on fitness and disease in dogs. *Proc Natl Acad Sci U S A*. 2021;118:e2019116118.

2019

Sura SA, Smith LL, Ambrose MR, Amorim CEG, Beichman AC, Gomez ACR, Juhn M, Kandlikar GS, Miller JS, **Mooney JA**, Mummah RO, Lohmueller KE, Lloyd-Smith JO. Ten simple rules for giving an effective academic job talk. *PLoS Comput Biol*. 2019;15.

2018

Mooney JA[†], Huber CD[†], Service S, Sul JH, Marsden CD, Zhang Z, Sabatti C, Ruiz-Linares A, Bedoya G; Costa Rica/Colombia Consortium for Genetic Investigation of Bipolar Endophenotypes; Freimer N, Lohmueller KE. Understanding the hidden complexity of Latin American population isolates. *Am J Hum Genet*. 2018;103:707–726.

Preprints

Zhang X, Yang J, Zhu L, Sachdev N, **Mooney JA**, Sankararaman S, Lohmueller KE. Neanderthal introgressed ancestry reveals human genomic regions enriched with recessive deleterious mutations. *bioRxiv*. 2025. Accepted at *Nature Communications*.

Amorim CEG, Di C, Lin M, Marsden C, Del Carpio CA, Mah JC, Robinson J, Kim BY, **Mooney JA**, Cornejo OE, Lohmueller KE. Evolutionary consequences of domestication. *bioRxiv*. 2024. Under review at *Molecular Biology and Evolution*.

Invited Keynote and Public Talks

SMBE IDEA Symposium, Copenhagen (2026)

Natural History Museum of Los Angeles County — *Elephant in the Room: Small Talk, Big Issues* (2025)

The Allied Genetics Conference (TAGC), Washington, DC (*Invited Panel: "The Eugenics Movement and Scientific Racism—Past, Present, and Future"*)

Conservation Genomics Paris (2024)

SMBE Demographic Inference Symposium (2024)

Contributed Conference Presentations

2024

- Plant and Animal Genome Conference (PAG XXXI), San Diego, CA (*Canine and Feline Genomics Session*)

2023

- Evolution 2023, Albuquerque, NM (*Population Genetics Session*)
- Plant and Animal Genome Conference (PAG XXX), San Diego, CA (*Canine and Feline Genomics Session; Invited Presentation*)

2022

- Computational Genomics Summer Institute (CGSI) Symposium, University of California, Los Angeles, Los Angeles, CA
- American Society of Human Genetics (ASHG) Annual Meeting, Los Angeles, CA
- Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) National Diversity in STEM Conference, San Juan, Puerto Rico
- USC Computational Biology Symposium, University of Southern California, Los Angeles, CA

Invited Seminars

2027

- University of California, Los Angeles — Biomathematics Seminar, Los Angeles, CA (*scheduled - January*)
- Brown University — Center for Computational Molecular Biology Seminar, Providence, RI (*scheduled - April*)

2026

- Ellison Institute of Technology — Generative Biology Institute, Oxford, United Kingdom

2025

- Yale University — Department of Ecology and Evolutionary Biology, New Haven, CT
- North Carolina State University — Genetics and Genomics Academy, Raleigh, NC
- University of California, Davis — Department of Ecology and Evolution, Davis, CA

2024

- University of California, Los Angeles — Center for Behavior, Evolution, and Culture, Los Angeles, CA

- University of Colorado Anschutz Medical Campus — Precision Health and Genomics: Indigenous Mentoring and Ethics (PrIME), Aurora, CO
- California State University, Northridge — Department of Biology, Northridge, CA
- California State University, Los Angeles — Opportunities in Research (MORE), Los Angeles, CA

2023

- University of California, Irvine — Department of Ecology and Evolutionary Biology, Irvine, CA
- University of California, Riverside — Department of Evolution, Ecology, and Organismal Biology, Riverside, CA
- San Diego Wildlife Alliance, Escondido, CA (*virtual*)
- University of Southern California — Center for Ecological and Evolutionary Dynamics (CEED), Los Angeles, CA

