

TESS N. GRAINGER

tess.grainger@uoguelph.ca
www.tessgrainger.ca

ACADEMIC POSITIONS

Assistant Professor **Sept 2023-Present**
University of Guelph, Department of Integrative Biology

Maternity leave **2022 (12 months)**

Banting Postdoctoral Fellow **2021-2023**
Biodiversity Postdoctoral Fellow
University of British Columbia, Biodiversity Research Centre
Supervisors: Dr. Sarah Otto, Dr. Rachel Germain and Dr. Mary O'Connor

NSERC Postdoctoral Fellow **2019-2020**
Princeton University, EEB Department
Supervisor: Dr. Jonathan Levine

Maternity leave **2018 (8 months)**

EDUCATION

PhD in Ecology and Evolutionary Biology **2013-2018**
University of Toronto, EEB Department
Supervisor: Dr. Benjamin Gilbert
Visiting student researcher at *Stanford University* **2017**
Supervisor: Dr. Tadashi Fukami

MSc in Botany **2010-2012**
University of British Columbia, Botany Department
Supervisor: Dr. Roy Turkington

BSc in Biology (minor in Anthropology) **2002-2008**
University of Victoria

PUBLICATIONS

Bold = Grainger Lab member *Equal contribution †Shared senior authorship

Davis, KE, **Grainger, TN**, Ke, P, Thompson, PL, O'Connor, MI and Bernhardt, JR. Linking metabolic and modern coexistence theories to predict general effects of warming on competition. In revision at *Ecology Letters*.

Berardi, S, Beltz, JK, Rudman, SM, **Grainger, TN**, Levine, JM, Oken, H and Shmidt, P. Seasonal evolution of *Drosophila melanogaster* abdominal pigmentation is associated with a multifarious selective landscape. In revision at *Evolution*.

Delory, B and 18 co-authors including **Grainger, TN**. Quantifying priority effects in community assembly experiments. In review at *Methods in Ecology and Evolution*.

Breslin, K and **Grainger, TN**. Warming speeds up range expansion in an experimental model system. In press at *Ecology*.

Weiss, L, Barbour, MA, and **Grainger, TN**. An experimental test of the effect of temperature and resources on carrying capacity. In press at *Biology Letters*.

Grainger, TN, Stark, KA, Song, C, †Barbour, MA and †Germain, RM. 2025. The equilibrium conundrum. *Ecology Letters* 28: e70232.

Stark, KA, Clegg, T, Bernhardt, J, **Grainger, TN**, Kempes, CA, Savage, V, †O'Connor, MI and †Pawar, S. 2024. Towards a dynamic Metabolic Theory of Ecology to predict climate change effects on biological systems. *The American Naturalist* 205: 285-305.

Stroud, JT, Delory, BM, Barnes, EM, Chase, JM, De Meester, L, Dieskau, J, **Grainger, TN**, Halliday, FW, Kardol, P, Knight, TM, Ladouceur, E, Little, CJ, Roscher, C, Sarneel, JM, Temperton, VM, van Steijn, T, Werner, CM, Wood, CW and Fukami, T. 2024. Priority effects transcend scale and disciplines in biology. *Trends in Ecology and Evolution* 39: 377-688.

Grainger, TN, *Senthilnathan, A, *Ke, P, Barbour, MA, Jones, NT, DeLong, JP, Otto, SP, O'Connor, MI, Coblentz, KE, Goel, N, Sakarchi, J, Szojka, MC, Levine, JM and Germain, RM. 2022. An empiricist's guide to using ecological theory. *The American Naturalist* 199: 1-20.

- Recommended on Faculty Opinions (X3)
- Featured on the Major Revisions podcast
- Featured on "Top papers of 2021" lists at UC Davis and Stanford

Grainger, TN and Levine, JM. 2022. Rapid evolution of life history traits in response to warming, predation and competition: a meta-analysis. *Ecology Letters* 25: 541-554.

- Recommended on Faculty Opinions

*Henriques, GJB, *Ou, WJ, Senthilnathan, A, Ke, P, †**Grainger, TN** and †Germain, R. 2022. Writing accessible theory in ecology and evolution: insights from Cognitive Load Theory. *BioScience*.

