

David Murray-Stoker

Ph.D. Candidate

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Research Interests (Meta)community Ecology — Evolutionary Ecology — Pedagogy — Mutualisms — Plant-Microbe Interactions — History & Philosophy of Science

Education

University of Toronto Ph.D. in Ecology & Evolutionary Biology Advisor: Marc Johnson Committee: Megan Frederickson, John Stinchcombe Title: <i>Coevolutionary ecology of legume-rhizobia interactions in urban environments.</i>	2018–Present
University of Georgia B.S. in Ecology Undergraduate Research Advisor: Catherine Pringle	2011–2016
Gainesville State College Prerequisites while dual-enrolled in high school and community college	2010–2011

Publications

10. **D. Murray-Stoker**, K. M. Murray-Stoker, F. P. Kong*, and F. Amanat*. In press. Environmental filtering and habitat (mis)matching of riverine invertebrate metacommunities. *Journal of Biogeography*. [Preprint](#) — [Data & Code](#)
9. Miles, L. S.⁺, **D. Murray-Stoker**⁺, V. J. Nhan, and M. T. J. Johnson. 2022. Effects of urbanization on specialist herbivorous insect communities of milkweed are mediated by spatial and temporal variation. *Ecosphere* 13: e4222. DOI: [10.1002/ecs2.4222](https://doi.org/10.1002/ecs2.4222) — [Data & Code](#)
8. Barnum, T., R., J. T. Wootton, R. J. Bixby, J. M. Drake, **D. Murray-Stoker**, C. Colon-Gaud, A. T. Rugenski, T. C. Frauendorf, S. Connelly, S. S. Kilham, M. R. Whiles, K. R. Lips, and C. M. Pringle. 2022. Mechanisms underlying lack of functional compensation by insect grazers after tadpole declines in a Neotropical stream. *Limnology & Oceanography* 67: S198-S210. DOI: [10.1002/lno.11904](https://doi.org/10.1002/lno.11904)
7. **Murray-Stoker, D.**, and M. T. J. Johnson. 2021. Ecological consequences of urbanization on a legume-rhizobia mutualism. *Oikos* 130: 1750-1761. DOI: [10.1111/oik.08341](https://doi.org/10.1111/oik.08341) — [Data & Code](#)
6. **Murray-Stoker, D.** 2021. On the efficacy of restoration in stream networks: comments, critiques, and prospective recommendations. *Peer Community Journal* 1: e52. DOI: [10.24072/pcjournal.52](https://doi.org/10.24072/pcjournal.52) — [Data & Code](#)

5. **Murray-Stoker, D.**, and K. M. Murray-Stoker. 2020. Consistent metacommunity structure despite inconsistent drivers of assembly at the continental scale. *Journal of Animal Ecology* 89: 1678-1689. DOI: [10.1111/1365-2656.13220](https://doi.org/10.1111/1365-2656.13220) — [Data & Code](#)
4. Santangelo J. S., L. S. Miles, S. T. Breitbart, **D. Murray-Stoker**, L. R. Rivkin, M. T. J. Johnson, and R. W. Ness. 2020. Urban environments as a framework to study parallel evolution. In: *Urban Evolutionary Biology*. Edited by Marta Szulkin, Jason Munshi-South and Anne Charmantier: Oxford University Press. DOI: [10.1093/oso/9780198836841.003.0003](https://doi.org/10.1093/oso/9780198836841.003.0003)
3. Murray-Stoker, K. M., D. P. Batzer, **D. Murray-Stoker**, and J. V. McHugh. 2020. Shifts in the community composition of caddisflies (Insecta: Trichoptera) in a subtropical river over three decades. *Ecological Entomology* 45: 514-524. DOI: [10.1111/een.12822](https://doi.org/10.1111/een.12822) — [Data & Code](#)
2. Murray, K. M., **D. Stoker**, C. M. Pringle, and T. N. Simon. 2018. Is spatial variation in population size structures of a stream-dwelling caddisfly due to the altered effects of a predator by a third-party species? *Hydrobiologia* 820: 65-77. DOI: [10.1007/s10750-018-3674-0](https://doi.org/10.1007/s10750-018-3674-0) — [Data & Code](#)
1. **Stoker, D.**, A. J. Falkner, K. M. Murray, A. K. Lang, T. R. Barnum, J. Hepinstall-Cymerman, M. J. Conroy, R. J. Cooper, and C. M. Pringle. 2017. Decomposition of terrestrial resource subsidies in headwater streams: Does consumer diversity matter? *Ecosphere* 8: e01868. DOI: [10.1002/ecs2.1868](https://doi.org/10.1002/ecs2.1868) — [Data & Code](#)

