

SILU WANG

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RESEARCH INTEREST

In order to substantially understand biodiversity in the changing world, I investigate the genomic footprints of hybridization, adaptation, and the evolution of reproductive isolation over various temporal and spatial scales. My ultimate research goal is integrating population-focused, processing-driven insights for effective species rescue in the 6th extinction.

ACADEMIC POSITIONS

Postdoc + Jan. 2020 - Dec. 2021 University of California, Berkeley (UC Berkeley)
Mentor: Doris Bachtrog, Center of Theoretical and Evolutionary Biology

EDUCATION

- PhD Zoology**, 2020.
Thesis: **Genomic architecture of speciation in a warbler species complex**
Advisor: Darren Irwin, University of British Columbia (UBC)
Committee members: Sally Otto, Loren Rieseberg, Dolph Schluter
- MA Ecology, Evolution & Behavior; Computer Science (minor)**, 2014.
Thesis: **Behavior, morphology, and genetic signatures of sexual selection in poeciliid fish**
Advisor: Molly Cummings, University of Texas at Austin (UT Austin)
Committee members: Mike Ryan, Hans Hofmann
- BS Behavior, Genetics & Neurobiology; Applied Statistics (minor)**, *high distinction*, 2011.
Thesis: **Aggressive behaviors, food-deprivation, and the foraging gene**
Advisor: Marla Sokolowski, University of Toronto (U of T)

PUBLICATIONS (*corresponding author; +equal contribution; ^undergraduate mentee)

- (6) **Wang S.***, Ore M., Mikkelsen E.^, Lee-Yaw, J., Rohwer S., Irwin DE. **2021**. Signatures of mitochondrial climate adaptation in a warbler species complex. *Nature Communications*. 12:4279.
- (5) **Wang S.***, Rohwer S., de Zwaan D. R., Toews D.P.L., Lovette I.J., Mackenzie J. ^, Irwin DE. **2020**. Selection on a small genomic region underpins differentiation in multiple color traits between two warbler species. *Evolution Letters*. 4-6: 502-515.
- (4) **Wang S.***, Rohwer S., Delmore K., Irwin DE. **2019**. Cross-decades stability of an avian hybrid zone. *Journal of Evolutionary Biology*. 32: 1242-1251.
- (3) **Wang S.**, Sokolowski M. B.* **2017**. Aggressive behaviors, food-deprivation and the *foraging* gene. *Royal Society Open Science*. 4:170042.
- (2) **Wang S.***, Cummings M. E., Kirkpatrick M. A. **2015**. Coevolution of male courtship and sexual conflict characters in mosquitofish. *Behavioral Ecology*. 26:1013-1020.
- (1) **Wang S.M.T.**, Ramsey M., Cummings M. E.* **2014**. Plasticity of the mate choice mind: courtship evokes choice-like brain responses in females from a coercive mating system. *Genes, Brain and Behavior*. 13:365-375.

Preprints / submitted manuscripts

- (1) +MacPherson A.*, +**Wang S.** Rieseberg L., Yamaguchi R., Otto S. Parental population isolation and

range expansion before secondary contact leads to greater hybrid relative fitness. [BioRxiv](#).
Accepted. American Naturalist.

- (2) **Wang S.**, Nalley M.J., Chatla K., Aldaimalani R.^, MacPherson A., Wei KH-C., Corbett R., Mai D., Bachtrog D.* Neo-sex chromosome evolution shapes sex-dependent asymmetrical introgression barrier. [BioRxiv](#). *In revision. PNAS.*
- (3) de Zwaan D. R., Mackenzie J. ^, Mikkelsen E.^, Wood, C., **Wang S.*** Opposing dominance within a color gene block is associated with maladaptive hybrid signal discordance. [BioRxiv](#).
- (4) **Wang S.*** Coevolution of song and egg coloration: multimodal mating signals? [BioRxiv](#).
- (5) Price S., Schumer M., **Wang S.**, Young R., Cummings M.* Individual variation in preference and affiliative behavior in sailfin fish refines the neurotranscriptomic pathway for mate preference. *Submitted.*

Manuscripts in progress

Wang S., Aldaimalani R.^, Nalley M.J., Chatla K., Bachtrog D. Parsing out snowball effect, large X effect, and inversion effect in introgression with comparative multi-generations hybrid swarms.
Wang S., Stepwise divergence of genomic contributors of speciation.