- Recommended on Faculty Opinions

Grainger, TN, Rudman, SM, †Schmidt, P and †Levine, JM. 2021. Competitive history shapes rapid evolution in a seasonal climate. *Proceedings of the National Academy of Sciences* 118: e2015772118.

Grainger, TN, Levine, JM and Gilbert, B. 2019. The invasion criterion: a common currency for ecological research. *Trends in Ecology and Evolution* 34: 925-935.

- Germain, RM, Jones, NT and **Grainger, TN**. 2019. Cryptic dispersal networks shape biodiversity in an invaded landscape. *Ecology* 100: e02738.
- Grainger, TN**, Letten, AD, Gilbert, B and Fukami, T. 2019. Applying modern coexistence theory to priority effects. *Proceedings of the National Academy of Sciences* 116: 6205-6210.
- Smith, J, Letten, AD, Ke, P, Anderson, CB, Hendershot, JN, Flanders, J, Dhimi, MK, **Grainger, TN**, San Juan, P, Dlott, GA, Howard, ME, Morrison, BML, Routh, D, Crowther, T and Daily, GC. 2018. A global test of ecoregions. *Nature Ecology and Evolution* 2: 1889-1896.
- Germain, RM, **Grainger, TN**, Jones, N and Gilbert, B. 2018. Maternal provisioning is structured by species' competitive environments. *Oikos* 128: 45-53.
- Grainger, TN**, Rego, AI and Gilbert, B. 2018. Temperature-dependent species interactions shape priority effects and the persistence of unequal competitors. *The American Naturalist* 191: 197-209.
- Wong, L, **Grainger, TN**, Start, D and Gilbert, B. 2017. An invasive herbivore structures plant competitive dynamics. *Biology Letters* 13: 20170374.
- Grainger, TN** and Gilbert, B. 2017. Multi-scale responses to warming in an experimental insect metacommunity. *Global Change Biology* 23: 5151-5163.
- Featured on *Conservation Corridor*
- Grainger, TN**, Germain, RM, Jones, NT and Gilbert, B. 2017. Predators modify biogeographic constraints on species distributions in an insect metacommunity. *Ecology* 98: 851-860.
- Grainger, TN** and Gilbert, B. 2016. Dispersal and diversity in experimental metacommunities: linking theory and practice. *Oikos* 125: 1213-1223.
- Editor's choice
- Jones, NT, Germain, RM, **Grainger, TN**, Hall, A, Baldwin, L and Gilbert, B. 2015. Dispersal mode mediates the effect of patch size and patch connectivity on metacommunity diversity. *Journal of Ecology* 103: 935-944.
- Zhang, J, Nielsen, SE, **Grainger, TN**, Kohler, M, Chipchar, T, and Farr, D. 2014. Sampling landscape-scale plant diversity and rarity: the importance of sampling time in species detectability. *PLoS ONE* 9: 95334.
- Grainger, TN** and Turkington, R. 2013. Long-term nutrient enrichment differentially affects investment in sexual reproduction in four boreal forest understory species. *Plant Ecology* 214: 1017-1026.
- Grainger, TN** and Turkington, R. 2013. Mechanisms for success after long-term nutrient enrichment in a boreal forest understory. *PLoS ONE* 8: 61229.
- Grainger, TN** and Turkington, R. 2012. Germinability of *Epilobium angustifolium* seeds from plants treated annually with fertilizer for twenty-two years. *Davidsonia* 22: 2-8.

GRANTS and AWARDS

2024 - NSERC Discovery Grant **(\$212,500)**

2024 - Canadian Foundation for Innovation John R. Evans Leaders Fund **(\$168,000)**

2021 - *Early Career Award*, Canadian Society of Ecology and Evolution

2021 - *Jasper Loftus-Hills Young Investigator Award*, American Society of Naturalists

2021 - Banting Postdoctoral Fellowship **(\$140,000)**

2020 - UBC Biodiversity Postdoctoral Fellowship **(\$114,000)** (\$88,000 accepted)

2020 - UBC Grant for Catalyzing Research Clusters (co-PI with R. Germain) **(\$18,000)**

