

James S. Santangelo

3359 Mississauga Road
Department of Biology, University of Toronto Mississauga
Mississauga, ON, L5L 1C6

email: james.santangelo37@gmail.com
website: james-s-santangelo.github.io/
code/data: github.com/James-S-Santangelo

EDUCATION & APPOINTMENTS

PhD	<i>University of Toronto</i> Department of Ecology and Evolutionary Biology Advisors: Marc T. J. Johnson and Rob W. Ness Thesis: Evolutionary processes in urban environments	Sept. 2016 - 2022
HBSc	<i>University of Toronto Mississauga</i> Department of Biology Faculty supervisor: Marc T. J. Johnson Graduate student advisor: Nash E. Turley Thesis: The effects of fungal endophyte infection in mediating the competitive ability of the host grass, <i>Festuca rubra</i>	Sept. 2009 - June 2015

PUBLICATIONS

(# Manuscripts/chapters = 14; # First-authored = 9; [Google Scholar](#))

Published and Accepted Manuscripts [†]Mentee authors

13. Verrelli, Brian C., Alberti, M., Des Roches, S., Harris, N. C., Hendry, A. P., Johnson, M. T. J., Savage, A. M., Chanrmantier, A., Gotanda, K. M., Govaert, L., Miles, L. S., Rivkin, L., R., Winchell, K. M., Brans, K. I., Correa, C., Diamond, S. E., Fitzhugh, B., Grimm, N. B., Hughes, S., Marzluff, J. M., Munshi-South, J., Rojas, C., **Santangelo, J. S.**, Schell, C., J., Schweitzer, J. A., Szulkin, M. C., Zhou, Y., and Ziter, C. A global horizon scan for urban evolutionary ecology. *Trends in Ecology & Evolution*. [Online ahead of print](#)
12. Innes, S. G., **Santangelo J. S.**, Kooyers, N. J., Olsen, K. M., Johnson, M. T. J. Evolution in response to climate in the native and introduced ranges of a globally distributed plant. *Evolution* 76: 1495-1511.
11. **Santangelo J. S.**, and The Global Urban Evolution Project (GLUE). Global urban environmental change drives adaptation in white clover. *Science* 375: 1275-1281. [PDF](#) [GitHub](#) [Learn more about GLUE](#)
10. **Santangelo J. S.**, L. Ruth Rivkin, [†]Advenard, C., Thompson, K. A. (2020). Multivariate phenotypic divergence along an urbanization gradient. *Biology Letters* 16: 20200511. [PDF](#) [GitHub](#)
9. **Santangelo J. S.**, Thompson, K. A., [†]Cohan, B., [†]Syed, J., Ness, R. W., and Johnson, M. T. J. (2020). Predicting the strength of urban-rural clines in a Mendelian polymorphism along a latitudinal gradient. *Evolution Letters* 4: 212-225. [PDF](#) [GitHub](#)
8. Johnston L., Bonsma-Fisher M., Ostblom J., Hasan A., **Santangelo J. S.**, Tran L., Sales de Andrade E., Coome L., and Mahallati S. (2019). A graduate student-led participatory live-coding quantitative methods course in R: Experiences on initiating, developing, and teaching. *Journal of Open Source Education* 2: 6-11. [PDF](#) [GitHub](#)

