

Selina A. Ruzi

North Carolina State University
Biological Sciences
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Professional Experience

- 2022 – Present Postdoctoral Research Scholar, North Carolina State University and North Carolina Museum of Natural Sciences, Raleigh, NC. Supervisor: A.A. Smith
- 2019 – 2022 NSF Postdoctoral fellow, North Carolina State University and North Carolina Museum of Natural Sciences, Raleigh, NC. Supervisors: R.E. Irwin and A.A. Smith
- 2018 Graduate Research Assistant, College of ACES, University of Illinois, Urbana, IL. Supervisor: A.D. Kent
- 2017 Graduate Research Assistant, College of ACES, University of Illinois, Urbana, IL. Supervisor: A.D. Kent
- 2012 – 2019 Doctorate Researcher, School of Integrative Biology, University of Illinois, Urbana, IL.
- 2012 – 2019 Smithsonian Tropical Research Institute (STRI) Fellow
- 2014 – 2016 Graduate Research Fellow, University of Illinois, Urbana, IL.
- 2012 – 2014 NSF IGERT (VInTG) Graduate Fellow, University of Illinois, Urbana, IL.
- 2011 – 2012 Undergraduate Researcher, Handel Laboratory, CURE, Rutgers University, New Brunswick, NJ.
- 2011 Assistant Naturalist, ETM Associates, Highland Park, NJ.
- 2010 – 2011 Research in Applied Ecology, Handel Laboratory, CURE. Rutgers University, New Brunswick, NJ.

Education

- 2012 – 2019 Ph.D. Program in Ecology, Evolution and Conservation Biology. School of Integrative Biology. University of Illinois, Urbana, IL. (Advisor: A. V. Suarez)
- 2008 – 2012 B.S. Ecology and Natural Resources. School of Environmental and Biological Sciences. Rutgers University, New Brunswick, NJ. (Research Supervisor: S. N. Handel) *summa cum laude*.

Related Training

- 2022 AlaskaX. Geographic Information Systems (GIS) Essentials (GIS Foundations, 3D GIS, GIS Image Analysis in ArcGIS Pro). EdX. (edx.org)
- 2021 BUx: The Inclusive STEM Teaching Project. EdX. (edx.org)
- 2019 Media-Ready training Series (Communicating Science to the Public, Media Relations Basics, and On-Camera Training). University Communications, North Carolina State University, Raleigh, NC.
- 2013 Ant Course. California Academy of Science. August 4-15, Villa Carmen, Manu Biosphere Reserve, Peru.

Grants, Scholarships, and Fellowships

- 2022 NSF Science of Science Discovery, Communication, and Impact (SoS:DCI). A.A. Smith (PI), N.M. Lee (co-PI) (\$275,853). * Although I was not a PI, I was part of the team of three who wrote this proposal.
- 2021 NSF Postdoctoral Fellowship in Biology amendment. S.A. Ruzi (PI) (\$69,000)
- 2019 NSF Postdoctoral Fellowship in Biology. S.A. Ruzi (PI) (\$138,000)
- 2018 Francis M. and Harlie M. Clark Research Support Grant (U. Illinois) (\$1,000)
- 2017 NSF Doctoral Dissertation Improvement Grant. A.V. Suarez (PI), S.A. Ruzi (co-PI) (\$15,389)
- 2013 – 2017 Conference Travel Grant (U. Illinois) (\$2,198.98)
- 2014 – 2016 PEEC Summer Research Award (U. Illinois) (\$1,500)
- 2015 – 2016 Association for Tropical Biology and Conservation Conference Fellowship (~\$1,025)
- 2015 Smithsonian Tropical Research Institute Fellow Travel Award Program (\$1,200)
- 2015 PEEC Travel Grant (U. Illinois) (\$500)
- 2015 Harley J. Van Cleave Research Award (U. Illinois) (\$1,000)
- 2014 Smithsonian Tropical Research Institute Short-Term Fellowship (\$4,000)
- 2013 Dissertation Travel Grant (U. Illinois) (\$2,898)
- 2013 SIB Enhancement Fund (U. Illinois) (\$1,000)
- 2011 Aresty Undergraduate Research Grant (Rutgers University) (\$231.87)

Publications (*undergraduate researcher, †co-first authors)