INVITED PRESENTATIONS

- 2021 Museum Seminar Series, Museum of Natural Sciences, Louisiana State University
- 2021 Advances in the Study of Reproductive Isolation in birds Symposium (AOS meeting).
- 2021 Barton Group, Institute of Science and Technology Austria.
- 2021 Evolution, Genomics, Behavioral Ecology, French National Centre for Scientific Research.
- 2021 Evolution, Ecology, Genetics, and Genomics, University of Rochester.
- 2021 Center of Population Biology, UC Davis
- 2020 Population Genetics seminar, Duke University.
- 2020 Ornithology Discussion, University of New Mexico.
- 2019 Center of Theoretical Evolutionary Genomics seminar, UC Berkeley.
- 2019 Les Ecologistes seminar, Simon Fraser University.
- 2018 BLISS seminar, University of British Columbia.
- 2013 Lunch seminar, School of Geological Science, UT Austin.
- 2013 Brain, Behavior & Evolution (BBE) Seminar, UT Austin.
- 2013 Biology Department Seminar, University of Oklahoma.
- 2012 BBE Seminar, UT Austin.

ORAL PRESENTATIONS

- 2021 American Ornithological Society (AOS) meeting, Virtual
- 2021 The Society for the Study of Evolution meeting, Virtual
- 2021 Population Genomics Journal Club, UC Berkeley, Virtual
- 2021 Annual Drosophila Research Conference, The Genetics Society of America, Virtual
- 2019 The Society for the Study of Evolution meeting, Providence, Rhode Island, USA.
- 2019 Eco-Evo Retreat, Brackendale, BC, Canada.
- 2018 International Ornithological Congress meeting, Vancouver, BC, Canada.
- 2017 The Society for the Study of Evolution meeting, Portland, OR, USA.
- 2017 Canadian Society for Ecology and Evolution meeting, Victoria, BC, Canada.
- 2016 North American Ornithological Congress, Washington, DC, USA.
- 2015 American Ornithologists' Union & Cooper's Ornithological Society meeting, OK, USA.
- 2014 International Ornithological Congress, Tokyo, Japan.

- 2014** American Society of Naturalists meeting, Pacific Grove, CA, USA.
2014 Society for Integrative and Comparative Biology Meeting, Austin, TX, USA.
2012 The Society for the Study of Evolution, Ottawa, ON, Canada.
2012 Animal Behavior Society meeting, Albuquerque, NM, USA.
2012 Integrative Biology Graduate Symposium, UT Austin.
2011 American Ornithologists' Union, Jacksonville, FL, USA.

POSTERS (*best poster award)

- 2019*** The Society for the Study of Evolution, Providence, RI, USA.
2018 Evo-Wibo Conference, Port Townsend, WA, USA.
2018 Evo-Eco Department Retreat, Brackendale, BC, Canada.
2018* UBC Zoology Graduate Spring Symposium, Vancouver, BC, Canada.
2017 The Society for the Study of Evolution Meeting, Portland, OR, USA.
2017* UBC Zoology Graduate Symposium, Vancouver, BC, Canada.
2010 Ontario Biology Day, Toronto, ON, Canada.
2010 Crime Prevention Conference, Mississauga, ON, Canada.

