Dr. Amanda Liczner

Postdoctoral Research Fellow
University of Guelph
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FELLOWSHIPS

Postdoctoral Research Fellow May 2021 – current
University of Guelph
Supervisor: Dr. Nigel Raine
Research topic: Impacts of environmental stressors on bumble bee movement.

Postdoctoral Research Fellow Sept 2020-Feb 2022
University of British Columbia Okanagan, BRAES Institute
Supervisors: Dr. Jason Pither, Dr. Adam Ford, Dr. Lael Parrot, Dr. Josie Hughes, Dr. Richard Pither
Research topic: Connectivity conservation challenges in landscape ecology

EDUCATION

PhD in Biology 2020
York University, Toronto, ON
Supervisor: Dr. Sheila Colla
"The conservation management and ecology of Northeastern North American bumble bees."

MSc in Biology 2016
York University, Toronto, ON
Supervisor: Dr. Christopher Lortie
"Nursing back to health: Shrubs facilitate the restoration of native forbs with reductions in non-native competition in an invaded arid shrubland."

BSc (Specialized Honors) in Biology 2014
York University, Toronto, ON
Supervisor: Dr. Christopher Lortie
Honors thesis: "*A desert nurse plant (Larrea tridentata) facilitates the germination and seed characteristics of winter annuals in California."*

PUBLICATIONS

13. **Liczner AR,** Bowman J, Fletcher R, Ford A, Hall K, Mitchalak J, Parrot L, Pither R, Rayfield B, Wittische J, Pither J. 2024. Advances and challenges in ecological connectivity science. Ecology and Evolution, 14, e70231.
12. Lortie, C. J., **Liczner, A.,** Ruttan, A., Braun, J., Sotomayor, D. A., Westphal, M., King, R., & Filazzola, A. (2023). Patronus charm: a comparison of benefactor plants and climate mediation effects on diversity. Oikos, e10292.
11. **Liczner AR**, Schuster R, Richardson LL, Colla SR. 2023. Identifying conservation priority areas for North American bumble bee species in Canada under current and future climate scenarios. Conservation Science and Practice. 5(8) e12994.

10. **Liczner AR**, MacPhail VP, Woollett (Smith) DA, Richards NL, Colla SR. 2021. Training and usage of detection dogs to better understand bumble bee nesting habitat: Challenges and opportunities. PLoS ONE 16(5): e0249248
9. **Liczner AR**, Colla SR. 2020. One-size does not fit all: Bumble bee conservation requires landscape-scale and species-specific habitat considerations. Journal of Insect Conservation and Diversity. 13(6): 558-570
8. **Liczner AR**, Colla SR. 2019. A systematic review of the nesting and overwintering habitat of bumble bees globally. Journal of Insect Conservation. 23 (5-6): 787-801
7. **Liczner AR**, Filazzola A, Westphal M, Lortie CJ. 2019. Shrubs facilitate native forb re-establishment in an invaded arid shrubland. Journal of Arid Environments. 17 (103998): 1-9
6. Filazzola A, **Liczner AR**, Westphal M, Lortie CJ. 2019. Shrubs indirectly increase desert seedbanks through facilitation of the plant community. PloS One. 14 (4): e0215988
5. Gibson SD, **Liczner AR**, Colla SR. 2019. Conservation Conundrum: At-risk bumble bees (*Bombus* spp.) show preference for invasive tufted vetch (*Vicia cracca*) while foraging in protected areas. Journal of Insect Science. 19 (2): 1-10
4. Filazzola A, **Liczner AR**, Westphal M. Lortie CJ. 2018 The effect of consumer pressure and abiotic stress on positive plant interactions are mediated by extreme climatic events. New Phytologist 217 (1): 140-150
3. Filazzola, A, Westphal M, Powers M, **Liczner AR**, Woollett DAS, Johnson B, Lortie CJ. 2017. Non-trophic interactions in deserts: Facilitation, interference, and an endangered lizard species. Basic and Applied Ecology 20 (1): 51-61
2. **Liczner AR**, Sotomayor DA, Filazzola A, Lortie CJ. 2017 Germination response of desert annuals to shrub facilitation is species specific but not ecotypic. Journal of Plant Ecology 10 (2): 364-374
1. **Liczner AR,** Lortie CJ. 2014. A global meta-analytic contrast of cushion-plant effects on plants and on arthropods. Peerj, 2: e265