- Ruzi, S.A.**, E. Youngsteadt, A. Hamblin Cherveney, J. Kettenbach, H.K. Levenson, D. Seth Carley, J.A. Collazo, and R.E. Irwin. 2024. Bee species richness through time in an urbanizing landscape of the southeastern United States. *Global Change Biology* 30(1): e17060. doi:10.1111/gcb.17060
- Ruzi, S.A.**, E. Youngsteadt, A. Hamblin Cherveney, J. Kettenbach, H.K. Levenson, D. Seth Carley, J.A. Collazo, and R.E. Irwin. Bee species richness through time in an urbanizing landscape of the southeastern USA. *Submitted*.
- Drager, K.I[†], M.D. Rivera[†], J.C. Gibson, **S.A. Ruzi**, P.E. Hanisch, R. Achury, and A.V. Suarez. 2023. Testing the predictive value of functional traits in diverse ant communities. *Ecology and Evolution*. 13(4): e10000. doi:10.1002/ece3.10000
- Ruzi, S.A.**, and A.V. Suarez. 2022. Seed fate in ant-mediated dispersal: Seed dispersal effectiveness in the *Ectatomma ruidum* (Formicidae) – *Zanthoxylum ekmanii* (Rutaceae) system. *Biotropica* 54: 764-775. doi:10.1111/btp.13098
- Ruzi, S.A.**, N.M. Lee, and A.A. Smith. 2021. Testing how different narrative perspectives achieve communication objectives and goals in online natural science videos. *PLOS ONE* 16(10): e0257866. doi:10.1371/journal.pone.0257866
- Ruzi, S.A.**, P-C. Zalamea, D.P. Roche, R. Achury, J.W. Dalling, and A.V. Suarez. 2021. Can variation in seed removal patterns of Neotropical pioneer tree species be explained by local ant community composition? *Biotropica*. 53(2): 619-631. doi:10.1111/btp.12904
- Larson, E.R., B.M. Graham, R. Achury, J.J. Coon, M.K. Daniels, D.K. Gambrell, K.L. Jonassen, G.D. King, N. LaRacuente, T.I.N. Perrin-Stowe, E.M. Reed, C.J. Rice, **S.A. Ruzi**, M.W. Thairu, J.C. Wilson, and A.V. Suarez. 2020. From eDNA to citizen science: Emerging tools for the early detection of invasive species. *Front. Ecol. Environ.* 18(4): 194-202. doi:10.1002/fee.2162

- Ostwald, M.M., S.A. Ruzi, and K.M Baudier. 2018. Ambush predation of stingless bees (*Tetragonisca angustula*) by the solitary-foraging ant *Ectatomma tuberculatum*. *J. Insect Behavior*. doi:10.1007/s10905-018-9694-9
- Ruzi, S.A., D.P. Roche, P-C. Zalamea, A.C. Robison*, and J.W. Dalling. 2017. Species identity influences secondary removal of seeds of Neotropical pioneer tree species. *Plant Ecology* 218(8): 983-995. doi:10.1007/s11258-017-0745-7

Datasets

- Ruzi, S.A. 2023. Data from: Bee species richness through time in an urbanizing landscape of the southeastern USA. Dataset. In *Global Change Biology*. Zenodo. doi:10.5281/zenodo.10105284
- Ruzi, S.A., and A.V. Suarez. 2022. Data from: Seed fate in ant-mediated dispersal: Seed dispersal effectiveness in the *Ectatomma ruidum* (Formicidae) – *Zanthoxylum ekmanii* (Rutaceae) system. Dryad. Dataset. doi:10.5061/dryad.t1g1jw4c
- Ruzi, S.A., P-C. Zalamea, D.P. Roche, R. Achury, J.W. Dalling, and A.V. Suarez. 2020. Data from: Can variation in seed removal patterns of Neotropical pioneer tree species be explained by local ant community composition? Dryad. Dataset. doi:10.5061/dryad.n2z34tmvj

Awards and Distinction

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| 2017 | President's Prize Award (2 nd place), Entomology Society of America Student Competition |
| 2016 – 2017 | List of Teachers Ranked Excellent by Their Students, U. Illinois |
| 2014 | President's Prize Award (1 st place), Entomology Society of America Student Competition |
| 2013 | NSF Graduate Research Fellowship Program, Honorable Mention |
| 2012 | Young Botanist Award, Botanical Society of America |
| 2012 | M. Buell Outstanding Student in Ecology Award, Rutgers University |
| 2012 | New Jersey Agricultural Station (NJAES)/ School of Environmental and Biological Sciences (SEBS) Research Poster Award, NJAES |
| 2012 | Outstanding Achievement in Undergraduate Research, Aresty Undergraduate Research Symposium |

Teaching Experience

University of Illinois at Urbana-Champaign (Teaching Assistant)

IB 105 Environmental Biology (online) (Spring 2018 – Prof. J. Catchen; Fall 2018 – Prof. S. Punyasena)