AWARDS GRANTS & HONORS

2019	Ruth Patrick Student Poster Award, American Society of Naturalists	\$1,000
2019	Zoology Travel Award, Department of Zoology, UBC	\$500
2019	Best Talk Award, Eco-Evo Retreat, Brackendale, BC	
2018-2019	Zoology Graduate Fellowship, UBC	\$16,000
2018	Gibson's citation, Green College, UBC	
2018	Best Poster Award, Zoology Graduate Spring Symposium	
2018	Graduate Student Travel Fund, UBC	\$500
2017	Best Poster Award, Zoology Graduate Spring Symposium	
2016	Werner and Hildegard Hesse Research Award in Ornithology	\$2,500
2015-2018	Postgraduate Scholarship D (PGS D) Natural Sciences and Engineering Research Council of Canada (NSERC)	\$63,000
2015	Werner and Hildegard Hesse Research Award in Ornithology	\$3,500
2014	Biodiversity Research: Integrative Training & Education Grant, UBC	\$4,000
2014	R Howard Webster Foundation Fellowship, UBC	\$2,500
2014-2018	Four Year Doctoral Fellowship, UBC	\$18,000
2014	Student Travel grant, International Ornithological Congress	\$500
2014	Travel grant, Ecology, Evolution and Behavior, UT Austin	\$1,000
2012-2013	Texas Ecolab Research Grant	\$3,000
2011	Student Travel Award, American Ornithologists' Union	\$600
2011	Ontario Graduate Scholarship, Ministry of Training, Colleges and Universities of Ontario	\$6,000
2011	Excellence Award in the Natural Sciences and Engineering, U of T	\$5,600
2010, 2011	Honor Roll in Department of Mathematical and Computational Sciences, U of T	
2010	Student Membership Award, American Ornithologists' Union	

TEACHING/MENTORING EXPERIENCE

Teach assistance

- BIOL336: Fundamentals of Evolution Biology, UBC 2018 Spring and Fall
- BIO321: Introduction to Computational Biology, UT Austin 2014 Spring
- BIO370: Evolution, UT Austin 2012 Spring, 2013 Fall
- BIO311: Introductory Biology, UT Austin 2012 Fall

- BIO206: Structure & Function of Organisms, UT Austin 2012 Summer
- BIO318: Biostatistics, UT Austin 2011 Fall
- STA257: Probability and Statistics I, U of T 2010 Fall
- BIO329: Mammalian Biology field section, U of T 2009 Fall

Guest lecture

BIOL427: Ornithology and Herpetology 2019 Fall, 2021 Spring

Mentoring

Anton Pederson: 2012; Arvind Pillai: 2013; Korey Conley: 2013-14;

Ruth Midgley: 2015; Else Mikkelsen: 2016-17; Jacqueline Mackenzie: 2017; Reema Aldaimalani 2021

TEACHING SKILLS

Field ornithology: banding, mist-netting, measurements, blood and feather sampling, song recording and analyses, plumage pigment study, field behavioral experiments

Computational biology: coding and statistical analyses in R, spatial genomics, bioinformatics in Unix

Molecular lab: DNA or RNA extraction, library preparation

Scientific Illustration: data visualization, vector illustration, watercolor and pencil drawing poster and infographics

OTHER ACADEMIC CONTRIBUTION

Leadership &/or coordination

2020-present [Speciation & Introgression Genomics Discussion Group](#), coordinator, UC Berkeley

i.e. weekly international zoom seminar-discussion group of over 470 researchers

2017-19 Biodiversity Seminar Committee, A/V coordinator, Biodiversity Research Center, UBC

2018 Dining Society Treasurer, Green College, UBC

2017-18 Sustainability Committee, Chair, Green College, UBC

2015-16 Art Committee, Chair, Green College, UBC

Reviewer service

Auk, American Naturalist, Genome Biology and Evolution, Integrative and Comparative Biology, Molecular Ecology, National Science Foundation Grant Proposal, Poland National Science Center Grant Proposal.

OUTREACH

2021 Breaking Language Barriers in Biodiversity Science, guest mentor, UC Berkeley

2019 Girls in Science Technology Engineering and Math (STEM), mentor, Templeton Secondary School, Vancouver

2019 Nature Illustration Club Coordinator, UBC

2015-19 Biodiversity Birding Group Coordinator, UBC

Public lectures

- On the Speciation of Species: the Fantastic Process Underlying Biodiversity, **Mar. 26th 2018**, Green College, UBC.
- The Hermit Expedition: Stories about the Habitat, Flora, Fauna and People in Northwest America, **Sep. 26th 2016**, Green College, UBC.
- The Scales of Existence: A Journey from Population to Molecules (Collaborated with Isobel Mouat, Microbiology and Immunology; Kelsey Huus, Microbiology and Immunology; J. Andrew Alexander, Biochemistry and Molecular Biology), **Nov. 16th 2015**, UBC.
- Sassy Tastes or Sexy Traits: Stories about Coevolution of Female Preference and Male Traits. Darwin's 203rd Birthday, **May 11th 2012**, Texas Memorial Museum