⁺ Equal contributors

^{*} Undergraduate co-author

Manuscripts (In Prep/Under Review)

1. Murray-Stoker, K., J. V. McHugh, A. C. Benke, K. A. Parsons, **D. Murray-Stoker**, A. D. Rosemond, S. J. Wenger, and D. P. Batzer. Taxon-specific biomass declines in the Ogeechee River (GA, USA): the importance of a community approach to understanding invertebrate loss. In revision at *Freshwater Biology*.

Honours & Awards

Rustom H. Dastur Graduate Scholarship in Ecology & Evolutionary Biology	2018—Present
University of Toronto Faculty of Arts & Science Program-Level Fellowship	2018—Present
Josh Laerm Memorial Outstanding Undergraduate Award	2015
Zell Miller Scholarship	2011—2016

Funding

University of Toronto Ecology & Evolutionary Biology Research Grant (2000 CAD)	2021
American Society of Naturalists Student Research Award (2000 USD)	2021

Centre for Urban Environments Research Fund (2000 CAD)	2021
CURO Undergraduate Research Assistantship (2000 USD)	2015
Society for Freshwater Science Undergraduate Travel Award (600 USD)	2015
Thelma Richardson & Frank Golley Undergraduate Support Award (500 USD)	2013

Presentations

Murray-Stoker, D., J. S. Santangelo, M. Szulkin, and M. T. J. Johnson. 2022. Quantifying urban environmental gradients across varying climates on a global scale. Joint Meeting of the Canadian Society for Ecology and Evolution and the Ecological Society of America, Montreal, QC. (*Oral*)

Murray-Stoker, D., and M. T. J. Johnson. 2022. Local adaptation between white clover and rhizobia in the urban mosaic. Annual Meeting of the Society for the Study of Evolution, Cleveland, OH. (*Oral*)

Murray-Stoker, D., and M. T. J. Johnson. 2021. Ecological consequences of urbanization on a legume-rhizobia mutualism. Annual Meeting of the Ecological Society of America, Virtually Anywhere. (*Oral*)

Stoker, D., A. J. Falkner, K. M. Murray, A. K. Lang, T. R. Barnum, J. Hepinstall-Cymerman, M. J. Conroy, R. J. Cooper, and C. M. Pringle. 2016. Decomposition of terrestrial resource subsidies in headwater streams: Does consumer diversity matter? Odum School of Ecology Graduate Student Symposium, Athens, GA. (*Poster*)

Stoker, D., A. J. Falkner, K. M. Murray, A. K. Lang, T. R. Barnum, J. Hepinstall-Cymerman, M. J. Conroy, R. J. Cooper, and C. M. Pringle. 2015. Decomposition of terrestrial resource subsidies in headwater streams: Does consumer diversity matter? Annual Meeting of the Society for Freshwater Science, Milwaukee, WI. (*Poster*)

Stoker, D., A. J. Falkner, K. M. Murray, A. K. Lang, T. R. Barnum, J. Hepinstall-Cymerman, M. J. Conroy, R. J. Cooper, and C. M. Pringle. 2015. Decomposition of terrestrial resource subsidies in headwater streams: Does consumer diversity matter? Annual Southeastern Ecology and Evolution Conference, Athens, GA. (*Oral*)

