

# 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*. 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) 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** 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** 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-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

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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