MATTHEW M. OSMOND

Postdoctoral Fellow
Center for Population Biology
University of California - Davis
mmosmond@ucdavis.edu
mmosmond.github.io

Appointments

Prof.	Department of Ecology & Evolutionary Biology, University of Toronto	2021-
PDF	Center for Population Biology & Banting Fellow, UC Davis Mentors: Graham Coop, Sebastian Schreiber, Andrew Whitehead	2018-2020

Education

PhD	Zoology, University of British Columbia Title: *Adaptive challenges: fitness valleys and evolutionary rescue* Supervisor: Sarah Otto Committee: Amy Angert, Michael Doebeli, Michael Whitlock	2013 - 2018
MSc	Biology, McGill University Title: *Eco-evolutionary rescue: an adaptive dynamic analysis* Supervisor: Claire de Mazancourt Committee: Michel Loreau, Frédéric Guichard	2010 - 2012
BSc	Mathematics & Biology, Queen's University Honours title: *The meaning of female coloration in the American redstart* Supervisors: Laurene Ratcliffe, Matt Reudink Committee: Paul Martin	2004 - 2008

Selected Awards

2018-2021	Center for Population Biology Postdoctoral Fellowship, UC Davis	$125,000
2018-2020	Banting Postdoctoral Fellowship, Canada	$140,000
2018-2020	Postdoctoral Fellowship, NSERC (awarded but declined)	$90,000
2013-2017	Alexander Graham Bell Canada Graduate Scholarship, NSERC	$105,000
2011-2012	Alexander Graham Bell Canada Graduate Scholarship, NSERC	$17,500
2011-2012	Dr. Neal Simon Memorial Scholarship	$1,000
2007	Undergraduate Student Research Award, NSERC	$4,500

Publications

13. **Osmond M**, Coop G. 2019. Genetic signatures of evolutionary rescue by a selective sweep. *bioRχiv* 10.1101/800201.
12. Henriques GJB, **Osmond M**. 2019. During environmental change, cooperation can promote rescue or lead to evolutionary suicide. *bioRχiv* 10.1101/784553.
11. **Osmond M**, Otto SP, Martin G. 2020. Genetic paths to evolutionary rescue and the distribution of fitness effects along them. *Genetics*.
10. Thompson K, **Osmond M**, Schluter D. 2019. Parallel genetic evolution and speciation from standing variation. *Evolution Letters* 3:129-141.
9. Edwards K, Kremer C, Miller E, **Osmond M**, Litchman E, Klausmeier C. 2018. Evolutionary stable communities: a framework for understanding the role of trait evolution in the maintenance of diversity. *Ecology Letters* 21:1853-1868.
8. Scott M*, **Osmond M***, Otto S. 2018. Haploid selection, sex ratio bias, and transitions between sex-determining systems. *PLoS Biology* 16:e2005609. [* joint first authors]
7. **Osmond M**, Klausmeier C. 2017. An evolutionary tipping point in a changing environment. *Evolution* 71:2930-2941.
6. **Osmond M**, Otto S, Klausmeier C. 2017. When predators help prey adapt and persist in a changing environment. *The American Naturalist* 190:83-98. [F1000Prime Recommended]
5. **Osmond M**, Barbour M, Bernhardt J, Pennell M, Sunday J, O'Connor M. 2017. Warming induced changes to body size stabilize consumer-resource dynamics. *The American Naturalist* 189:718-725.
4. Toews D, Delmore K, **Osmond M**, Taylor P, Irwin D. 2017. Migratory orientation in a narrow avian hybrid zone. *PeerJ* 5:e3201.
3. **Osmond M**, Otto S. 2015. Fitness-valley crossing with generalized parent-offspring transmission. *Theoretical Population Biology* 105:1-16.
2. **Osmond M**, Reudink M, Marra P, Germain R, Nocera J, Boag P, Ratcliffe L. 2013. Relationships between carotenoid-based female plumage and age, reproduction, and mate colour in the American Redstart. *Canadian Journal of Zoology* 91:589-595.
1. **Osmond M**, de Mazancourt C. 2013. How competition affects evolutionary rescue. *Philosophical Transactions of the Royal Society B: Biological Sciences* 368:20120085.

Service

Reviewer *The American Naturalist* (9), *Evolution* (2), *Genetics* (2), *Journal of Theoretical Biology* (2), *Theoretical Population Biology* (2), *Biological Journal of the Lineann Society* (1), *Ecology* (1), *Ecology Letters* (1), *eLife* (1), *Frontiers in Ecology and Evolution* (1), *Global Change Biology* (1), *Heredity* (1), *Philosophical Transactions of the Royal Society B* (1), *Journal of Statistical Mechanics* (1), *PLoS Computational Biology* (0.5), *Science* (0.5)

Invited Seminars

Osmond M. 2018. Evolutionary rescue: adaptation, genetics, demography. University of Toronto, Toronto, Canada.

Osmond M, Martin G, Ronce O, Otto S. 2018. Evolutionary rescue. Mathematical Biology Seminar, University of British Columbia, Vancouver, Canada.

Osmond M. 2018. Evolutionary rescue: integrating ecological and evolutionary theory. Center for Population Biology, University of California - Davis, Davis, USA.

Osmond M, Martin G, Otto S, Ronce O. 2016. Genetic signatures of evolutionary rescue with sex. Stochastic Models for the Inference of Life Evolution group, College de France, Paris, France.

Osmond M, Otto S, Klausmeier C. 2016. When predators help prey adapt and persist. Institute National de la Recherche Agronomique, Montpellier, France.

Osmond M, Otto S. 2016. Subcritical adaptation: fitness valleys and evolutionary rescue. Stochastic and Deterministic Models for Evolutionary Biology workshop, Oaxaca, Mexico.

Osmond M, de Mazancourt C. 2013. Using adaptive dynamics to predict evolution and extinction in changing environments. Pacific Institute for the Mathematical Sciences, University of British Columbia, Vancouver, Canada.

Osmond M, de Mazancourt C. 2011. To adapt and persist in a changing environment. Mick Follows lab, Massachusetts Institute of Technology, Boston, USA.