

# KIERAN SAMUK, PH.D.

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## 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

17.                **Samuk, K.** Average nucleotide diversity should be weighted by per-site sample size. *Molecular Ecology Resources*, 23.2, 355–358. 2023.
16.                **Samuk, K.**, Noor, M.A.F. Gene flow biases population genetic inference of recombination rate. *G3: Genes | Genomes | Genetics*, 12(11), jkac236. 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](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

2023	Invited Seminar · <i>UC Davis Population and Evolutionary Genetics Seminar</i>
2023	Invited Seminar · <i>Auburn University EGS Seminar</i>
2023	Invited Seminar · <i>UC San Diego EBE Seminar</i>
2022	Presentation · <i>International Conference on Stickleback Biology, Holar, Iceland</i>
2022	Invited Seminar · <i>University of Maryland</i>
2022	Invited Seminar · <i>UC Riverside EEOB GradFest</i>
2021	Invited Seminar · <i>Case Western Reserve University</i>
2020	Invited Seminar · <i>University of California, Riverside</i>
2019	Invited Seminar · <i>University of Virginia EEBIO Seminar</i>
2019	Presentation · <i>Evolution 2019</i>
2018	Presentation · <i>South Eastern Population Ecology and Evolutionary Genetics 2018</i>
2018	Invited Seminar · <i>East Carolina University RIP Seminar Series</i>
2017	Invited Seminar · <i>University of North Carolina BioPop Seminar Series</i>
2017	Presentation · <i>Evolution 2017</i>
2017	Invited Seminar · <i>Duke University PopBio Seminar Series</i>

## PRESENTATIONS & CONTRIBUTIONS (CONT.)

2016	Presentation · <i>Evolution 2016</i>
2015	Presentation · <i>SSE Hamilton Symposium, Evolution</i>
2013	Poster · <i>European Society for Evolution Biology</i>
2010	Presentation · <i>EcoEvo Retreat</i>
2010	Poster · <i>International Union for the Study of Social Insects</i>
2009	Presentation · <i>EcoEvo Retreat</i>
2008	Poster · <i>Canadian Society for Evolution and Ecology</i>

## TEACHING

### INSTRUCTOR OF RECORD, UC RIVERSIDE

2023	BIOL 105 - Evolution
2023	BIOL 005C - Introductory Ecology and Evolution
2022	BIOL 108 - Population Genetics and Genomics
2021	BIOL 105 - Evolution
2021	BIOL 005C - Introductory Ecology and Evolution

### OTHER TEACHING EXPERIENCE

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)

**MENTORSHIP (CONT.)**

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**

2021-	Departmental DEI Committee Member UC Riverside - EEOB
2022	Co-authored proposal on Advancing Faculty Diversity (with Dr.Natalie Holt, UCR EEOB) 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>Society Memberships</i>	Society for the Study of Evolution, American Society of Naturalists, Genetics Society of America, Canadian Society for Ecology and Evolution
<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

# PROFESSIONAL SERVICE & OUTREACH (CONT.)

2021-2023	Guest Lecturer – "Online Presence for Academics". EEOB 400, UC Riverside.
2020–	Maintainer and community contact for <i>pixy</i> software ( <a href="https://github.com/ksamuk/pixy">https://github.com/ksamuk/pixy</a> )
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 06-04-2023*