Maria Akopyan, PhD

Evolution | Genomics | Vertebrate Biology

NSF Postdoctoral Research Fellow in Biology (PRFB)
Department of Evolution, Ecology, and Organismal Biology (EEOB)
University of California, Riverside, Life Science Bldg, Riverside, CA 92507

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EDUCATION

PhD **Cornell University, Department of Ecology and Evolutionary Biology (EEB)** Aug 2023
Committee: Nina O. Therkildsen (chair), Kelly R. Zamudio, Andrew G. Clark

MS **California State University, Northridge (CSUN), Department of Biology** Aug 2017
Advisors: Jeanne M. Robertson and Rachel Mackelprang

BS **University of California, Los Angeles (UCLA), Major: Biology (EEB)** Mar 2013
Minor: Near Eastern Languages and Cultures
Glendale Community College, Transfer Credit

RESEARCH APPOINTMENTS

NSF Postdoctoral Research Fellow in Biology, University of California, Riverside Jan 2025 —
Dept. of Evolution, Ecology, and Organismal Biology
Advisors: Dr. Ellie Armstrong and Dr. Kieran Samuk
Research: Evolution of recombination rates and adaptive trait architectures

Postdoctoral Scholar and Research Associate, University of Southern California 2023 — 2024
Dept. of Quantitative and Computational Biology, Advisor: Dr. Jazlyn Mooney
Research: Reference bias in evolutionary inference for non-model species

Graduate Research Fellow, Cornell University 2017 — 2023
Dept. of Ecology and Evolutionary Biology, Advisor: Dr. Nina Therkildsen
Research: Genetic basis and architecture of local adaptation with gene flow

Graduate Research Fellow, California State University, Northridge 2014 — 2017
Dept. of Biology, Advisor: Dr. Jeanne M. Robertson
Research: Genetic and phenotypic diversification of red-eyed treefrogs

Research Intern, Dauphin Island Sea Lab, Alabama May-Nov 2013
Marine Ecology Lab, Advisor: Dr. Ken Heck
Research: Restoration and monitoring of juvenile fish habitats

Undergraduate Researcher, University of California, Los Angeles Jan-Mar 2013
Field Biology Quarter, Advisors: Dr. Greg Grether and Dr. Debra Shier
Research: Light pollution effects on Neotropical nocturnal rodents

Undergraduate Researcher, Glendale Community College Summer 2012
Baja Field Studies Program, Advisors: Dr. Javier Gago and Greg Meyer
Research: Growth curves of spotted sand bass in the Gulf of California

PUBLICATIONS

6. de Sá FB, **Akopyan M**, Santana EM, Haddad CFB, Zamudio KR. "Mitonuclear and phenotypic discordance in an Atlantic Forest frog hybrid zone." *Ecology and Evolution* (2024). doi.org/10.1002/ece3.70262

5. Pascal FJM, Vega A, **Akopyan M**, Hoke KL, Robertson JM. "Sexual signal evolution and patterns of assortative mating across an intraspecific contact zone." *Journal of Evolutionary Biology* (2023). doi.org/10.1111/jeb.14186

4. **Akopyan M**, Tigano A, Jacobs A, Wilder AP, Baumann H, Therkildsen NO. "Comparative linkage mapping uncovers recombination suppression across massive chromosomal inversions associated with local adaptation in Atlantic silversides." *Molecular Ecology* (2022). doi.org/10.1111/mec.16472

3. Clark MI, Bradburd GS, **Akopyan M**, Vega A, Rosenblum EB, Robertson JM. "Genetic isolation by distance underlies colour pattern divergence in red-eyed treefrogs (*Agalychnis callidryas*)." *Molecular Ecology* (2022). doi.org/10.1111/mec.16350

2. **Akopyan M**, Gompert Z, Klonoski K, Vega A, Kaiser K, Mackelprang M, Rosenblum EB, Robertson JM. "Genetic and phenotypic evidence of a contact zone between divergent colour morphs of the iconic red-eyed treefrog." *Molecular Ecology* (2020). doi.org/10.1111/mec.15639

1. **Akopyan M**, Kaiser K, Vega A, Savant NG, Owen CY, Dudgeon SR, Robertson JM. "Melodic males and flashy females: Geographic variation in male and female reproductive behavior in red-eyed treefrogs (*Agalychnis callidryas*)." *Ethology* (2017). doi.org/10.1111/eth.12705