Barnum, T. R., J. T. Wootton, R. J. Bixby, J. M. Drake, C. Colon-Gaud, **D. Stoker**, A. T. Rugenski, T. C. Frauendorf, S. J. Connelly, S. S. Kilham, M. R. Whiles, K. R. Lips, and C. M. Pringle. 2014. Examining why grazing mayflies do not functionally compensate for the top-down control of algal communities following disease-driven tadpole declines in a Neotropical stream. Annual Meeting of the Ecological Society of America, Sacramento, CA. (*Oral*)

Teaching & Mentoring

Teaching Experience

Teaching Roles

Duties: lab instruction, facilitating group learning, marking research papers

BIO205: Ecology	2018—2020
BIO360: Biometrics I	2019-2020

Administrative Roles

Duties: exam preparation, extension requests, accessibility, gradebook management

BIO205: Ecology (c. 300 students) 2021—2022

BIO153: Diversity of Organisms (c. 900 students) 2022

Mentoring Experience

Elana Maria, Research Opportunity Program 2021

Project: *Evo-eco feedbacks in a legume-rhizobia mutualism*

Pedagogical Training

Advanced University Teaching Preparation 2021—Present

University of Toronto, Teaching Assistant Training Program

Training sessions & workshops:

Identify, Assist, Refer Plus (IAR+) Training

Identifying and Addressing Microaggressions in the University Classroom

Introduction to Active Learning: Theory & Strategy

Avoiding Crickets: Discussion Strategies and Activities

Engaging in Quantitative and Qualitative Data Interpretation

Building Community in Online Learning Environments

Undergraduate Mentorship and Training in the Research Laboratory

Teaching & Learning in Uncertainty: The Role of Care and Kindness in the Classroom

Grading Strategies for Teaching Assistants

Online, In-Person, and In Between: Navigating the Changing Educational Landscape

Personal & Pedagogical Value of Failure

Ecological Society of America Short Courses 2021

Annual Meeting of the Ecological Society of America

Diversity, Equity, Inclusion, and Social Justice into Ecology Curricula

Bringing Computational Data Sciences to Undergraduate Ecology Classroom

Academic Service

Co-President, UTM Biology Graduate Student Society 2022—Present

Secretary, UTM Biology Graduate Student Society 2021—2022

Departmental Steward, Canadian Union of Public Employees 3902 2021—Present

Handle grievances by union members in the department

Liaise between the department and the Local

Member, UTM Biology Equity, Diversity, & Inclusion Committee 2020—2022

Founding graduate student member

Led the development, analysis, and report on EDI in the department

Led qualitative and mixed-method analyses on survey responses
Member, EEB Wellness Committee, University of Toronto 2020—2021
Assisted with developing the EDI survey
Led qualitative and mixed-method analyses on survey responses

Professional Experience

Research Assistant, Department of Biology 5/2018—8/2018
University of Toronto Mississauga
Supervised by Connor Fitzpatrick, Ph.D. and Marc Johnson, Ph.D.
Lab Manager, Odum School of Ecology 1/2013—7/2016
University of Georgia
Supervised by Catherine Pringle, Ph.D.
Research Assistant, Odum School of Ecology 1/2016—5/2016
University of Georgia
Supervised by Amanda Rugenski Ph.D.
Lab Technician, Odum School of Ecology 11/2014—8/2015
University of Georgia
Supervised by Andrea Silletti, M.Sc. and John Drake, Ph.D.
Field Technician, Odum School of Ecology 5/2013
University of Georgia

Professional Engagement

Reviews: Ecosphere (2), Journal of Animal Ecology (2), Oecologia (1), Peer Community in Ecology (4), Proceedings of the Royal Society B: Biological Sciences (1), Soil Biology & Biochemistry (1)
Member: Ecological Society of America, Society for the Study of Evolution, American Society of Naturalists, Canadian Society for Ecology & Evolution