IN REVIEW

Liczner AR, Fitch G, Colla SR. 2024. Assessing pathogen risk for wild bumblebees (Bombus spp. Apidae) in Canada. Conservation Science and Practice. CSP2-24-0555

MOST IMPORTANT PUBLICATIONS

Liczner AR, Schuster R, Richardson LL, Colla SR. 2023. Identifying conservation priority areas for North American bumble bee species in Canada under current and future climate scenarios. Conservation Science and Practice. 5(8) e12994.

Liczner AR, Colla SR. 2020. One-size does not fit all: Bumble bee conservation requires landscape-scale and species-specific habitat considerations. Journal of Insect Conservation and Diversity. 13(6): 558-570

Liczner AR, Colla SR. 2019. A systematic review of the nesting and overwintering habitat of bumble bees globally. Journal of Insect Conservation. 23 (5-6): 787-801

INVITED PRESENTATIONS

7. **Liczner AR***, MacPhail V, Woolett D, Richards N, Colla S. Using detection dogs to find bumble bee nests: lessons learned. United States Fish and Wildlife Service (USFWS) rusty-patched bumble bee seminar series. Virtual.
6. **Liczner AR***, Franklin E, Rondeau S, Raine N. 2024. Using radio-telemetry to discover habitat selection and movement behaviour of bumble bees. Joint meeting of the Entomological Societies of Canada and Quebec. Quebec City, Canada.

5. **Liczner AR***, Franklin E, Raine N. 2023. Understanding bubmle bee behaviour through tracking their movements. United States Fish and Wildlife Service (USFWS) rusty-patched bumble bee seminar series. Virtual.
4. **Liczner AR*,** Franklin E, Rondeau S, Raine N. 2023. Conserving bees by tracking their needs: Using radio telemetry to study bumble bee habitat and investigate impacts of stressors. BOMBUSS 3.0, San Cristobal, Mexico.
3. **Liczner AR***. 2023. Identifying conservation needs by tracking bees. Rare Charitable Research Reserve Ambassador's Event. Cambridge, Ontario, Canada.
2. **Liczner AR***. 2021. Conservation of bumble bees and landscape connectivity. University of Calgary Department Seminar Series.
1. **Liczner AR*,** Colla SR. 2019. On a quest for bee nests. High Park Nature Centre Wild Bee Series. Oral Presentation.