SUBMITTED MANUSCRIPTS

3. **Akopyan M**, Genchev M, Armstrong EE, Mooney JA. "Divergent reference genomes compromise the reconstruction of demographic histories, selection scans, and population genetic summary statistics." *bioRxiv* (2024). doi.org/10.1101/2024.11.26.625554 (in review at *Cell*)

2. **Akopyan M**, Tigano A, Jacobs A, Wilder AP, Therkildsen NO. "Genetic differentiation is constrained to chromosomal inversions and putative centromeres in locally adapted populations with higher gene flow." *bioRxiv* (2024). doi.org/10.1101/2024.10.20.619329 (in review at *Molecular Biology and Evolution*)

1. Edwards EM, **Akopyan M**, Mosher BA, Therkildsen NO, Sullivan P. "Six genetically distinct endangered cricket frog populations identified in New York: implications for reintroduction efforts and management." (*in review at Conservation Science and Practice*)

ADVANCED STAGE MANUSCRIPTS *available upon request*

1. **Akopyan M**†, Jacobs A†, Rick JA, Wilder AP, Conover DO, Baumann H, Therkildsen NO. "Multiple chromosomal inversions modulate local adaptation across a steep thermal cline." †equal contribution

AWARDS AND HONORS

Pending	NSF DEB Evolutionary Processes Collaborative Research Grant *Tracking speciation dynamics across genomic, phenotypic, and reproductive dimensions of divergence in neotropical leaf frogs* Role: Senior Personnel | Total = $2,736,714	2025-2030
Postdoc	Wisconsin Evolution Early Career Award	2025
	NSF Postdoctoral Research Fellowship in Biology (PRFB) *Investigating the evolutionary dynamics of recombination landscapes and adaptive trait architectures across varying degrees of gene flow* Three years of stipend support and $60,000 in research funds	2025-2027
PhD	Finalist for W. D. Hamilton Award at Evolution Meeting	2023
	Provost Diversity Fellow Cornell Graduate School	2022
	Andrew '78 and Margaret Paul Graduate Fellow in Cornell EEB	2021
	Whittaker Award for Best Student Talk in Cornell EEB	2019
	Book Award for Best First Year Talk in Cornell EEB	2017
	Cornell Center for Vertebrate Genomics Scholar	2017
	SUNY Graduate Diversity Fellow Total = Six semesters of stipend support and $7,500 in research funds	2017
MS	CSUN Biology Outstanding Graduate Student Award	2017
	Mack I. Johnson Research Award for Outstanding Graduate Student	2017
	Nathan O. Freedman Memorial Award for Outstanding Graduate Student	2017
	Associated Students Scholarship in Honor of Jolene Koester	2017
	CSUN Graduate Equity Program	2016
	CSUN Outstanding Promise in Research in Science and Mathematics	2016
	Experiment.com Crowdfunding for Scientific Research Campaign	2015
	Sally Casanova Pre-doctoral Scholar	2015
	Bob and Doris Tracy Memorial Scholarship	2015
	Leslie and Terry Cutler Scholarship Endowment	2015
	CSUN Association of Retired Faculty Memorial Award	2015
	Dr. Bob Luszczak, DDS Graduate Scholarship in Biology	2015
	CSUN Thesis Support Grant Total = Six semesters of stipend support and $17,500 in research funds	2014
BS	Holmes O. Miller Endowment Fund Scholarship for Field Research	2013
	Joseph Epperson Memorial Field Biology Scholarship	2013
	Ecology and Evolutionary Biology Departmental Honors	2013
	Dean's Scholar List	2013

INVITED PRESENTATIONS

Research Seminars	Statistical and Evolutionary Genetics Course, USC	Nov 2024
	Biology Department Seminar, Cal Poly San Luis Obispo	Jun 2024
	Biology Department Seminar, Cal State Northridge	Mar 2024
	Conservation Genetics Graduate Course, Cal State Northridge	Dec 2022
	Herpetology Course, Cornell University	Mar 2019
	Science Lecture Series, Glendale Community College	Feb 2018
	Southwestern Herpetologists Society Meeting	Oct 2016
Guest Lectures	Detecting Selection, Molecular Ecology, Cornell University	Nov 2022
	Trait Mapping, Molecular Ecology, CSUN	May 2020
	Detecting Selection, Molecular Ecology, Cornell University	Mar 2018
	Quantifying Color, Full Immersion Research Experience, CSUN	Mar 2017
	Sequencing is RAD, Molecular Ecology, CSUN	Apr 2016

