

OLIVIA KOSTERLITZ

NSF GRFP Fellow, Ph.D. Candidate

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EDUCATION

- 2016 – Present **Ph.D. in Biological Sciences, University of Washington**
Certificate in Data Science and Computational Molecular Biology
Advisor: *Benjamin Kerr*
Advisory Committee: *Toby Bradshaw, Maitreya Dunham, Jennifer Nemhauser*
- 2012 – 2016 **B.S. in Biology, University of Utah**
Minor in Chemistry
Advisor: *Richard Clark*

PROFESSIONAL HISTORY

- 2018 – present NSF Graduate Research Fellow, Kerr Lab, University of Washington Biology Department
- 2017 – 2018 Research Assistant, Kerr Lab, University of Washington Biology Department
Advisor: *Benjamin Kerr*
- 2017 Rotation, Promislow Lab, University of Washington Biology Department
Advisor: *Daniel Promislow*
- 2016 Rotation, Amemiya Lab, Benaroya Research Institute
Advisor: *Chris Amemiya*
- 2015 – 2016 Research Technician, Clark Lab, University of Utah Department of Biology
Advisor: *Richard Clark*
- 2014 – 2015 Research Assistant, Pain Research Center, University of Utah Department of Anesthesiology
Advisor: *Akiko Okifuji*
- 2014 – 2015 Research Associate, Emergency Room University of Utah Hospital
- 2014 Research Coordinator, Behavioral Business Laboratory, University of Utah
Spencer Eccles School of Business
Advisor: *Jennifer Overbeck*

PUBLICATIONS

Published - * Joint first authors

- Kosterlitz O**, Muniz AT, Wate C, Elg C, Bozic I, Top EM, & Kerr B. Estimating the rate of plasmid transfer with an adapted Luria–Delbrück fluctuation analysis. *bioRxiv* 2021.01.06.425583 (2021)
doi:[10.1101/2021.01.06.425583](https://doi.org/10.1101/2021.01.06.425583) (under review).
- Jordt H, Thibault S, **Kosterlitz O**, Top EM, and Kerr B. (2020). Coevolution of host plasmid pairs facilitates the emergence of novel multi-drug resistance. *Nature Ecology & Evolution*.
<https://doi.org/10.1038/s41559-020-1170-1>.
- Kurlovs AH*, Snoeck S*, **Kosterlitz O**, Van Leeuwen TV and Clark RM. (2019). Trait mapping in diverse arthropods by bulked segregant analysis. *Current Opinion in Insect Science* **36**, 57–65.
<https://doi.org/10.1016/j.cois.2019.08.004>.
- Wybouw N, Kurlovs AH, Greenhalgh R, Bryon A, **Kosterlitz O**, Manabe Y, Osakabe M, Vontas J, Clark RM, and Van Leeuwen T. (2019). Convergent evolution of cytochrome P450s underlies independent origins of keto-carotenoid pigmentation in animals. *Proceedings of the Royal Society B: Biological Sciences* **286**, 20191039. <https://doi.org/10.1098/rspb.2019.1039>
- Snoeck S*, Kurlovs AH*, Bajda S, Feyereisen R, Greenhalgh R, Villacis-Perez E, **Kosterlitz O**, Dermauw W, Clark RM, and Van Leeuwen T. (2019). High-resolution QTL mapping in *Tetranychus urticae* reveals acaricide-specific responses and common target-site resistance after selection by different

METI-I acaricides. *Insect Biochemistry and Molecular Biology* 110, 19–33.
<https://doi.org/10.1016/j.ibmb.2019.04.011>.

Wybouw N*, **Kosterlitz O***, Kurlavs AH, Bajda S, Greenhalgh R, Snoeck S, Bui H, Bryon A, Dermauw W, Leeuwen TV, and Clark RM. (2019). Long-Term Population Studies Uncover the Genome Structure and Genetic Basis of Xenobiotic and Host Plant Adaptation in the Herbivore *Tetranychus urticae*. *Genetics* 211, 1409–1427. <https://doi.org/10.1534/genetics.118.301803>.

Under review or in prep

McGee R, **Kosterlitz O**, Kaznatcheev A, Kerr B, and Bergstrom C. (in prep). No pain no gain. Information acquisition is bounded by substitutional load.