*Presenting author

CONFERENCE PRESENTATIONS

26. **Liczner AR***, Franklin E, Rondeau S, Raine N. 2024. Using radio-telemetry to discover habitat selection and movement behaviour of bumble bees. Joint Annual Meeting of the Entomological Societies of Canada and Quebec. Quebec City, Quebec, Canada.
25. **Liczner AR***, Franklin E, Raine N. 2024. Overwintering and nesting behaviour of bumble bees unveiled using radio telemetry. Animal Behaviour Society, London, Canada.
24. **Liczner AR*,** Franklin E, Raine N. 2023. Flying in the face of danger? Flight behaviour impacts for bumble bee queens exposed to systemic insecticides. International Pollinator Conference. State College, Pennsylvania, USA.
23. **Liczner AR,** Franklin E, Raine N*. 2022. She moves in mysterious ways: tracking bumble bee queen movement to identifying critical habitat gaps. Joint Entomological Society of America and Canadian Entomological Society Annual Meeting. Vancouver, British Columbia, Canada. Oral Presentation
22. **Liczner AR*,** Franklin E, Raine N. 2022. Impacts of systemic insecticide exposure on the movement ecology of bumble bee queens. Joint Canadian Society of Ecology and Evolution (CSEE) and Ecological Society of America (ESA) conference. Montreal, Quebec. Oral Presentation.
21. **Liczner AR*,** MacKell S. 2021. Does soil temperature determine bumble bee queen emergence timing? Canadian Society for Ecology and Evolution (CSEE) Annual Conference. Virtual. Oral Presentation.
20. **Liczner AR***, Richardson L, Schuster R, Colla SR. 2021. Conservation priority areas for Canadian bumble bee species under current and future climate scenarios. Canadian Parks Collective for Innovation and Leadership (CPCIL) Research Summit. Virtual Conference. Eposter.
19 **Liczner AR***, Richardson L, Schuster R, Colla SR. 2020. Conservation priority areas for Canadian bumble bee species under current and future climate scenarios. BeeCon 2020. Virtual Conference. Oral presentation.
18. **Liczner AR*,** Richardson L, Schuster R, Colla SR. 2020. Conservation priority areas for Canadian bumble bee species under current and future climate scenarios. North American Congress for Conservation Biology Conference. Virtual Conference. Oral presentation.
17. **Liczner AR***, MacPhail V, Colla SR. 2019. Using detection dogs to find bumble bee nests: Lessons learned. Credit Valley Research Colloquium. Mississauga, Ontario. Oral Presentation.
16. **Liczner AR***, MacPhail V, Colla SR. 2019. Using detection dogs to find bumble bee nests: Lessons learned. BOMBUSS 2.0. Toronto, Ontario. Oral Presentation.
15. **Liczner AR,** Colla SR*. 2019. Think big: Landscape-scale habitat variables are more important than

local-scale factors for determining at-risk bumble bee habitat. International Pollinator Conference University of California Davis, Sacramento, California. Poster Presentation

14. **Liczner AR*,** Colla SR. 2019. Think big: Landscape-scale habitat variables are more important than local-scale factors for determining at-risk bumble bee habitat. 45th Annual Association of Graduate Students in the Biological Sciences Symposium. Toronto, Ontario. Poster Presentation
13. **Liczner AR*,** Colla SR. 2018 Using citizen scientists and detection dogs to locate bumble bee nests. BeeCon. Toronto, Ontario. Oral Presentation
12. **Liczner AR***, Colla SR. 2018 Determining the habitat for at-risk bumble bee species in Southern Ontario. Society for Conservation Biology North American Congress for Conservation Biology Conference. Toronto, Ontario. Oral Presentation.
9. **Liczner AR***, Colla SR. 2018 Determining the habitat for at-risk bumble bee species in Southern Ontario. Canadian Society for Ecology and Evolution Conference. Guelph, Ontario. Poster Presentation.
9. **Liczner AR*,** Colla SR. 2017. Assessing at-risk bumble bee habitat in Ontario for the conservation of declining species. Canadian Society for Ecology and Evolution Conference. Victoria, British Columbia
9. **Liczner AR***, Colla SR. 2017. Assessing at-risk bumble bee habitat in Ontario for the conservation of declining species. BeeCon. Toronto, Ontario. Poster Presentation
8. Filazzola A*, **Liczner AR**, Westphal MF, Lortie CJ. 2017. The effect of consumer pressure and abiotic stress on positive plant interactions are mediated by extreme climatic events 43rd Annual Association for Graduate Students in the Biological Sciences Symposium. Toronto, Ontario. Poster Presentation.
7. **Liczner AR*,** Colla SR. 2017. Assessing at-risk bumble bee habitat in Ontario for the conservation of declining species. 43rd Annual Association of Graduate Students in Biology Symposium. Toronto, Ontario. Poster Presentation.
6. **Liczner AR*,** Sotomayor DA, Filazzola A, Lortie CJ. 2016 Germination response of desert annuals to shrub facilitation is species specific but not ecotypic. York University Biology Day Conference. Toronto, Ontario. Poster Presentation.
5. Filazzola A*, **Liczner AR,** Westphal MF, Lortie CJ. 2016. A test of the stress-gradient hypothesis including both abiotic stress and consumer pressure during an extreme drought year. Ecological Society of America Conference. Fort Lauderdale, Florida. Oral Presentation
4. **Liczner, AR*,** Filazzola, A, Lortie, CJ. 2016. The use of shrubs as a tool for re-establishing native annuals to an invaded arid shrub land. Ecological Society of America Conference. Fort Lauderdale, Florida. Oral Presentation.
3. Filazzola A*, Westphal MF, Liczner AR, Powers M, Johnson B, Lortie CJ. 2015. The realized niche of the endangered blunt-nosed leopard lizard is determined by an interplay between native shrub cover and invasive grass abundance. Ecological Society of America Conference. Baltimore, Maryland. Oral Presentation.
2. Filazzola A*, **Liczner AR,** Westphal MF, Lortie CJ. 2015. The habitat of the endangered Blunt-nosed leopard lizard is determined by an interplay between native shrub cover and invasive grass abundance. Conservation Conference California Natural Plant Society. San Jose, California. Oral Presentation
1. **Liczner AR*.** 2014. Cushion plant effects on seed germination in an alpine environment. Northern Studies Training Program Symposium. Toronto, Ontario. Oral Presentation.