2018 - NSERC Postdoctoral Fellowship **(\$90,000)**

2017 - *Excellence in PhD Research Award*, Canadian Society for Ecology and Evolution

2017 - *Ramsay Wright Award for PhD Excellence*, EEB Department, U of T

2017 - NSERC Michael Smith Foreign Study Supplement – for research at Stanford **(\$6000)**

2016 - Jeanne F. Goulding Fellowship, U of T **(\$4500)**

2014 - NSERC Alexander Graham Bell CGS - Doctoral Scholarship **(\$105,000)**

2012 - W. Garfield Weston Award for Northern Research **(\$15,000)**

2011 - NSERC Alexander Graham Bell CGS - Masters Scholarship **(\$17,500)**

PRESENTATIONS

Invited

2025 - *Michigan State University*. East Lansing, MI. Invited seminar.

2025 - *Kellogg Biological Station*. Hickory Corners, MI. Invited seminar.

2025 - *Iowa State University*. Ames, IA. Invited seminar.

2025 - *Brock University*. St. Catharines, ON. Invited seminar.

2024 - *University of Tennessee*. Knoxville, TN. Invited seminar.

2024 - *Buffalo State University*. Buffalo, NY. Invited seminar.

2023 - *University of Oregon*. Eugene, OR. Invited seminar.

2023 - *Ecological Society of Japan Meeting*. Online. Invited speaker in organized symposium.

2023 - *ASN Meeting*. Asilomar, CA. Invited speaker in organized symposium.

2022 - *World Biodiversity Forum*. Davos, Switzerland. Invited speaker in organized symposium.

2022 - *University of Waterloo*. Waterloo, ON. Invited seminar.

2021 - *University of Pittsburgh*. Pittsburgh, PA. Invited seminar.
2021 - *University of Guelph*. Guelph, ON. Invited seminar.
2021 - *CSEE Annual Meeting*. Virtual. Early Career Award Winners Symposium.
2021 - *Evolution Annual Meeting*. Virtual. ASN Young Investigators Award Symposium.
2020 - *York University*. Toronto, ON. Invited seminar.
2017 - *UC Davis*. Davis, CA. Invited seminar for the Plant-Insect Group.
2017 - *Stanford University*. Palo Alto, CA. Invited seminar for the Eco-Evo Group.

Contributed

2024 - CSEE Annual Meeting, Vancouver, BC. Contributed talk.
2023 - CSEE Annual Meeting, Winnipeg, MB. Contributed talk.
2022 - *Simon Fraser University*. Burnaby, BC. Seminar for the Les Ecologistes series.
2020 - *University of British Columbia*. Vancouver, BC. Internal seminar.
2019 - *ESA Annual Meeting*. Louisville, KY. Contributed talk.
2018 - *CSEE Annual Meeting*. Guelph, ON. Contributed poster.
2017 - *University of Toronto*. Toronto, ON. Departmental seminar.
2017 - *ESA Annual Meeting*. Portland, OR. Contributed talk.
2017 - *CSEE Annual Meeting*. Victoria, BC. Graduate Student Showcase Symposium.
2016 - *CSEE Annual Meeting*. St. John's, NL. Contributed talk.
2015 - *ESA Annual Meeting*. Baltimore, MD. Contributed talk.
2014 - *CSEE Annual Meeting*. Montreal, QC. Contributed poster.
2012 - *Northwest Science Annual Meeting*. Boise, ID. Contributed talk.
2012 - *ESA Annual Meeting*. Portland, OR. Contributed poster.
2012 - *Pacific Ecology and Evolution Conference*. Bamfield, BC. Contributed poster.
2012 - *Graduate Student Symposium, UBC*. Vancouver, BC. Contributed talk.

