James S. Santangelo

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EDUCATION & APPOINTMENTS

Postdoc	*University of California Berkeley* Department of Integrative Biology Advisor: Rasmus Nielsen	January 2023
PhD	*University of Toronto* Department of Ecology and Evolutionary Biology Advisors: Marc T. J. Johnson and Rob W. Ness Thesis: Evolutionary processes in urban environments	July 2022
HBSc	*University of Toronto Mississauga* Department of Biology	June 2015

PUBLICATIONS

(First-authored = 11; Google Scholar; Manuscript PDFs)

Articles

21. Anderson, J. T., DeMarche, M. L., Denney, D. A., Breckheimer, I., **Santangelo, J.**, Wadgymar, S. M. (2025). Adaptation and gene flow are insufficient to rescue a montane plant under climate change. *Science* 388: 525–531.

20. Battlay, P., Hendrickson, B. T., Mendez-Reneau, J. I., **Santangelo, J. S.**, Albano, L. J., Wilson, J., Caizergues, A. E., King, N., Puentes, A., Tudoran, A., Violle, C., Vasseur, F., Patterson, C. M., Foster, M., Stamps, C., Innes, S. G., Allio, R., Angeoletto, F., Anstett, D. N., Anstett, J., Bucharova, A., Comerford, M. S., David, S., Falahati-Anbaran, M., Godsoe, W., González-Lagos, C., Gundel, P. E., Hood, G. R., Lampei, C., Lara, C., Lázaro-Lobo, A., Silva Leandro, D., Merritt, T. J. S., Mitchell, N., Mohammadi Bazargani, M., Moles, A., Murúa, M., Paule, J., Pfeiffer, V., Raeymaekers, J. A. M., Rennison, D. J., Rios, R. S., Rowntree, J. K., Schneider, A. C., Stack Whitney, K., Tamburrino, Í., VanWallendael, A., Kim, P. Y., Ness, R. W., Johnson, M. T. J., Hodgins, K. A., Kooyers, N. J. (2025). Haploblocks contribute to parallel climate adaptation following global invasion of a cosmopolitan plant. *Nat. Ecol. Evol.*: 1–15.

19. Murray-Stoker, D., **Santangelo, J. S.**, Szulkin, M., Johnson, M. T. J. (2025). Comparing approaches to quantify urbanization on a multicontinental scale. *Urban Ecosyst.* 28: 1–16.

18. Nikolaeva, A. S., **Santangelo, J.**, Smith, L., Dodd, R., Nielsen, R. (2025). Occurrence of aneuploidy across the range of coast redwood (Sequoia sempervirens). *G3 (Bethesda)* 8: jkaf063.

17. Bhachu, K., **Santangelo, J. S.**, Johnson, M. T. J., Fadul, H. E. (2024). Tissue-specific expression of HCN and its metabolic precursors in *Trifolium repens*. *Botany* 102: 470–477.

16. Caizergues, A. E., **Santangelo, J. S.**, Ness, R. W., Angeoletto, F., Anstett, D. N., Anstett, J., Baena-Diaz, F., Carlen, E. J., Chaves, J. A., Comerford, M. S., Dyson, K., Falahati-Anbaran, M., Fellowes, M. D. E., Hodgins, K. A., Hood, G. R., Iñiguez-Armijos, C., Kooyers, N. J., Lázaro-Lobo, A., Moles, A. T., Munshi-South, J., Paule, J., Porth, I. M., Santiago-Rosario, L. Y., Whitney, K. S., Tack, A. J. M., Johnson, M. T. J. (2024). Does urbanisation lead to parallel demographic shifts across the world in a cosmopolitan plant? *Mol. Ecol.* 33: e17311.

15. **Santangelo, J. S.**, Battlay, P., Hendrickson, B. T., Kuo, W.-H., Olsen, K. M., Kooyers, N. J., Johnson, M. T. J., Hodgins, K. A., Ness, R. W. (2023). Haplotype-Resolved, Chromosome-Level Assembly of White Clover (*Trifolium repens* L., Fabaceae). *Genome Biol. Evol.* 15: evad146.

14. Innes, S. G., **Santangelo, J. S.**, Kooyers, N. J., Olsen, K. M., Johnson, M. T. J. (2022). Evolution in response to climate in the native and introduced ranges of a globally distributed plant. *Evolution* 76: 1495–1511.

