

# SILU WANG

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## RESEARCH INTEREST

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In order to 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, process-driven insights for effective species rescue in the 6<sup>th</sup> extinction.

## ACADEMIC POSITIONS

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**Postdoc** + Jan. 2022 - Dec. 2022 University of California, Davis (UC Davis)  
Mentor: Graham Coop, Center for Population Biology  
**Postdoc** + Jan. 2020 - Dec. 2021 University of California, Berkeley (UC Berkeley)  
Mentor: Doris Bachtrog, Center of Theoretical and Evolutionary Biology

## EDUCATION

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**PhD Zoology**, 2020.  
Thesis: **Genomic architecture of speciation in a warbler species complex**  
University of British Columbia (UBC)  
**MA Ecology, Evolution & Behavior**; Computer Science (minor), 2014.  
Thesis: **Behavior, morphology, and genetic signatures of sexual selection in poeciliid fish**  
**BS Behavior, Genetics & Neurobiology**; Applied Statistics (minor), *high distinction*, 2011.  
Thesis: **Aggressive behaviors, food-deprivation, and the *foraging* gene**

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

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- (8) **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](#). **Accepted. PNAS**.
- (7) +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**.
- (6) **Wang S.\***, Ore M., Mikkelsen E.^, Lee-Yaw, J., Rohwer S., Irwin DE. **2021**. Signatures of mito-nuclear climate adaptation in a warbler species complex. **Nature Communications**.
- (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) **Wang S.\***, Rohwer S., Delmore K., Irwin DE. **2019**. Cross-decades stability of an avian hybrid zone. **Journal of Evolutionary Biology**.
- (3) **Wang S.**, Sokolowski M. B.\* **2017**. Aggressive behaviors, food-deprivation and the *foraging* gene. **Royal Society Open Science**.
- (2) **Wang S.\***, Cummings M. E., Kirkpatrick M. A. **2015**. Coevolution of male courtship and sexual conflict characters in mosquitofish. **Behavioral Ecology**.

- (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*.

#### Preprints / submitted manuscripts

- (1) 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](#).
- (2) Li Q., **Wang S.\*** Tinamou egg color displacement at ecoregion co-partitioning. [BioRxiv](#).
- (3) 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.** Coop, G., Stepwise divergence of genomic contributors of speciation.

### **INVITED PRESENTATIONS**

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- 2021** Center of Theoretical Evolutionary Genomics seminar, UC Berkeley
- 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**

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- 2021** Speciation Introgression Discussion Group, Virtual
- 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)

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- 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

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

## TEACHING/MENTORING EXPERIENCE

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### *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**

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**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**

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**Leadership &/or coordination**

- 2020-22 [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**

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- 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. 26<sup>th</sup> 2018**, Green College, UBC.
- The Hermit Expedition: Stories about the Habitat, Flora, Fauna and People in Northwest America, **Sep. 26<sup>th</sup> 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. 16<sup>th</sup> 2015**, UBC.
- Sassy Tastes or Sexy Traits: Stories about Coevolution of Female Preference and Male Traits. Darwin's 203rd Birthday, **May 11<sup>th</sup> 2012**, Texas Memorial Museum