CONTRIBUTED PRESENTATIONS

USC QCB Dept. Retreat	Ventura, California	Talk	2024
Evolution Meeting	Montréal, Quebec	Talk	2024
GRC Eco Evo Genomics	Smithfield, Rhode Island	Poster	2023
Evolution Meeting	Albuquerque, New Mexico	Talk (Hamilton finalist)	2023
Evolution Meeting	Cleveland, Ohio	Talk	2022
Allied Genetics Conference	Virtual	Poster	2020
Cornell EEB Symposium	Ithaca, New York	Talk (Awarded Best)	2019
GRC Eco Evo Genomics	Manchester, New Hampshire	Poster	2019
Evolution Meeting	Providence, Rhode Island	Talk	2019
RECOMB-CG	Orford, Québec	Poster	2018
Cornell CVG Seminar	Ithaca, New York	Talk	2018
Cornell DNRE Symposium	Ithaca, New York	Talk	2018
Cornell EEB Symposium	Ithaca, New York	Talk (Awarded Best)	2017
Evolution Meeting	Portland, Oregon	Poster	2017
Joint Mtg. of Ichs. & Herps.	New Orleans, Louisiana	Poster	2016
Evolution Meeting	Austin, Texas	Talk	2016
CSUN Symposium	Los Angeles, California	Talk	2016
Southwestern Organismal Bio	Pomona, California	Talk	2015
CSUN Sigma Xi Symposium	Los Angeles, California	Talk	2015
UCLA EEB Symposium	Los Angeles, California	Poster	2013

LEADERSHIP

Co-founder, ADHD in Academia	2021 —
Co-founder, Cornell EEB Academic Peer Experience Group	2018 — 2022
Coordinator, Cornell Diversity Preview Weekend	2018 — 2021
President, CSUN EEB Graduate Club	2015 — 2017
Treasurer, CSUN Women in Science Club	2015 — 2017
Co-founder, CSUN Graduate Student Leadership Council	2015 — 2016

TEACHING

Teaching Assistant, Cornell University — 2018 — 2022

- Molecular Tools for Ecology, Conservation, & Natural Resource Management — *5 semesters*
- Collaborative and Reproducible Data Science in R
- Herpetology

Teaching Assistant, Cal State Northridge — 2014 — 2017

- Molecular Markers in Evolutionary Studies — *6 semesters*
- Majors and Non-majors Introductory Biology Lab (Instructor of Record)
- Full Immersion Research Experience
- Behavioral Ecology

Trained in COPUS – the Classroom Observation Protocol for Undergraduate STEM

OUTREACH & SERVICE

Assistant Graduate Representative, EEB Faculty Search Committee	2022
Graphic Design, Neurodiversity Community at Cornell	2022
Instructor, GRASSHOPR Graduate Student School Outreach Program	2019
Graphic Design, Safe Evolution Program, Council of Evolution Studies	2018
Science Fair Judge, Armenian Engineers and Scientists of America	2017
Founder & Instructor, Girls in Science & Technology Club, Portola Middle School	2016
Instructor, Genomic Data Analysis for Beginners Workshop, Cal State Northridge	2016
Panelist, Advancement to Graduate Education Conference, Cal State Northridge	2016

Peer-Reviewed Articles for: *Genome, Molecular Ecology, Genome Biology and Evolution*

MENTORING

Sydney Bruce	Bachelor's student at USC	2024
Matthew Genchev	Bachelor's student at USC	2023 — 2024
Elise Edwards	PhD student at Cornell	2022 — 2023
Florine Pascal	Master's student at CSUN	2020 — 2021
Fábio P. de Sá	PhD student at São Paulo State University	2018 — 2023
Anita Michalak	Bachelor's student at Cornell	2018 — 2019
Meaghan Clark	Master's student at CSUN	2016 — 2017

RELEVANT SKILLS

Laboratory	DNA/RNA extraction and library preparation for high-throughput sequencing Chromosome preparation for cytogenetics with regenerating fin tissue
Computational	Python (intermediate), Perl (basic), Bash (intermediate), R (advanced) Population genomic analysis of RAD and whole genome data Genome-wide association and pedigree-based linkage and trait mapping Quantification and analysis of courtship behavior and color pattern variation
Languages	English (fluent), Armenian (native)