2022

- Natural History Museum of Los Angeles County, Los Angeles, CA
- Stanford University — Introduction to Genetics, Ethics, and Society, Stanford, CA
- University of Southern California — Computational Biology Symposium, Los Angeles, CA
- University of California, Los Angeles — Molecular Biology Interdepartmental Doctoral Program, Los Angeles, CA
- University of California, Berkeley — Center for Theoretical Evolutionary Genetics, Berkeley, CA (*virtual*)
- University of Arizona — Department of Ecology and Evolutionary Biology, Tucson, AZ
- Michigan State University — Department of Ecology and Evolutionary Biology, East Lansing, MI (*virtual*)
- San Diego State University — Department of Biology, San Diego, CA

2021

- Pennsylvania State University — Department of Biology, State College, PA
- University of Georgia — Department of Genetics, Athens, GA (*virtual*)
- University of Southern California — Department of Quantitative and Computational Biology, Los Angeles, CA
- University of California, Los Angeles — Molecular Biology Interdepartmental Doctoral Program, Los Angeles, CA
- California State University, Dominguez Hills — Department of Biology Colloquium, Carson, CA (*virtual*)

Teaching

Courses Developed and Instructed

- **Q BIO 115w. Ethics in Biology, Medicine, and Statistics**, University of Southern California (Spring 2024–Present)
 - Course creator and instructor.
- **Q BIO 475. Statistical and Evolutionary Genomics**, University of Southern California (Fall 2022–Present)
 - Co-developed and co-instructor with Doc Edge.
- **Q BIO 105. Introduction to Quantitative Biology Seminar**, University of Southern California (Spring 2023)
 - Co-instructor.
- **BIOL 870. Biology Colloquium**, San Francisco State University (Fall 2020)
 - Instructor.
- **HUMGEN 19. How Genetics has Contributed to Racial Injustice in America and the World**, University of California, Los Angeles (Fall 2020)
 - Co-instructor and co-developed.
- **Population Genetics**, University of California, Los Angeles (Fall 2019)
 - Teaching Assistant.
- **Advanced Human Genetics**, University of California, Los Angeles (Fall 2017)
 - Computational Instructor.
- **Genetics**, University of California, Los Angeles (Fall 2016)
 - Teaching Assistant.

Selected Guest Lectures

- California State University, Northridge — Genetics (Invited by Eduardo Amorim)
- University of California, Berkeley — Human Genetics (Invited by Jacqueline Robinson)

Mentoring

Postdoctoral Fellows

- **Hayden Davis**, Postdoctoral Fellow, USC (2026–Present)
- **Maria Akopyan**, Postdoctoral Fellow, USC (2023–2024)
 - NSF Postdoctoral Research Fellow; Assistant Professor, Rice University.
- **Tina Lasisi**, Postdoctoral Fellow, USC (2022–2023)
 - Assistant Professor, University of Michigan.

Graduate Students

- **Shirin Nataneli**, Computational Biology and Bioinformatics Ph.D., USC (2022–Present)
- **Aydin Loid-Karatas**, Computational Biology and Bioinformatics Ph.D., USC (2024–Present)

- **Shengmiao (Morgan) Huang**, Computational Biology and Bioinformatics Ph.D., USC (2024–Present)
- **Tessa Ferrari**, Computational Biology and Bioinformatics Ph.D., USC (2023–Present)
 - Former undergraduate researcher and research scientist; NSF GRFP Honorable Mention; Simons Graduate Fellow in Ecology and Evolution.

Masters Students

- **Lan Trieu**, QBIO PDP, USC (2026–Present)