7. L. Ruth Rivkin, **Santangelo J. S.**, Alberti M., Aronson M. F. J., de Keyser C. W., Diamond S. E., Fortin M.-J., Frazee L. J., Gorton A. J., Hendry A. P., Liu Y., Losos J. B., MacIvor J. S., Martin R. A., McDonnell M. J., Miles L. S., Munshi-South J., Ness R. W., Newman A. E. M., Stothart M. R., Theodorou P., Thompson K. A., Verrelli B. C., Whitehead A., Winchell K. M., and Johnson M. T. J. (2019). A roadmap for urban evolutionary ecology. *Evolutionary Applications* 12: 384-398. [PDF](#)
6. **Santangelo J. S.**, Thompson K. A., and Johnson M. T. J. (2019). Herbivores and plant defenses affect selection on plant reproductive traits more strongly than pollinators. *Journal of Evolutionary Biology* 32: 4-18. [PDF](#) [GitHub](#)
****This manuscript won ESEB's Stephen Stearns Prize*
5. **Santangelo J. S.**, L. Ruth Rikvin, and Johnson M. T. J. (2018). The evolution of city life. *Proceeding of the Royal Society B: Biological Sciences* 285: 20181529. [PDF](#)
4. **Santangelo J. S.**, Johnson M. T. J., and Ness R. W. (2018). Modern spandrels: the roles of genetic drift, gene flow and selection in the evolution of parallel clines. *Proceeding of the Royal Society B: Biological Sciences* 285: 20180230. [PDF](#) [GitHub](#)
3. Cadotte M. W., Livingstone S. W. Yasui S.-L. E., Dinnage R. Li, J.-T., Marushia R. **Santangelo J. S.**, and Shu W. (2017). Explaining ecosystem multifunction with evolutionary models. *Ecology* 98: 3175-3187. [PDF](#)
2. **Santangelo J. S.**, and Kotanen P. M. K. (2016). Non-systemic fungal endophytes increase survival but reduce tolerance to simulated herbivory in subarctic *Festuca rubra*. *Ecosphere* 7: e01260. [PDF](#)
1. **Santangelo J. S.**, Turley N. E., and Johnson M. T. J. (2015). Fungal endophytes of *Festuca rubra* increase in frequency following long-term exclusion of rabbits. *Botany* 93(4): 233-241. [PDF](#)

Book chapters

1. **Santangelo J. S.**, Miles L. M., Breitbart S. T., Murray-Stoker D., L. Ruth Rivkin, Johnson M. T. J., and Ness R. W. (2020). Urban environments as a framework to study parallel evolution. In: *Urban Evolutionary Biology*. M. Szulkin, J. Munshi-South, and A. Charmantier, eds. Oxford University Press, Oxford, UK. [PDF](#)

Submitted Manuscripts and pre-prints

1. **Santangelo, J. S.**, Roux, C., Johnson, M. T. J. The effects of environmental heterogeneity within a city on the evolution of clines. [bioRxiv](#). [Preprint](#)

Educational resources (not peer reviewed)

1. **Santangelo J. S.** (2019). Data simulation and randomization tests. *NEON Faculty Mentoring Network, QUBES Educational Resources*. [Access](#).

FUNDING

(Total Funding = \$109,500 CAD)

NSERC PDF, National Engineering and Research Council of Canada (\$90,000)	2022
NSERC CGS-D, National Engineering and Research Council of Canada (\$35,000)	2020
NSERC PGS-D, National Engineering and Research Council of Canada (\$42,000)	2018
Ontario Graduate Scholarship, Government of Ontario, Canada (\$15,000)	2017
NSERC CGS-M, National Engineering and Research Council of Canada (\$17,500)	2016

HONORS, AWARDS, & FELLOWSHIPS

(Total Awards = \$18,057.26 CAD)

Hamilton Award Finalist , Society for the Study of Evolution (\$624)	2022
Doctoral Excellence Award , Canadian Society for Ecology and Evolution (\$600)	2022
Peter Abrams Award , University of Toronto Ecology and Evolutionary Biology Department (\$500)	2022
Roberta Bondar Graduate Student Excellence Award , University of Toronto Mississauga Department of Biology (\$2452.50)	2021
Doctoral excellence scholarship , University of Toronto Faculty of Arts and Science (\$5000.00)	2020
Rustom H. Dastur Graduate Scholarship , University of Toronto Ecology and Evolutionary Biology Department (\$2602.33)	2020
R. Ramsay Wright Graduate Scholarship , University of Toronto Ecology and Evolutionary Biology Department (\$1000)	2020
Robert L. Jefferies Graduate Scholarship , University of Toronto Ecology and Evolutionary Biology Department (\$396.20)	2020
Stephen Stearns Graduate Student Prize , European Society for Evolutionary Biology (\$375)	2019
Frederick P. Ide Graduate Award , University of Toronto Ecology and Evolutionary Biology Department (\$3000)	2019
ASN 1st place presentation , Ontario Ecology, Ethology, and Evolution colloquium (OE3C), Kingston, Canada (\$125)	2017
CSPB best talk in botany , Ontario Biology Day (OBD), Ottawa, Canada (\$100)	2015
New Phytologist Prize for best presentation in botany , Canadian Society for Ecology and Evolution (CSEE), Saskatoon, Canada (\$100)	2015
Award for research excellence in evolution , Ontario Biology Day (OBD), Mississauga, Canada	2014
Undergraduate research grant , University of Toronto Mississauga (\$500)	2014
Alan F. Coventry Memorial Scholarship , University of Toronto Mississauga Biology Department (\$782.23)	2013

