

KIERAN SAMUK, PH.D.

email ksamuk@gmail.com
website samuklab.com
twitter [@ksamuk](https://twitter.com/ksamuk)

CURRENT POSITION

Assistant Professor University of California, Riverside 2021–Present
Department: Evolution, Ecology, and Organismal Biology
Research Focus: Evolutionary genetics & genomics

EDUCATION

Postdoc Duke University 2016–2021
Mentor: Dr. Mohamed Noor
Project: *Adaptive evolution of recombination rate in Drosophila pseudoobscura*

PhD University of British Columbia 2011–2016
Advisor: Dr. Dolph Schluter
Thesis: *The genomics of adaptation and speciation in threespine stickleback*

MSc University of British Columbia 2008–2011
Advisor: Dr. Leticia Avilés
Thesis: *Sociality in cobweb spiders: evolutionary consequences and the role of pre-existing traits*

HBSc University of Toronto 2004–2008
Honors Advisor: Dr. James Thomson
Thesis: *The ontogeny of social networks and division of labour in bumble bee colonies.*

PUBLICATIONS

16. **Samuk, K.**, Noor, M.A.F. Gene flow biases population genetic inference of recombination rate. *G3: Genes | Genomes | Genetics*. Accepted manuscript. 2022.
15. Roesti, M., Gilbert, K.J., **Samuk, K.**, Chromosomal inversions can limit adaptation to new environments *Molecular Ecology*, 31 (17), 4435–4439. 2022.
14. Korunes, K.L.*, **Samuk, K.*** pixy: Unbiased estimation of nucleotide diversity and divergence in the presence of missing data. *Molecular Ecology Resources*, <https://doi.org/10.1111/1755-0998.13326>. Equal co-authorship with K. Korunes. 2021.

PUBLICATIONS (CONT.)

13. Korunes, K.L., **Samuk, K.**, Noor M.A.F. Disentangling Types of Linked Selection Using Patterns of Nucleotide Variation in *Drosophila pseudoobscura*. In: *Population Genomics*. Springer, Cham. https://doi.org/10.1007/13836_2021_87. 2021.
12. **Samuk, K.**, Manzano-Winkler, B., Ritz, K.R. and Noor, M.A.F. Natural Selection Shapes Variation in Genome-wide Recombination Rate in *Drosophila pseudoobscura*. *Current Biology*, 30 (8), 1517–1528. 2020.
11. Ostevik, K.L., **Samuk, K.**, and Rieseberg, L.H. 2019. Ancestral reconstruction of sunflower karyotypes reveals dramatic chromosomal evolution. *Genetics*, 214 (4), 1031–1045 2020.
10. Miller, S.E., Legan, A.W., Henshaw, M., Ostevik, K.L., **Samuk, K.**, Uy, F.M., Reeve, H.K. and Sheehan, M.J. Evolutionary dynamics of recent selection for enhanced social cognition. *PNAS*, 117 (6), 3045–3052. 2020.
9. Owens, G.L., **Samuk, K.** Adaptive introgression during environmental change can weaken reproductive isolation. *Nature Climate Change*, 10(1): 58–62. 2019.
8. Rennison, D.J., Delmore, K.E., **Samuk, K.**, Owens, G.L. and Miller, S.E.. Shared patterns of genome-wide differentiation are more strongly predicted by geography than by ecology. *The American Naturalist*, 195(2), 192–200. 2019.
7. **Samuk, K.*** , Xue, J.* and Rennison, D. J. Exposure to predators does not lead to the evolution of larger brains in experimental populations of threespine stickleback. *Evolution*, 72: 916–929. Equal co-authorship with J. Xue. 2018.
6. **Samuk, K.** , Owens, G. L., Delmore, K. E., Miller, S., Rennison, D. J. and Schluter, D. Gene flow and selection interact to promote adaptive divergence in regions of low recombination. *Molecular Ecology*, 26: 4378–4390. 2017.
5. **Samuk, K.** Perspective: Inversions and the origin of behavioral differences in cod. *Molecular Ecology*, 25(10):2111–2113. 2016.
4. Miller, S.E., **Samuk, K.**, and Rennison, D.J. An experimental test of the effect of predation upon behaviour and trait correlations in the threespine stickleback. *Biological Journal of the Linnean Society*, 119(1): 117–125. 2016.
3. **Samuk, K.**, Iritani, D. and Schluter, D. Reversed brain size sexual dimorphism accompanies loss of parental care in white sticklebacks. *Ecology and Evolution*, 4(16): 3236–3243. 2014.
2. **Samuk, K.** and Avilés, L. Indiscriminate care of offspring predates the evolution of sociality in alloparenting social spiders. *Behavioral Ecology and Sociobiology*, 67(8): 1275–1284. 2013.
1. **Samuk, K.**, LeDue, E.E., and Avilés, L. Sister clade comparisons reveal reduced maternal care behavior in social cobweb spiders (*Anelosimus* spp.). *Behavioral Ecology*, 23(1): 35–43. 2011.