IB 100 Biology in Today's World (online with discussion) (Fall 2017 – Prof. L-Q. Chen; Spring 2019 – Prof. W. Yang)

IB 302 Evolution (with lab) (Spring 2017 – Profs. B. Fuller and S. Berlocher)

IB 203 Ecology (with lab) (Fall 2016 – Prof. C.K. Augspurger)

IB 329 Animal Behavior (Fall 2013 – Prof. A.V. Suarez)

Rutgers University (Teaching Assistant)

11:704:272 Dendrology (with lab) (Fall 2011 – Prof. M.C. Vodak)

Oral Presentations

- 2023 Sharing insect research via online video: Experimental assessments of scientists as communicators. (Entomological Society of America, Annual Meeting. November, National Harbor, Maryland) (co-authors: N.M. Lee and A.A. Smith)
- 2020 Urbanization shapes bee (Apoidea) biodiversity through time. (Entomological Society of America, Annual Meeting, On-demand – Online Presentation) (co-authors: E.K. Youngsteadt, J.A. Kettenbach, A.L. Hamblin, and R.E. Irwin)
- 2018 Can variation in seed removal patterns of Neotropical pioneer tree species be explained by local ant community composition? (Association for Tropical Biology and Conservation, Annual Meeting. July, Kuching, Sarawak, Malaysia)
- 2018 Ant-mediated seed removal of Neotropical pioneer tree species. (Bambi Seminar Series. April, Barro Colorado Island, Panama)
- 2017 Can variation in seed removal patterns of Neotropical pioneer tree species be explained by local ant community composition? (Entomological Society of America, Annual Meeting, November, Denver, CO)
- 2015 Dispersal and predation of a Neotropical pioneer tree species, *Zanthoxylum ekmanii*, by a common, ground dwelling ant, *Ectatomma ruidum* (Entomological Society of America, Annual Meeting – Synergy in Science joint meeting. November, Minneapolis, MN)
- 2015 The role of seed chemistry in ant-mediated seed dispersal and predation in a Neotropical pioneer tree species, *Zanthoxylum ekmanii* (Association for Tropical Biology and Conservation, Annual Meeting. July, Honolulu, HI)
- 2014 Chemical cues associated with ant-mediated seed dispersal. (Entomological Society of America, Annual Meeting. November, Portland, OR)
- 2014 Chemical cues associated with ant-mediated seed dispersal in Neotropical pioneer tree species. (IGERT ViNTG Symposium. September, University of Illinois, Urbana, IL)
- 2014 Chemical cues associated with ant-mediated seed dispersal in Neotropical pioneer tree species. (International Society of Chemical Ecology – Chemical Signals in Vertebrates joint meeting. July, University of Illinois, Urbana, IL)
- 2014 Ant-mediated seed dispersal of neotropical pioneer tree species on Barro Colorado Island, Panama. (EcoLunch Seminar Series. April, University of Illinois, Urbana, IL)
- 2014 Ant-mediated seed dispersal of neotropical pioneer tree species. (Bambi Seminar Series. February, Barro Colorado Island, Panama)
- 2013 Chemistry as a factor in ant-mediated seed dispersal of Neotropical tree species on Barro Colorado Island, Panama (Annual Ant Symposium. February, Chicago, IL)
- 2013 Seed chemistry as a factor influencing ant-mediated seed dispersal. (Capybara Seminar Series. February, Barro Colorado Island, Panama). Invited Speaker.

Poster Presentations

- Ruzi, S.A.**, N.M. Lee, and A.A. Smith. 2020. Does the spokesperson matter in online natural history science communication? Entomological Society of America. Annual Meeting. Infographic On-demand – Online.
- Ruzi, S.A.**, D.P. Roche, P-C. Zalamea, A.C. Robison, and J.W. Dalling. 2017. Species identity influences secondary removal of seeds of neotropical pioneer tree species. Association for Tropical Biology and Conservation (ATBC). Annual Meeting, Merida, Mexico.
- Ruzi, S.A.**, and A.V. Suarez. 2016. Identifying the chemistry and quality of ant-mediated seed dispersal of Neotropical pioneer tree species by the common, ground dwelling ant, *Ectatomma ruidum*. Association for Tropical Biology and Conservation (ATBC). Annual Meeting, Montpellier, France.

