

# 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 &amp; 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 IUSSI – \$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 &amp; CONTRIBUTIONS

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

PRESENTATIONS & CONTRIBUTIONS (CONT.)

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

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 *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 06-04-2023*