FELLOWSHIPS and GRANTS

2020	International Society for Plasmid Biology bursary (\$1,000)
2019	NSF BEACON research grant, Co-authors: <i>Doug Fowler</i> and <i>Ben Kerr</i> (\$27,000)
2019	NSF BEACON research grant, Co-authors: <i>Ryan McGee</i> , <i>Ben Kerr</i> , <i>Carl Bergstrom</i> (\$25,000)
2019	Travel grant, BEACON an NSF Center for the Study of Evolution in Action (\$1,000)
2019	Graduate School Travel Grant, University of Washington (\$500)
2018	NSF Graduate Research Fellowship (\$34,000 x 3 years plus tuition)
2018	UW-Illumina Grant Program (\$1,500)
2018	NSF BEACON research grant, Co-authors: <i>Ashely Teufel</i> and <i>Ben Kerr</i> (\$54,000)
2018	Graduate and Professional Student Senate (GPSS) travel grant, University of Washington (\$500)
2017	Travel Grant, BEACON an NSF Center for the Study of Evolution in Action (\$1,000)
2014	Undergraduate Research Opportunity Fellowship, University of Utah Office of Undergraduate Research (\$2,400)

SCHOLARSHIPS, HONORS, and AWARDS

2021	Best talk, Plasmids Around the Globe 2021, International Society for Plasmid Biology (\$100)
2020	Hoag Award, University of Washington Department of Biology (\$2400)
2020	Beacon Award, University of Washington Department of Biology (\$1000)
2019	Best talk, Gordon Research Seminar Microbial Population Biology, Andover, NH.
2018	R.C. Lewontin Early Career Award, Society for the Study of Evolution (\$2,300)
2017	National Defense Science & Engineering Graduate (NDSEG) Fellowship Finalist, Department of Defense (DoD)
2016	Undergraduate Research Scholar, University of Utah
2015 – 2016	Campus Involvement Scholarship, University of Utah (\$5,000)
2015	Outstanding Service Award, Phi Eta Sigma National Honor Society, University of Utah
2012 – 2013	Full tuition scholarship, University of Utah Dance Department (\$10,000)

ORAL PRESENTATIONS

Invited

2022	Workshop on Plasmids as vehicles of Antimicrobial Resistance spread, The Abdus Salam International Centre for Theoretical Physics, Virtual. Talk titled “Estimating the rate of plasmid transfer with an adapted Luria–Delbrück fluctuation analysis.”
2021	ASM World Microbe Forum, Virtual. Talk titled “Identifying adaptive paths in host-plasmid coevolution using <i>breseq</i> .”
2021	Iqbal research group seminar, European Bioinformatics Institute (EMBL - EBI), Virtual. Talk titled “Estimating the rate of plasmid transfer with an adapted Luria–Delbrück fluctuation analysis.”

Contributed

2021	International Society for Plasmid Biology Plasmids around the globe, Virtual. Talk titled “Estimating the rate of plasmid transfer with an adapted Luria–Delbrück fluctuation analysis.”
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Olivia Kosterlitz Curriculum Vitae

- 2020 NSF BEACON weekly seminar, livestreamed at University of Idaho, Michigan State University, University of Texas, North Carolina A&T. Talk titled “Estimating the rate of plasmid transfer with an adapted Luria–Delbrück fluctuation analysis.” Youtube: <https://youtu.be/gjh58Gzr188>
- 2020 University of Washington Department of Biology Seminar, Seattle, WA. Talk titled “Estimating the rate of plasmid transfer with an adapted Luria–Delbrück fluctuation analysis”.
- 2019 Gordon Research Conference Microbial Population Biology, Andover, NH. Talk titled “A poison that is its own antidote”
- 2019 Gordon Research Seminar Microbial Population Biology, Andover, NH. Talk titled “A poison that is its own antidote”
- 2018 Graduate Student Symposium, Seattle, WA. Talk titled “Double bind or double duty? Identifying evolutionary trade-offs in beta-lactamase”.
- 2017 Deep Mutational Scanning Research Symposium, Seattle, WA. Talk titled “Double bind or double duty? Identifying evolutionary trade-offs in beta-lactamase”.
- 2016 Biology Undergraduate Research Symposium, Salt Lake City, UT. Talk titled “The genetic architecture of diapause”

POSTERS

- 2019 Deep Mutational Scanning Research Symposium, Seattle, WA. Poster titled “Double bind or double duty? Identifying evolutionary trade-offs in beta-lactamase”.
- 2018 Evolution (International Joint Meeting), Montpellier, France. Poster titled “Double bind or double duty? Identifying evolutionary trade-offs in beta-lactamase”.
- 2018 BEACON Congress, Lansing, MI. Poster titled “Double bind or double duty? Identifying evolutionary trade-offs in beta-lactamase”.
- 2017 BEACON Congress, Lansing, MI. Poster titled “Double bind or double duty? Identifying evolutionary trade-offs in beta-lactamase”.
- 2016 Undergraduate Research Symposium, Salt Lake City, UT. Poster titled “The Relationship between Fibromyalgia and Sleep”.