SOFTWARE

- 2020 **pixy**: Unbiased estimation of nucleotide diversity in the face of missing data.
<https://github.com/ksamuk/pixy>
- 2019 **syntR**: Reproducible identification of chromosomal rearrangements.
<https://ksamuk.github.io/syntR/>

SCHOLARSHIPS & AWARDS

2018	NSERC Postdoctoral Fellowship – \$90 000
2018	Duke Core Facility Research Award – \$7000
2018	NSF BIO Research Grant: "An experimental test of the role of chromosomal inversions in adaptive evolution" Formal PI: M Noor. Conceived of and authored by K Samuk– \$200 000
2017	Duke Core Facility Research Award – \$6500
2016	SSE Hamilton Symposium Travel Award – \$500
2015	Society for Integrative and Comparative Biology Research Award – \$1000
2014	University of British Columbia Four Year Fellowship – \$20 000
2011	NSERC Canada Graduate Scholarship (3 years) – \$105 000
2010	Royal Society Publishing prize for Best Poster at IUSI – \$500
2009	NSERC Alexander Graham Bell Canada Graduate Scholarship – \$84 000
2008	NSERC Undergraduate Research Award – \$9 000
2008	Dr. James A. and Connie P. Dixon Award – \$500

PRESENTATIONS & CONTRIBUTIONS

2022	Speciation without ecological specialization in the white stickleback Invited Seminar · <i>International Conference on Stickleback Biology, Holar, Iceland</i>
2022	The evolution and consequences of recombination rate variation Invited Seminar · <i>University of Maryland</i>
2022	The evolution and consequences of recombination rate variation Invited Seminar · <i>UC Riverside EEOB GradFest</i>
2021	The role of recombination in modulating evolutionary processes Invited Seminar · <i>Case Western Reserve University</i>
2020	The evolution and consequences of recombination rate variation Invited Seminar · <i>University of California, Riverside</i>
2019	The evolution and consequences of recombination rate variation Invited Seminar · <i>University of Virginia EEBIO Seminar</i>
2019	Adaptive evolution of recombination rate in <i>Drosophila pseudoobscura</i> Talk · <i>Evolution 2019</i>
2018	Adaptive evolution of recombination rate in <i>Drosophila pseudoobscura</i> Talk · <i>South Eastern Population Ecology and Evolutionary Genetics 2018</i>
2018	The role of gene flow in shaping evolutionary processes Invited Seminar · <i>East Carolina University RIP Seminar Series</i>

PRESENTATIONS & CONTRIBUTIONS (CONT.)

- 2017 The evolution and consequences of recombination rate variation
Invited Seminar · *University of North Carolina BioPop Seminar Series*
- 2017 Incipient speciation without trophic specialization in the white stickleback
Talk · *Evolution 2017*
- 2017 Natural selection and diversification in the threespine stickleback
Invited Seminar · *Duke University PopBio Seminar Series*
- 2016 Clustering of adaptive alleles is favored by gene flow in a globally distributed species
Talk · *Evolution 2016*
- 2015 Selection with gene flow favours reduced recombination in adaptive genomic regions in global stickleback populations
Talk · *SSE Hamilton Symposium, Evolution*
- 2013 Genomic signatures of reproductive isolation in the white stickleback.
Poster · *European Society for Evolution Biology*
- 2010 The origin and consequences of cooperative breeding in social cobweb spiders.
Talk · *EcoEvo Retreat*
- 2010 The origin of alloparental care in social cobweb spiders.
Poster · *International Union for the Study of Social Insects*
- 2009 The Evolution of Alloparental Care in Social Comb-Footed Spiders.
Talk · *EcoEvo Retreat*
- 2008 Bumble Bee Social Networks Correlate with Division of Labour.
Poster · *Canadian Society for Evolution and Ecology*