*Presenting author

AWARDS

National Sciences and Engineering Research Council of Canada Postdoctoral Fellowship (NSERC PDF) 2023-2025
University of Guelph
Awarded $90,000

Banting Postdoctoral Fellowship 2023
University of Guelph
Nominated by the University of Guelph

Webster Postdoctoral Fellowship 2022
University of Guelph
Awarded $10,000

Susan Mann Dissertation Scholarship 2020
York University
One of nine scholarships awarded at York University
Awarded $22,500

Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarship (NSERC-PGS D) 2018-2020
York University
One of ten NSERC scholarships awarded at York University,
Awarded $42,000

Ontario Graduate Scholarship 2018-2019
York University
Declined to accept NSERC-PGS D

Vanier Canada Graduate Scholarship—Nominated 2018
York University
Nominated by York University for the Vanier Scholarship

Ontario Graduate Scholarship 2017-2018
York University
One of five award winners in the Dept. of Biology,
Awarded $15,000

Research/Fieldwork Cost Fund 2017-2019
York University
Internal award determined by the Faculty of Graduate Studies
Awarded $2,380

Graduate Development Fund 2016-2017
York University
Internal award determined by the Faculty of Graduate Studies
Awarded $600

The Carswell Scholarship 2016-2017

York University
One of six award winners in the Faculty of Science
Awarded $10,000

Ontario Graduate Scholarship 2016-2017
York University
One of nine award winners in the Dept. of Biology
Awarded $15,000

Graduate Development Fund 2016
York University June 2016
Internal award determined by the Faculty of Graduate Studies,
Awarded $750

Research Cost Fund 2015-2017
York University
Internal award determined by the Faculty of Graduate Studies
Awarded $960

York Graduate Scholarship 2014-2015
York University
Entrance scholarship awarded by the Dept. of Biology,
Awarded $6,000

RESEARCH GRANTS

Ontario Species at Risk Stewardship Program 2019-2020
Ontario Ministry of Environment, Conservation and Parks
Awarded $25,717

VOLUNTEER EXPERIENCE AND COMMUNITY INVOLVEMENT

A. Departmental/Faculty

Committee on Teaching and Learning Graduate Student representative 2018-2020
Faculty of Science, York University, Toronto, Ontario
One of two graduate student representatives giving input on TA training initiatives and adjudicating teaching awards