INVITED TALKS

Virtual	NSF RCN on Urban Eco-Evo	2022
University of Toronto Mississauga	Departmental seminar series	2021
Radcliffe Institute, Harvard University	Next in Evolution	2018
University of Toronto Mississauga	19 th annual New Phytologist Workshop	2017

CONTRIBUTED PRESENTATIONS

(# Contributed Talks/Posters = 14; # Talk/Poster Awards = 5)

(*Poster presentation; †Award)

ESEB, Prague, Czech Republic	2022
†CSEE, Montréal, Canada	2022
Evolution meeting, Cleveland, Ohio	2022
VIII Congreso Mexicano de Ecología, Oaxaca, Mexico	2022
Atwood Colloquium, University of Toronto, Toronto	2022
†ESEB, Turku, Finland	2019
Evolution meeting, Providence, Rhode Island	2019
*Evolution joint congress, Montpellier, France	2018

Evolution meeting, Portland, Oregon	2017
[†] Ontario Ecology, Ethology, and Evolution Colloquium (OE3C), Kingston, Canada	2017
[†] Ontario Biology Day (OBD), Ottawa, Canada	2015
[†] Canadian Society for Ecology and Evolution (CSEE), Saskatoon, Canada	2015
[†] Ontario Biology Day (OBD), Mississauga, Canada	2014
*Canadian Society of Plant Biologists (CSPB), Mississauga, Canada	2013

SERVICE, LEADERSHIP, & PROFESSIONAL EXPERIENCE

(# Unique Positions = 13)

Grad student rep , UTM Systems Biology Faculty Search	2019 - 2020
Editor , UofT EEB Quarterly Review magazine	2018 - 2020
Co-organizer/instructor , UTM Bi-weekly Graduate Student Programming Workshops	2018 - 2019
Member , UTM Biology Executive Committee	2017 - 2019
Member , UTM Biology Seminar Committee	2017 - 2019
Member , Tri-campus Graduate Chair Search Committee	2018
Member , Ecology and Evolutionary Biology Chair Search Committee	2018
UTM campus representative , EEB Graduate Student Association	2018
Guest Editor , <i>Proceedings B</i> Special Issue: "The Evolution of City Life"	2017 - 2018
Organizer , 19 th annual New Phytologist Workshop: "Synthesis in the City: Urban Evolutionary Ecology"	2017
Co-president , UTM Biology Graduate Student Society	2017
Treasurer , UTM Biology Graduate Student Society	2016
Member , UTM Biology Chair Search Committee	2018

TEACHING EXPERIENCE

(# Unique Courses = 6; Total Students Taught = 664)

Course instructor & developer

EEB313: Quantitative methods in R for biology	2018 - 2019
---	-------------

Administrative teach assistant

BIO259: Introduction to biological data	2022
---	------

Teaching assistant

BIO259: Introduction to biological data	2022
BIO152: Introduction to evolution and genetics	2020
BIO342: Evolutionary biology	2017 - 2022
BIO205: Ecology	2017

Guest lectures

HSC302: Biocommunication visualization	2018 - 2020
--	-------------

MENTORSHIP & ADVISING

(# Students = 5; # Co-authors on published manuscripts = 3)

Cindy Roux, Visiting graduate student from France
Trevor Schmahl, Undergraduate thesis student
Beata Cohan, Undergraduate thesis student
Carole Advenard, Visiting graduate student from France
Jibran Syed, Undergraduate thesis student

Summer 2019
 Sept. 2018 - April 2019
 Sept. 2017 - Dec. 2018
 Summer 2017
 Sept. 2016 - April 2017

REVIEWER

(# Unique Journals = 8; Total Reviews = 19)

Annals of Botany	N = 1
Ecology and Evolution	N = 1
Evolution	N = 1
Frontiers Ecology and Evolution	N = 1
Journal of Evolutionary Biology	N = 1
Journal of Urban Evolution	N = 1
Proceedings of the Royal Society B	N = 10
Science	N = 1

SOCIETY MEMBERSHIPS

American Society of Naturalists (ASN)	2017 - present
Canadian Society of Ecology and Evolution (CSEE)	2015 - present
European Society for Evolutionary Biology (ESEB)	2022 - present
Society for the Study of Evolution (SSE)	2017 - present