Undergraduate Researchers

- **Matthew Genchev**, QBIO, USC (2023–2026)
 - Co-author on *Cell* publication.
 - Provost, SURF, and URAP Fellow
 - Current Position: Gap year applying for PhD programs
- **Aiko Abo Dominguez**, Biological Sciences, USC (2026–2026)
 - URAP Fellow
 - Current Position: NSF Graduate Research Fellow; Fulbright Research Award (Argentina, declined).
- **Sydney Bruce**, QBIO, USC (2024–2026)
 - WiSE Summer Undergraduate Research & URAP Fellow.
- **Karen Lee**, QBIO, USC (2025–2026)
 - Honors Thesis Advisor
 - Current Position: Gap year for applying to medical school
- **Mahija Mogalipuvvu**, QBIO, USC (2024–2025)
 - Honors Thesis Advisor
 - Current Position: Gap year for applying to medical school
- **Joseph Caluya**, QBIO, USC (2024–2025)
- **Peyton Hall**, QBIO, USC (2024–2025)
 - Current Position: Medical Student, Howard University College of Medicine.
- **Chenyang (Julie) Li**, QBIO, USC (2022–2024)
 - *Molecular Ecology Resources* publication
 - WiSE Summer Undergraduate Research Fellow
 - Current Position: Ph.D. student, Emory University.
- **Anika Shrivastava**, QBIO, USC (2022–2024)
 - WiSE Summer Undergraduate Research, Provost, and Surf Fellow.
 - Current Position: Software Engineer, Capital One.
- **Mengdi (Kim) Chai**, QBIO, USC (2022–2023)
 - WiSE Summer Undergraduate Research, Provost, and Surf Fellow.
 - M.S., Harvard University.
 - Current Position: Marketing Management Trainee, Eli Lilly.
- **Abigail Yohannes**, UCLA (2019–2020)
 - Current Position: Threat Detection Analyst, Ambient.ai.

Professional Service

Graduate Committees

Quantitative and Computational Biology (QCB)

- Dallace Francis (Qualifying Examination & Dissertation Committee)
- Bryan Dinh (Qualifying Examination)
- Bida Gu (Qualifying Examination & Dissertation Committee)
- Obadiah Mulder (Qualifying Examination)
- Dandan Peng (Qualifying Examination)
- Janis Liu (Qualifying Examination)
- Handan Cetin (Qualifying Examination)

Molecular and Computational Biology (MCB)

- Ilan Goldstein (Qualifying Examination & Dissertation Committee)
- Joseph Hale (Qualifying Examination & Dissertation Committee)

Molecular, Evolution, and Behavioral Biology (MEB)

- Jenna Dilworth (Qualifying Examination & Dissertation Committee)
- Daniel Olivares-Cordero (Qualifying Examination & Dissertation Committee)
- Adib Mustofa (Qualifying Examination & Dissertation Committee)
- Eliza Kirsh (Qualifying Examination & Dissertation Committee)
- Teagan Biatto (Qualifying Examination)

Epidemiology

- Jalen Langie (Qualifying Examination & Dissertation Committee)

California State University, Northridge

- Caroline Solis (M.S. Committee)

Departmental Service

- Graduate Admissions Committee (2021–2024)
- Visiting Teaching Faculty Selection Committee (2023)
- Department Seminar Committee (2025 - Present)

University Service

- Co-founder and co-organizer, Center for Ecological and Evolutionary Dynamics (CEED) Seminar Series (2023–Present)

Service to the field

Editorial Activities

- Editorial Board Member, *BMC Biology* (2025–Present)
- Guest Editor, *BMC Biology* Conservation Genomics Collection (2024–2025)

Journal Peer Review

Regular reviewer for leading journals in genetics, genomics, evolution, and computational biology, including:

- Science
- Proceedings of the National Academy of Sciences (PNAS)
- Nature Communications
- Current Biology
- Cell Genomics
- The American Journal of Human Genetics (AJHG)
- Molecular Biology and Evolution (MBE)
- Genome Biology and Evolution (GBE)
- Molecular Ecology Resources (MER)
- Human Genetics and Genomics Advances (HGG Advances)
- PLoS Genetics
- Evolutionary Applications
- Evolution Letters
- Frontiers in Genetics
- G3: Genes, Genomes, Genetics
- American Journal of Biological Anthropology (AJBA)
- eLife

Society Service

- **Member**, Genetics Society of America (GSA) Nominating Committee (2024)
- **Featured Interview**, *Landing a Faculty Position: Jazlyn Mooney*, **Genes to Genomes**, Genetics Society of America (2026). Interview discussing faculty applications, laboratory leadership, grant writing, mentoring, and establishing an independent research program.