AGSBS Communications Officer 2019-2020
Association of the Graduate Students in the Biological Sciences (AGSBS), York University, Toronto, Ontario
Responsible for maintaining the AGSBS social media accounts, and website

AGSBS Department of Biology Student Representative 2018-2019
Association of the Graduate Students in the Biological Sciences (AGSBS), York University, Toronto, Ontario
Responsible for representing graduate student interests to the Dept. of biology

AGSBS Symposium Committee Chair 2017-2018
Association of the Graduate Students in the Biological Sciences (AGSBS), York University, Toronto,

Ontario.
Lead the planning of the annual biology graduate student symposium including organizing meetings, securing funding, and promoting the event attended by 110 participants

AGSBS Symposium Committee Member 2016-2017
Association of the Graduate Students in the Biological Sciences (AGSBS), York University, Toronto, Ontario
Organized the annual biology graduate student symposium for 100 attendees

Canadian Society for Ecology and Evolution (CSEE) Student Representative 2016-2020
York University, Toronto, Ontario
York University graduate student representative for CSEE, encouraging York student involvement and distributing information about the society.

OE3C Symposium Committee Organizer 2014-2015
Ontario Ecology, Ethology, and Evolution Colloquium, York University, Toronto, Ontario
Organized the annual provincial symposium Ontario Ecology, Ethology, and Evolution Colloquium with ~140 attendees.

B. Other Academic

Entomological Societies of Canada and Quebec symposium organizer 2024
Quebec City, Canada
Co-organizer of a symposium "Methods and tools for studying wild pollintor research"

Pollinator Week Working Group 2023
Sustainability Office, University of Guelph, Guelph, Ontario
Organizing pollinator week educational events including bumble bee identification workshops for students, community members, and members of the public.

Canadian Society of Ecology and Evolution (CSEE) volunteer organizer March – August 2021
University of British Columbia Okanagan, Kelowna, British Columbia.
Volunteer member of the social media and communications, and program development committees for the 2021 virtual CSEE conference.

Pacific Ecology and Evolution Conference 2021 Virtual Presentation Judge
University of British Columbia Okanagan, Kelowna, British Columbia February 2021
Student presentation judge for a virtual conference for universities in Western Canada and the United States of America.

NACCB 2020 contributed symposium organizer July 2020
North American Congress for Conservation Biology virtual conference
Lead organizer for a contributed symposium titled "Prioritization in Conservation: Tools and Considerations."

C. Non-academic

Pollination Guelph – Board of director's member at large 2023 – Current
Contribute to educating the public on pollinator conservation, pollinator friendly activities and pollinator identification.

Bumble Bee Watch Expert Identifier 2021- Current
Bumble bee Watch
Volunteer expert bumble bee identifier for Northeastern North American bumble bees,

BioBlitz Planning Committee Organizer – Chair 2017
Organized York University's first BioBlitz event. Educated members of the York University community (120 participants) on species identification, biodiversity, and conservation.

Bumble Bee Conservation Outreach Volunteer 2017
City Cider Festival, Toronto, Ontario
Educated children and adults (1200 event participants) about bumble bee conservation and encouraged involvement in bumble bee monitoring citizen science projects.

Bumble Bee Conservation Outreach Volunteer 2017
General Mercer Junior Public School, Toronto, Ontario
Educated children (50) and adults (30) about bumble bee conservation and encouraged involvement in bumble bee monitoring citizen science projects.