TEACHING

- 2022 Instructor - BIOL 108 - Population Genetics and Genomics, UC Riverside.
- 2021 Instructor - BIOL 105 - Evolution (Online!), UC Riverside.
- 2021 Instructor - BIOL 005C - Introductory Ecology and Evolution, UC Riverside.
- 2019 Certified Software Carpentry Instructor
- 2014 Head TA – Data Wrangling, Exploration, and Analysis with R
- 2014 TA – Evolutionary Ecology
- 2011 TA – Fundamentals of Evolutionary Biology
- 2010 TA – Introduction to Entomology
- 2010 TA – Animal Behaviour
- 2009 TA – Animal Behaviour
- 2008 TA – Introduction to Saltwater Ecosystems

MENTORSHIP

2022–	Alexandra Sumarli – Graduate Student (PhD, UCR EEOB)
2022–	Gina Lucas – Graduate Student (PhD, UCR EEOB)
2022	Reyna Quinonez – Supervised undergraduate UCR RISE summer project
2022	Bella Clement – Supervised undergraduate UCR RISE summer project
2022	Paimon Goulart – Supervised undergraduate summer project
2022	Rajeet Patel – Supervised undergraduate UCR RISE summer project
2017	Freddie Xu – Supervised undergraduate activities in Noor Lab
2016	Jan Xue – Supervised undergraduate research project (see co-authored publication)
2015	Hannah Visty – Supervised undergraduate research project (see co-authored publication)
2014	Davis Iritani – Supervised undergraduate research project (see co-authored publication)
2013	Jacob Best – Supervised undergraduate activities in Schluter Lab
2012	Michelle Ning – Supervised undergraduate activities in Schluter Lab
2010	Emily LeDue – Supervised undergraduate research project (see co-authored publication)
2009	Gyan Harwood – Supervised undergraduate summer research in Avilés Lab

DIVERSITY & INCLUSION

2022	Co-authored grant on Advancing Faculty Diversity (with Natalie Holt, UCR EEOB) UC Riverside - EEOB
2021	Departmental DEI Committee Member UC Riverside - EEOB
2019	Reducing bias in Evaluation Methods Workshop Duke University - Dr. Cisco Ramos
2019	Creating Cultural Competency Workshop Duke University - Duke International House
2019	Pursuing Respect, Inclusion, Diversity & Equity (PRIDE) Training Duke University - Duke CSGD
2018	Mitigating implicit bias in biology and beyond Duke University - Dr. Patricia Devine

PROFESSIONAL SERVICE & OUTREACH

<i>Reviewing</i>	Biological Journal of the Linnean Society, Ecology and Evolution, Evolution, G3, Genetics, Molecular Ecology, Molecular Biology and Evolution, Nature Ecology and Evolution, Nature Communications, PLoS Genetics, Proceedings of the Royal Society B., PNAS
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PROFESSIONAL SERVICE & OUTREACH

- 2021 Guest Lecture – "Online Presence for Academics". EEOB 400, UC Riverside.
- 2020– Maintainer and community contact for *pixy* software (<https://github.com/ksamuk/pixy>)
- 2016 Invited speaker at Elder U (senior-citizen science outreach) at Capilano University
- 2016 Volunteer Instructor & Guru for UBC's "R Club"
- 2015 Facilitator & organizer for the UBC Biodiversity Seminar series
- 2013 Student Mentor for UBC Zoology Graduate Mentorship Program
- 2011 Volunteer for the UBC/SFU/UVic EcoEvo Retreat
- 2011 Student organizer for UBC Biodiversity Internal Seminar Series

Last updated 01-09-2022