MENTORING

Students supervised

University of Guelph (principal supervisor)

Sydney Chong-King (MSc)

Kate Robinson (MSc)

Sav Edwards (MSc)

Kayley Breslin (NSERC USRA and IBIO*4500 independent research project)

Caitlin Barton (4th year thesis student)

Emma Gruntz (4th year thesis student)

Laina Weiss (IBIO*4500 independent research project)

Anik Chhoker (Work Study undergraduate research assistant)

Nicole Byrne (Work Study undergraduate research assistant)

Other institutions (co-supervision)

Will Ou, *UBC* (MSc, independent research funded by Catalyzing Research Clusters grant, co-first author on publication #17)

Gil Henriques, *UBC* (PhD, independent research funded by Catalyzing Research Clusters grant, co-first author on publication #17)

Melanie Tan, *UBC* (Work Learn undergraduate research assistant)

Gwendolyn Clark, *U of T* (work study undergraduate on Parental Leave Policies Project)

Yerin Lee, *U of T* (work study undergraduate on Parental Leave Policies Project)

Yonatan Babore, *UPenn* (Penn Access Summer Scholars diversity research experience)

Lydia Wong, *U of T* (NSERC USRA, first author on publication #9)

Adam Rego, *U of T* (independent 3rd year research project, second author on publication #10)

Zachary Moore, *U of T* (KSR Undergraduate Research Award)

Veronica Chong, *U of T* (NSERC USRA)

Ilana Tavshunsky, *U of T* (third year undergraduate research excursion course)

Deirdre Loughnan, Enxhi Kondi, Richard La and Grant de Jong, *U of T* (work study students)

Douglas Curley, *U of T* (NSERC Undergraduate Student Research Award)

De Wet van Niekerk, *U of T* (third year undergraduate research project)

SERVICE

Reviewer for: *The American Naturalist, Biological Journal of the Linnean Society, Biological Reviews, Ecology Letters, Evolution, Evolutionary Ecology, Frontiers in Ecology and the Environment, Global Ecology and Biogeography, Journal of Animal Ecology, Journal of Applied Ecology, Journal of Biogeography, Journal of Forestry Research, Movement Ecology, Nature Communications, Oecologia, Oikos, Proceedings of the Royal Society B, Philosophical Transactions of the Royal Society B, Plos One, Plant Ecology and Diversity, Scientific Reports, Trends in Ecology and Evolution*

Symposium Organizer, Canadian Society of Ecology and Evolution

2024

“Connecting theory and empirical research in ecology and evolutionary biology”

Search/Awards Committee Member **2016-Present**

Departmental Chair Search Committee (U of G Integrative Biology – 2024)

Canadian Botanical Association J. Stan Rowe Award (2024)

Biodiversity Postdoctoral Fellow Search Committee (Biodiversity Research Centre UBC – 2022)

Disease Faculty Search Committee (EEB Department U of T - 2016)

CSEE Doctoral Award Assessment Committee (2022)

Mentor, EEB Mentor Match program **2024-Present**

Co-Lead, Parental Leave Policies Project (UBC, U Minnesota and U of T) **2020-2023**

Co-leading a project (with Dr. Amanda Gordon) to compile a comprehensive database on paid parental leave policies for graduate students, postdoctoral fellows and faculty across Canadian and American universities.

Departmental Organizing (Biodiversity Research Centre, UBC) **2021-2022**

Organized social events, a workshop (“Becoming a parent in academia”), the Biodiversity Research Centre’s Internal Seminar Series (“BLISS”), and a one-day symposium.

Founding Member, ‘BREWS’ Initiative (EEB Department, U of T) **2016-2018**

Co-founded a group of faculty, postdocs and grad students to organize data-driven talks and networking opportunities to promote the issue of under-representation of women in STEM. This group is still ongoing and active at U of T.

Founding Mental Health Representative (EEB Department, U of T) **2014-2017**

Created a new position to improve grad student mental health. Designed and organized departmental workshops (e.g., “Faculty Failure Stories”, “Coping with Grad School”), worked with faculty and administrators to improve services and acted as ombudsperson to graduate students. This position was expanded into a committee that is still ongoing and active at U of T.

Symposium Organizer, Canadian Society of Ecology and Evolution **2016**

“The interplay between ecology and evolution in spatially-structured landscapes”

Committee Member, GradMinds (U of T Graduate Mental Health Committee) **2013-2016**

Mentor, Planting Science **2014-2015**

Mentor, Women in Science and Engineering (WISE) **2012**

Mentor, Let’s Talk Science **2012**