
Rachel S Schwartz

Cartwright Lab
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EDUCATION

Ph.D. Ecology	University of California, Davis	June 2008
B.A. Biology	Bryn Mawr College	May 2001

RESEARCH EXPERIENCE

2013-present	Assistant Research Scientist, Arizona State University
2012-2013	Postdoctoral Researcher, Arizona State University
2009-2011	NSF Bioinformatics Postdoctoral Fellow, Colorado State University
2008-2009	Postdoctoral Researcher, Colorado State University
2003-2008	Graduate Student Researcher, University of California, Davis
2001-2003	Research Technician, University of Notre Dame
2000-2001	Undergraduate Researcher, Academy of Natural Sciences, Philadelphia
2000-2001	Undergraduate Researcher, Bryn Mawr College
2000	Undergraduate Researcher, University of Maine

PUBLICATIONS

- Ramu, A., M.J. Noordam, **R.S. Schwartz**, A. Wuster, M.E. Hurles, R.A. Cartwright, and D.F. Conrad. *Advance online publication*. DeNovoGear: *de novo* indel and point mutation discovery and phasing. *Nature Methods*.
- O'Neill, E.M., **R. Schwartz**, C.T. Bullock, J.S. Williams, H.B. Shaffer, X. Aguilar-Miguel, G. Parra-Olea, and D.W. Weisrock. 2013. Parallel tagged amplicon sequencing reveals major lineages and phylogenetic structure in the North American tiger salamander (*Ambystoma tigrinum*) species complex. *Molecular Ecology*. 22: 111-129.
- Schwartz, R.S.** and R.L. Mueller. 2010. Variation in DNA substitution rates among lineages erroneously inferred from simulated clock-like data. *PLoS ONE*. 5(3): e9649.
- Schwartz, R.S.** and R.L. Mueller. 2010. Limited effects of among-lineage rate variation on the phylogenetic performance of molecular markers. *Molecular Phylogenetics and Evolution*. 54: 849–856.
- Schwartz, R.S.** and R.L. Mueller. 2010. Branch length estimation and divergence dating: estimates of error in Bayesian and maximum likelihood frameworks. *BMC Evolutionary Biology*. 10:5.
- Schwartz, R.S.** and B. May. 2008. Genetic evaluation of isolated populations for use in reintroductions reveals significant genetic bottlenecks in potential stocks of Sacramento perch. *Transactions of the American Fisheries Society* 137: 1764–1777.
Winner of the Phelps Award for the best genetics paper in an AFS journal in 2008

Schwartz, R.S. and B. May. 2004. Characterization of microsatellite loci in Sacramento perch (*Archoplites interruptus*). *Molecular Ecology Notes* 4:694-697.

MANUSCRIPTS SUBMITTED

Lavretsky, P., **R.S. Schwartz**, M.R. Baerwald, and B. May. Selecting for genetic health: a comparison of MHC, mitochondrial, and microsatellite diversity in a bottlenecked teleost species.

FUNDING AND AWARDS

2009-2011	NSF Bioinformatics Postdoctoral Fellowship	\$123,000
2008	Teaching Resources Center, UC Davis (principal writer)	\$5315
2007-2008	UC Davis Jastro-Shields Research Grant	\$1000
	UC Davis Ecology Graduate Group Block Grant Fellowship	\$7000
2007	UC Davis Ecology Graduate Group Block Grant Fellowship	\$8400
2006-2007	NSF GK-12 Fellowship	\$40,000
	California Bay Delta Authority (CALFED) Grant (co-principal writer)	\$96,421
2005-2006	UC Davis Jastro-Shields Research Grant	\$800
	UC Davis Ecology Graduate Group Block Grant Fellowship	\$7000
2005	UC Davis Dept. of Animal Science Cole Fellowship	\$3000
	UC Davis Ecology Graduate Group Block Grant Fellowship	\$7000
2004	National Science Foundation Graduate Research Fellowship Honorable Mention	
2003-2004	UC Davis Ecology Graduate Group Out of State Tuition Award, 2 quarters	
2000	Summer Undergraduate Research Experience Award, Univ. of Maine	\$2500
1997-2001	Edmund F. Maxwell Foundation Scholarship for Undergraduates	\$14,000