TEACHING EXPERIENCE

- 2018 – 2020 Field Trip Instructor, Department of Biology, University of Washington
Introductory Evolution and Ecology
- 2016 – 2018 Teaching Assistant, Department of Biology, University of Washington
Introductory Molecular and Cellular Biology (*Instructor: Ben Wiggins*)
Introductory Evolution and Ecology (*Instructors: Scott Freeman and Jake Cooper*)
Evolution and Systematics (*Instructor: Hannah Jordt*)
- 2015 – 2016 Tutor, Biology Learning Center, University of Utah
Courses: Genetics, Cell Biology, Evolution and Diversity, Introductory Biology, Biochemistry
- 2014 – 2016 Teaching Assistant, University of Utah College of Science
Cell Biology (*Instructor: Daryl Kropf*)
Organic Chemistry II (*Instructor: Matthew Sigman*)
Organic Chemistry I, (*Instructor: Holly Sebahar*)
Introductory Biology, (*Instructor: Renee Dawson*)

MENTORING

- 2020 – present Nathan Grassi. *Ph.D. Graduate Student*. Kerr Lab, University of Washington.
- 2019 – present Adamaris Tirado. *Ph.D. Graduate Student*. Kerr Lab, University of Washington.
- 2019 – present Bailey Werner. *Undergraduate*. Kerr Lab, University of Washington.
Porath-Johnson Award. Department of Biology, University of Washington, 2020
Sudarsky Internship Award. Department of Biology, University of Washington, 2020
- 2019 – present Claire Wate. *Undergraduate*. Kerr Lab, University of Washington.

Olivia Kosterlitz Curriculum Vitae

- 2019 Miranda Mudge. *Rotating Ph.D. Graduate Student*. Kerr Lab, University of Washington.
 2018 – 2019 Shannon Chan, *Undergraduate*. Kerr Lab, University of Washington.
 2017 – 2019 Reilly Falter. *Undergraduate*. Kerr Lab, University of Washington.
 Oral presentation, Mary Gates research symposium, University of Washington, 2019
 John & Dorothy Franco Award. Department of Biology, University of Washington, 2019
 Mary Gates Research Scholarship, University of Washington, 2018
 Poster presentation, BEACON Congress, Michigan State University, 2017
 2017 Haley Dixon. *Undergraduate*. Promislow Lab, University of Washington

SERVICES and ACTIVITIES

- 2022 Peer Reviewer, *Microbiome*
 2021 Grant Reviewer, UW Biology graduate and postdoctoral awards
 2021 Facilitator, Fred Hutch Girls Who Code, Seattle, WA.
 2021 Peer Reviewer, *Philosophical Transactions B*
 2021 WAIS data entry volunteer, Swedish COVID Vaccination Clinic, Seattle, WA.
 2020 – 2021 Founder and co-organizer, Department of Biology graduate student and post-doc weekly seminar series, University of Washington, Seattle, WA.
 2020 Participant, Academics for Black Survival and Wellness
 2020 Participant, Self-Advocacy in Academia facilitated by Korie Grayson and Joy Woods
 2020 Peer Reviewer, *Ecology Letters*
 2019 Peer Reviewer, *Journal of Molecular Evolution*
 2019 Participant, ComSciCon-PNW: Communicating Science Workshop, Seattle, WA.
 2019 Co-organizer, Deep mutational scanning symposium, Seattle, WA. (Sponsored by Brotman-Baty Institute and Illumina)
 2018 – 2021 Graduate Student Coordinating Committee, Department of Biology, University of Washington
 2018 – 2019 Faculty Search Committee, Department of Biology, University of Washington
 2017 – 2018 Biology Education Research Journal Club, University of Washington
 2017 – 2018 Volunteer, UW Science Explorers NSF funded outreach program, University of Washington
 2017 Co-founder and co-organizer, Deep mutational scanning symposium, Seattle, WA. (Sponsored by Illumina and SGI-DNA)
 2017 – 2018 Volunteer, Burke Museum, University of Washington
 2017 – 2018 Career Seminar Committee, Department of Biology, University of Washington
 2016 – 2017 Volunteer, UW Dream Project, University of Washington
 2016 Volunteer, Seattle Aquarium, Seattle, WA.
 2013 – 2016 Volunteer, Road Home Homeless Shelter, Salt Lake City, UT.
 2013 – 2016 Volunteer, Big Brothers Big Sisters, Salt Lake City, UT.
 2014 – 2016 Volunteer, Melihah Free Clinic, Midvale, UT.
 2015 – 2016 President, Phi Eta Sigma National Honor Society, University of Utah
 2013 – 2015 Volunteer, Inspiration Hospice, Salt Lake City, UT.
 2014 – 2015 Service and Education Committee, Phi Eta Sigma National Honor Society, University of Utah