

# David Murray-Stoker

Ph.D. Candidate

University of Toronto

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[dmurraystoker.github.io](https://dmurraystoker.github.io)

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

Education

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

## Publications

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](#)

## Manuscripts (In Prep/Under Review)

3. Miles, L. S.<sup>+</sup>, **D. Murray-Stoker**<sup>+</sup>, V. J. Nhan, and M. T. J. Johnson. Effects of urbanization on specialist herbivorous insect communities of milkweed are mediated by spatial and temporal variation. To be submitted to *Ecosphere*.
2. **D. Murray-Stoker**, K. M. Murray-Stoker, F. P. Kong\*, and F. Amanat\*. Environmental filtering and habitat (mis)matching of riverine invertebrate metacommunities. In review at *Journal of Biogeography*. Submitted on 12 April 2022.
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 review at *Freshwater Biology*. Submitted on 9 March 2022.

\* Undergraduate co-author <sup>+</sup> Co-first authors

## 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

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| 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 |

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| Society for Freshwater Science Undergraduate Travel Award (600 USD)     | 2015 |
| Thelma Richardson & Frank Golley Undergraduate Support Award (2000 USD) | 2013 |

## Presentations

**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

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

### **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

### **Secretary**, UTM Biology Graduate Student Society

2021—Present

### **Member**, UTM Biology Equity, Diversity, & Inclusion Committee

2020—Present

- 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.

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| <b>Lab Manager</b> , Odum School of Ecology<br>University of Georgia<br>Supervised by Catherine Pringle, Ph.D.                        | 1/2013—7/2016  |
| <b>Research Assistant</b> , Odum School of Ecology<br>University of Georgia<br>Supervised by Amanda Rugenski Ph.D.                    | 1/2016—5/2016  |
| <b>Lab Technician</b> , Odum School of Ecology<br>University of Georgia<br>Supervised by Andrea Silletti, M.Sc. and John Drake, Ph.D. | 11/2014—8/2015 |
| <b>Field Technician</b> , Odum School of Ecology<br>University of Georgia   | 5/2013         |

## Professional Engagement

**Reviews:** Ecosphere (2), Oecologia (1), Peer Community in Ecology (2)

**Member:** Ecological Society of America, Society for the Study of Evolution, American Society of Naturalists, Canadian Society for Ecology & Evolution