PENDING FUNDING

01/01/14 – 12/31/16 (Senior Personnel, 100%) PI: R. Cartwright
ABI Innovation: Identifying phylogenetically informative data from next-generation sequencing.
NSF Advances in Biological Informatics
Total Direct Costs: \$449,459

04/01/14 – 03/31/16 (PI, 50%)
Identification of pathogen evolution using whole-genome sequence data.
NIH Exploratory/Developmental Research Grant Award (R21)
National Human Genome Research Institute / National Institute of Allergy and Infectious Diseases
Total Direct Costs: \$275,000

TEACHING EXPERIENCE

- 2012 Instructor, University of Wisconsin – Eau Claire
Intro to Ecology and Evolution labs
Biology Capstone: Pigeon Lake Field Course
Guest Lecture, Genetics, Arizona State University
- 2008 Instructor, Principles of Ecology, University of California, Davis
Scientific Consultant, State Education and Environment Roundtable
- 2006-2007 NSF GK-12 Fellow, University of California, Davis
Textbook Consultant, Thomson Higher Education
- 2006 Teaching Assistant, Intro to Ecology, University of California, Davis
- 2005 Teaching Assistant, Human Heredity, University of California, Davis
Science Education Intern, Cooper Elementary School

STUDENTS SUPERVISED

- Akash Khare, B.S. Electrical Engineering – ASU Senior Honors Thesis
Jessica Albanese – ASU Senior Honors Thesis
Phillip Lavretsky – UC Davis Senior Thesis
Stephanie Dowd – UC Davis Undergraduate Research
Marisa Lim – Davis High School

SEMINARS

- 2012 California State University-Monterey Bay, Division of Environmental Science and Policy
University of Wisconsin, Eau Claire, Biology Seminar Series
- 2008 University of California, Davis, Animal Science Seminar Series
Colorado State University, Biology Department
University of Minnesota, Community Genetics Seminar
- 2006 University of Wisconsin, Eau Claire, Biology Seminar Series
Undergraduate Seminar in Research Opportunities in Biology, UC Davis
Undergraduate Seminar in Conservation Biology, UC Davis (with Molly Stephens)
- 2005 Pacific Coast Science and Learning Center Seminar Series (Point Reyes Seashore)
California Parks Monitoring and Genetics Workshop

PRESENTATIONS AT SCIENTIFIC MEETINGS

- 2013 Annual Meeting of the Society for the Study of Evolution
Mechanisms of Protein Evolution II
- 2009 Annual Meeting of the Society for the Study of Evolution
- 2007 Ecological Society of America Annual Meeting
Evolutionary Change in Human-altered Environments Summit, *poster*
- 2006 Fourth Biennial CALFED Science Conference, *poster*
Interagency Ecological Program Workshop, *poster*
- 2005 Conservation Genetics Symposium
Bay Area Conservation Biology Symposium
- 2004 Third Biennial CALFED Science Conference, *poster*

- 2002 Notre Dame Environmental Education and Research Symposium, *poster*
2001 American Society of Limnology and Oceanography, Aquatic Sciences Meeting, *poster*

SERVICE

- 2013 Volunteer, Ask-A-Biologist, ASU
2008 Student representative, Conservation AOE, Graduate Group in Ecology, UC Davis
Chair Selection Committee, Graduate Group in Ecology, UC Davis
Reviewer, Applications to the Graduate Group in Ecology, UC Davis
2007 Organizer, education outreach workshop, Ecological Society of America meeting
2005-present Volunteer mentor, Center for Land Based Learning
2006, 2007 Picnic Day Committee, Animal Science Department, UC Davis
2005-2006 Volunteer, UC Davis Society of Conservation Biology outreach program
2005 Co-chair session of American Fisheries Society Cal-Neva Annual Meeting
Volunteer intern, Science Outreach, Cooper Elementary, Vacaville, CA

Reviewer: Fisheries, Canadian Journal of Fisheries and Aquatic Sciences, BMC Evolutionary
Biology, Conservation Genetics, PLoS ONE

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Ecological Society of America	Sigma Delta Epsilon/Graduate Women in Science
Society for Conservation Biology	Society for the Study of Evolution

PROGRAMMING LANGUAGES

Python, Perl, Unix