

# James S. Santangelo

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

email: [james.santangelo37@gmail.com](mailto:james.santangelo37@gmail.com)  
website: [james-s-santangelo.github.io/](https://james-s-santangelo.github.io/)  
code/data: [github.com/James-S-Santangelo](https://github.com/James-S-Santangelo)

## EDUCATION & APPOINTMENTS

|      |   |                        |
|------|---|------------------------|
| PhD  | <i>University of Toronto</i><br>Department of Ecology and Evolutionary Biology<br>Advisors: <a href="#">Marc T. J. Johnson</a> and <a href="#">Rob W. Ness</a><br>Thesis: Evolutionary processes in urban environments  | Sept. 2016 - present   |
| HBSc | <i>University of Toronto Mississauga</i><br>Department of Biology<br>Faculty supervisor: <a href="#">Marc T. J. Johnson</a><br>Graduate student advisor: <a href="#">Nash E. Turley</a><br>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 = 12; # First-authored = 9; [Google Scholar](#))

### Published and Accepted Manuscripts <sup>†</sup>Mentee authors

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*. [Online ahead of print](#)
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, <sup>†</sup>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., <sup>†</sup>Cohan, B., <sup>†</sup>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.

#### 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)

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

## CONTRIBUTED PRESENTATIONS

---

(# Contributed Talks/Posters = 12; # Talk/Poster Awards = 5)

(\*Poster presentation; †Award)

|   |      |
|---|------|
| 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)

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

## TEACHING EXPERIENCE

---

(# Unique Courses = 5; Total Students Taught = 616)

### Course instructor/developer

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

### Guest lectures

|  |                |
|--|----------------|
| HSC302: Biocommunication visualization | 2018 - present |
|--|----------------|

### Teaching assistant

|  |                |
|--|----------------|
| BIO152: Introduction to evolution and genetics | 2020           |
| BIO342: Evolutionary biology                   | 2017 - present |
| BIO205: Ecology                                | 2017           |

## MENTORSHIP & ADVISING

---

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

|  |                         |
|--|-------------------------|
| <b>Cindy Roux</b> , Visiting graduate student from France      | Summer 2019             |
| <b>Trevor Schmahl</b> , Undergraduate thesis student           | Sept. 2018 - April 2019 |
| <b>Beata Cohan</b> , Undergraduate thesis student              | Sept. 2017 - Dec. 2018  |
| <b>Carole Advenard</b> , Visiting graduate student from France | Summer 2017             |
| <b>Jibran Syed</b> , Undergraduate thesis student              | 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**

---

|  |                |
|--|----------------|
| Society for the Study of Evolution (SSE)         | 2017 - present |
| American Society of Naturalists (ASN)            | 2017 - present |
| Canadian Society of Ecology and Evolution (CSEE) | 2015 - present |