13. **Santangelo, J. S.**, Roux, C., Johnson, M. T. J. (2022a). The effects of environmental heterogeneity within a city on the evolution of clines. *J. Ecol.*

12. **Santangelo, J. S.** (2022b). Global urban environmental change drives adaptation in white clover. *Science* 375: 1275–1281.

11. Verrelli, B. C., Alberti, M., Des Roches, S., Harris, N. C., Hendry, A. P., Johnson, M. T. J., Savage, A. M., Charmantier, 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., Urban, M. C., Zhou, Y., Ziter, C. (2022). A global horizon scan for urban evolutionary ecology. *Trends Ecol. Evol.*

10. **Santangelo, J. S.**, Rivkin, L. R., Advenard, C., Thompson, K. A. (2020b). Multivariate phenotypic divergence along an urbanization gradient. *Biol. Lett.* 16: 20200511.

9. **Santangelo, J. S.**, Thompson, K. A., Cohan, B., Syed, J., Ness, R. W., Johnson, M. T. J. (2020c). Predicting the strength of urban-rural clines in a Mendelian polymorphism. *Evolution Letters* 4: 212–225.

8. Johnston, L., Bonsma-Fisher, M., Ostblom, J., Hasan, A., **Santangelo, J.**, Coome, L., Tran, L., De Andrade, E., Mahallati, S. (2019). A graduate student-led participatory live-coding quantitative methods course in R: Experiences on initiating, developing, and teaching. *J. Open Source Educ.* 2: 49.

7. Rivkin, L. R., **Santangelo, J. S.**, Alberti, M., Aronson, M. F. J., Keyzer, 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., Miles, L. S., Munshi-South, J., Ness, R., Newman, A. E. M., Stothart, M. R., Theodorou, P., Thompson, K. A., Verrelli, B. C., Whitehead, A., Winchell, K. M., Johnson, M. T. J. (2019). A roadmap for urban evolutionary ecology. *Evol. Appl.* 12: 384–398.

6. **Santangelo, J. S.**, Johnson, M. T. J., Ness, R. W. (2018a). Modern spandrels: the roles of genetic drift, gene flow and natural selection in the evolution of parallel clines. *Proc. Biol. Sci.* 285: 20180230.

5. **Santangelo, J. S.**, Rivkin, L. R., Johnson, M. T. J. (2018b). The evolution of city life. *Proceedings of the Royal Society B: Biological Sciences* 285: 20181529.

4. **Santangelo, J. S.**, Thompson, K. A., Johnson, M. T. J. (2018c). Herbivores and plant defences affect selection on plant reproductive traits more strongly than pollinators. *J. Evol. Biol.* 32: 4–18.

3. Cadotte, M. W., Livingstone, S. W., Yasui, S.-L. E., Dinnage, R., Li, J.-T., Marushia, R., **Santangelo, J.**, Shu, W. (2017). Explaining ecosystem multifunction with evolutionary models. *Ecology* 12: 3218–3221.

2. **Santangelo, J. S.**, Kotanen, P. M. (2016). Nonsystemic fungal endophytes increase survival but reduce tolerance to simulated herbivory in subarctic *Festuca rubra*. *Ecosphere* 7: 1–13.

1. **Santangelo, J. S.**, Turley, N. E., Johnson, M. T. J. (2015). Fungal endophytes of *Festuca rubra* increase in frequency following long-term exclusion of rabbits. *Botany* 93: 233–241.

Book chapters

2. Leandro, D., Johnson, M. T. J., Schneider, A. C., Lázaro-Lobo, A., Caizergues, A. E., Lara, C., Iñiguez-Armijos, C., González-Lagos, C., Frost, C., Rennison, D., Del-Val, E., Hood, G. R., Porth, I., LaM-

ontagne, J. M., **Santangelo, J.**, Paule, J., Whitney, K. S., Dyson, K., Gotanda, K. M., Comerford, M., Just, M., Akinwole, P., Gkelis, S., Merritt, T., Godsoe, W., Pfeiffer, V., Angeoletto, F. (2025). GLUEing the world: The GLobal urban evolution project and its importance to urban biodiversity conservation. In: *Ecology of Tropical Cities, Volume I*. Ed. by F. Angeoletto, P. Tryjanowski, and M. D. E. Fellowes. Cham: Springer Nature Switzerland: pp. 217–230.