D. Reviewer service

Insect Conservation and Diversity (5), Plant Ecology (3), Journal of Natural History (3), Oikos (2), Restoration Ecology (2), Annals of the Entomological Society of America (1), Conservation Science and Practice (1), Ecological Entomology (1), Ecology (1), Ecology and Evolution (2), Environmental Entomology (1), Forest Ecology and Management (1), Frontiers in Ecology and Evolution (1), Insects Sociaux (1), Nature Sustainability (1), Scientific Reports (1)
Total = 26

TEACHING EXPERIENCE

A. Guest Lectures

BIOL 306 Ecology of Animals 2021
University of British Columbia Okanagan, 40 students
Bumble Bee Ecology and Conservation

BIOL1001 Biology II—Evolution, Ecology, Biodiversity and Conservation Biology 2019
York University, 500 students
Life History Traits and Bumble Bee Ecology

DATT4010 Physical Computing III: Environmental Sensing and Art, 2017
York University, 50 students
Importance of Environmental Monitoring for Restoration Science.

B. Teaching Assistantships

Laboratory Coordinator—BIOL 1000 3.0 Biology I—Cells, Molecular Biology and Genetics
York University, Fall 2019, 2400 students

Laboratory Demonstrator—BIOL 2010 3.0 Plant Biology
York University, Winter 2019, 20 students

Laboratory Coordinator—BIOL 1000 3.0 Biology I—Cells, Molecular Biology and Genetics

York University, Fall 2018, 2400 students

Laboratory Coordinator – BIOL 1001 3.0 Biology II— Evolution, Ecology, Biodiversity and Conservation Biology
York University, Winter 2018, 2000 students

Laboratory Coordinator – BIOL 2050 3.0 Ecology
York University, Fall 2017, 180 students

Laboratory Coordinator – BIOL 1001 3.0 Biology II- Evolution, Ecology, Biodiversity and Conservation Biology
York University, Winter 2017, 2100 students

Laboratory Demonstrator – BIOL 2050 3.0 Ecology
York University Fall 2016, 24 students

Marker – BIOL 2050 3.0 Ecology
York University, Fall 2016, 200 students

Laboratory Coordinator – BIOL 1001 3.0 Biology II—Evolution, Ecology, Biodiversity and Conservation Biology
York University, Summer 2016, 500 students

Laboratory Demonstrator – BIOL 2050 3.0 Ecology
York University Fall 2015, 44 students

Laboratory Demonstrator – BIOL 1001 3.0 Biology II -Evolution, Ecology, Biodiversity and Conservation Biology
York University, Summer 2015, 40 students

Laboratory Demonstrator – BIOL 2050 3.0 Ecology
York University, Fall 2014, 40 students.

MEDIA COVERAGE AND OTHER PUBLICATIONS

Abi Hayward 2024. Bees with backpacks. Canadian Geographic. https://canadiangeographic.ca/articles/bees-with-backpacks/

Luke Roman 2023. Tracking the flight of bumblebees, Canadian researchers hope to learn how pesticides can m uddle their minds. Globe and Mail. https://www.theglobeandmail.com/canada/article-tracking-the-flight-of-bumblebees-canadian-researchers-hope-to-learn/

Anam Khan. 2021. Where do bumble bees buzz overwinter? Guelph Today. https://www.guelphtoday.com/grounded/where-do-bumble-bees-buzz-in-the-winter-4470216

Leah Gerber. 2021 Tiny radio transmitters tracking effects of pesticides on bumblebees. The Waterloo Record. https://www.therecord.com/news/waterloo-region/2021/09/02/tiny-radios-tracking-effect-of-pesticides-on-bumblebees-in-cambridge-study-by-university-of-guelph-researchers.html

Amanda Liczner 2021. Nosing out nests – can detection dogs be used to find bumble bee nests? Wildlife Preservation Canada Blog. https://wildlifepreservation.ca/blog/nosing-out-nests-can-detection-dogs-be-used-to-find-bumble-bee-nests/

Amanda Liczner. 2018. Buzzing down the house: An Update. Nature Conservancy of Canada Blog

Amanda Liczner. 2017. Buzzing down the house: Determining the habitat for declining bumble bee species. Nature Conservancy of Canada Blog

Kate Allen 2017. Climate change and the great global species shakeup. Toronto Star. December 9, 2017 http://projects.thestar.com/climate-change-global-species-shakeup/