

# David Murray-Stoker

Ph.D. Candidate

University of Toronto

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[Google Scholar](#)

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

Education

|  |              |
|--|--------------|
| University of Toronto  | 2018–Present |
| Ph.D. in Ecology & Evolutionary Biology                                |              |
| University of Georgia  | 2011–2016    |
| B.S. in Ecology <i>cum laude</i>                                       |              |
| Gainesville State College  | 2010–2011    |
| Prerequisites while dual-enrolled in high school and community college |              |

## Publications

11. 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. 2023. Long-term comparison of invertebrate communities in a blackwater river reveals taxon-specific biomass change. *Freshwater Biology* 68: 632–644. DOI: [10.1111/fwb.14052](https://doi.org/10.1111/fwb.14052) — [Data & Code](#)
10. **D. Murray-Stoker**, K. M. Murray-Stoker, F. P. Kong\*, and F. Amanat\*. 2022. Environmental filtering and habitat (mis)matching of riverine invertebrate metacommunities. *Journal of Biogeography* 12: 2105–2119. DOI: [10.1111/jbi.14501](https://doi.org/10.1111/jbi.14501) — [Data & Code](#) — Selected as Editor’s Choice
9. Miles, L. S.<sup>+</sup>, **D. Murray-Stoker**<sup>+</sup>, 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](#) — Undergraduate Senior Thesis

<sup>+</sup> Equal contributors

<sup>\*</sup> Undergraduate co-author

## 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

#### Course Instructor

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|-------------------------------|------|
| BIO205: Ecology (90 students) | 2023 |
|-------------------------------|------|

#### Teaching Assistantships

#### Teaching Roles

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

|                              |           |
|------------------------------|-----------|
| BIO205: Ecology              | 2018—2020 |
| BIO342: Evolutionary Biology | 2023      |
| BIO360: Biometrics I         | 2019-2021 |

### **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

### **Guest Lecturer**

BIO205: Ecology 2022

Created and presented two original lectures on community ecology

Lecture: “How communities change”

Case study: “Looking back in time”

### **Mentoring Experience**

Elana Maria, Undergraduate Student, Research Opportunity Program 2021

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

### **Pedagogical Training**

#### **Advanced University Teaching Preparation Certificate**

2021—2023

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

Fundamentals of Course and Assessment Design

Avoiding Crickets: Discussion Strategies and Activities

Engaging in Quantitative and Qualitative Data Interpretation

Building a Learning Community

Undergraduate Mentorship and Training in the Research Laboratory

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

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

Grading Strategies for Teaching Assistants

Personal & Pedagogical Value of Failure

Personalizing Your Land Acknowledgement

Dialoguing with Indigenous Perspectives on Reconciliation Education

Contemplative Strategies in an Anti-Oppressive Classroom

Re-Envisioning Discomfort in the Classroom

Cultural Humility in Teaching

### **Teaching in Higher Education Course**

2022

THE500, Woodsworth College, University of Toronto

12-week course focused on the practice of teaching in higher education, with coverage and discussion on topics such as syllabus design, effective learning experiences, universal design for learning, teaching technologies, and accessibility. Included a peer observation and evaluation of teaching practices.

|   |      |
|---|------|
| <b>Ecological Society of America Short Courses</b>                                    | 2021 |
| Annual Meeting of the Ecological Society of America                                   |      |
| Incorporating Diversity, Equity, Inclusion, and Social Justice into Ecology Curricula |      |
| Bringing Computational Data Sciences to Undergraduate Ecology Classroom               |      |

## Academic Service

|   |              |
|---|--------------|
| <b>Co-President</b> , UTM Biology Graduate Student Society            | 2022—Present |
| <b>Secretary</b> , UTM Biology Graduate Student Society               | 2021—2022    |
| <b>Departmental Steward</b> , Canadian Union of Public Employees 3902 | 2021—2022    |
| Handled grievances by union members in the department                 |              |
| Liaised between the department and the Local                          |              |
| <b>Member</b> , 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         |              |
| <b>Member</b> , 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

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

## Professional Engagement

**Reviews:** Ecology Letters (1), Ecosphere (2), Journal of Animal Ecology (3), Oecologia (2), Peer Community in Ecology (6), Peer Community in Evolutionary Biology (2), Proceedings of the Royal Society B: Biological Sciences (2), Soil Biology & Biochemistry (2)

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