1. **Santangelo, J. S.**, Miles, L. S., Breitbart, S. T., Murray-Stoker, D., Rivkin, L. R., Johnson, M. T. J., Ness, R. W. (2020a). Urban environments as a framework to study parallel evolution. In: *Urban Evolutionary Biology*. Ed. by M. Szulkin, J. Munshi-South, and A. Charmantier. Oxford University Press, Oxford, United Kingdom: pp. 36–53.

FUNDING & FELLOWSHIPS

(Total Funding = ≈$816,900 CAD; ≈$606,300 USD)

Miller Postdoctoral Fellowship, Miller Institute, UC Berkeley ($255,000 USD) 2023
Long-term Fellowship (LTF), Human Frontiers Science Program (HFSP, $202,956 USD) — *Declined* 2023
Postdoctoral Fellowship (PDF), National Engineering and Research Council of Canada (NSERC, $90,000) — *Declined after 6 months* 2022
Canada Graduate Scholarship-Doctoral (CGS-D), National Engineering and Research Council of Canada (NSERC, $35,000) 2020
Postgraduate Scholarship–Doctoral (PGS-D), National Engineering and Research Council of Canada (NSERC, $42,000) 2018
Ontario Graduate Scholarship (OGS), Government of Ontario, Canada ($15,000) 2017
Canada Graduate Scholarship–Masters (CGS-M), National Engineering and Research Council of Canada (NSERC, $17,500) 2016

PRIZES, HONORS & AWARDS

(Total Awards = ≈$18,000 CAD; ≈$13,400 USD)

Hottest Paper Award, University of Toronto Mississauga Biology Department 2023
Governor General's Gold Medal, University of Toronto 2023
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) 2021
Doctoral excellence scholarship, University of Toronto Faculty of Arts and Science ($5000) 2020
Rustom H. Dastur Graduate Scholarship, University of Toronto Ecology and Evolutionary Biology Department ($2602) 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) 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) 2013

INVITED TALKS

UC Berkeley	Departmental seminar, Integrative Biology	2024
UC Berkeley	Cal Genomics Summer Research Experience	2024
University of Ottawa	Departmental seminar, Biology	2024
Dovetail Genomics	Genomes of Animals and Plants	2023
University of Michigan	Early Career Scientists Symposium	2023
University of Montréal	Departmental seminar, Biology	2023
University of Louisiana Lafayette	Departmental seminar, Biology	2022
NSF RCN on Urban Eco-Evo	Virtual seminar series	2022
University of Toronto Mississauga	Departmental seminar, Biology	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 = 16; # Talk/Poster Awards = 6)

(*Poster presentation; †Award)

SSE-ESEB, Montreal, Canada 2024
CSEE, Winnipeg, Canada 2023
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, Etholoy, 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

Reviewer, CSEE Doctoral Excellence Awards 2024
Reviewer, SSE Rosemary Grant Advanced Awards 2023
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, *Proceedings B* Special Issue: "The Evolution of City Life"	2017 - 2018
Organizer, 19th 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

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

(†Co-author on published manuscript)

†**Cindy Roux**, Visiting graduate student from France	Summer 2019
Trevor Schmahl, Undergraduate thesis student	Sept. 2018 - April 2019
†**Beata Cohan**, Undergraduate thesis student	Sept. 2017 - Dec. 2018
†**Carole Advenard**, Visiting graduate student from France	Summer 2017
†**Jibran Syed**, Undergraduate thesis student	Sept. 2016 - April 2017

REVIEWER

Annals of Botany, Ecology, Ecology and Evolution, Evolution, Evolutionary Applications, Frontiers Ecology and Evolution, Journal of Evolutionary Biology, Journal of Urban Evolution, Nature Cities, Nature Ecology & Evolution, New Phytologist, Plant Cell & Environment, Proceedings of the Royal Society B, Science, Scientific Reports

SOCIETY MEMBERSHIPS

Society for Molecular Biology and Evolution (SMBE)	2024 - present
European Society for Evolutionary Biology (ESEB)	2022 - present
Society for the Study of Evolution (SSE)	2017 - present
Canadian Society of Ecology and Evolution (CSEE)	2015 - present