- Ruzi, S.A.,** W.T. Wcislo, J.W. Dalling, and A.V. Suarez. 2016. Testing the suitable microhabitat hypothesis for ant-mediated seed dispersal of Neotropical pioneer trees. Smithsonian Tropical Research Institute (STRI) Fellow Symposium, Annual, Panama City, Panama.
- Ruzi, S.A.,** D. Roche, C. Zalamea, J. Dalling, and A.V. Suarez. 2013. Factors influencing ant-mediated seed dispersal of neotropical pioneer tree species on Barro Colorado Island, Panama. Entomological Society of America. Annual Meeting, Austin, TX.
- Ruzi, S.A.,** and S.N. Handel. 2012. Garlic mustard (*Alliaria petiolata*) invasion may facilitate spread of the non-native cabbage white butterfly (*Pieris rapae*). New Jersey Agricultural Experiment Station and School of Environmental and Biological Sciences, Rutgers University. Student Poster Competition. New Brunswick, New Jersey.
- Ruzi, S.A.,** and S.N. Handel. 2012. Garlic mustard (*Alliaria petiolata*) invasion may facilitate spread of the non-native cabbage white butterfly (*Pieris rapae*). Rutgers University. Aresty Undergraduate Research Symposium. New Brunswick, New Jersey.

Other Products

- Patel, V. and **S. Ruzi** 2012. "Carukia barnesi" (On-line), Animal Diversity Web.
http://animaldiversity.ummz.umich.edu/accounts/Carukia_barnesi/
- Ruzi, S.A.** 2017. multipleComparisons: Multiple T Test Comparisons. R package version 1.0.2. https://github.com/sruzi24/multiple_comparisons
 doi:10.5281/zenodo.1453377

Photos/Diagrams in Media

- Dinh, T.A., R. Sritharan, F.D. Smith, A.B. Francisco, R.K. Ma, R.P. Bunaciu, M. Kanke, C.G. Danko, A.P. Massa, J.D. Scott, and P. Sethupathy. 2020. Hotspots of aberrant enhancer activity in fibrolamellar carcinoma reveal candidate oncogenic pathways and therapeutic vulnerabilities. Cell Reports. 31(2): 107509. doi:10.1016/j.celrep.2020.03.073 (first two diagrams in Fig. 1a)
- Ostwald, M.M., **S.A. Ruzi**, and K.M Baudier. 2018. Ambush predation of stingless bees (*Tetragonisca angustula*) by the solitary-foraging ant *Ectatomma tuberculatum*. J. Insect Behavior. doi:10.1007/s10905-018-9694-9 (Fig. 1a)
- Sugar is key ingredient to evolutionary success of ants, researchers find. (2014, January 31). Retrieved October 9, 2015. <http://smithsonianscience.si.edu/2014/01/sugar-is-key-ingredient-to-evolutionary-success-of-ants-researchers-find/> (two photos)
- Kanter, Rob. "Environmental Almanac." (2016, September 22). Retrieved January 19, 2017. <http://environmentalalmanac.blogspot.com/2016/09/entomology-student-publishes-update-of.html> (one photo)

Professional Service

- 2016 Graduates in Ecology and Evolutionary Biology (GEEB; EcoLunch Coordinator)
- 2013 – 2016 Graduates in Ecology and Evolutionary Biology (GEEB; Webmaster)
- 2011 – 2012 Alpha Zeta Service and Honors Fraternity (Chair of Outreach Committee)

Peer Reviewer (number of manuscripts reviewed in parentheses)

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| Biological Invasions (1) | Ecology (1) |
| Environmental Entomology (1) | Ethology (1) |
| Oecologia (1) | Scientific Reports (1) |

Affiliations

- 2019 – present National Postdoctoral Association (NPA)
- 2019 – present American Association for the Advancement of Science (AAAS)
- 2015 – present Association for Tropical Biology and Conservation (ATBC),
- 2015 – present International Union for the Study of Social Insects (IUSSI-NAS)
- 2013 – present Entomological Society of America
- 2011 – 2013 Botanical Society of America

Outreach

- 2020 (Feb.) Volunteer Adult Night (North Carolina Museum of Natural Sciences, Raleigh, NC)
- 2019 (Sept.) Volunteer BugFest (North Carolina Museum of Natural Sciences, Raleigh, NC)
- 2019 (Feb.) Volunteer STEAMPunk Kids (Orpheum Children’s Science Museum, Champaign, IL)
- 2018 (Oct.) WeDigBio Transcriptithon volunteer (The Illinois Natural History Survey, Champaign, IL)
- 2018 (Feb.) Guest on two skype lessons from the Rainforest Connection Live aspect of the Wipro Science Education Fellowship (SEF) program at Monclair State University (Barro Colorado Island, Panama) (3rd grade classes)
- 2017 (Oct.) Genomics for Police Volunteer (Urbana, IL)
- 2017 (June) Volunteer Insect Petting Zoo for Girl’s Biology Camp (Urbana, IL)
- 2016 (Feb.) Guest on three skype lessons from the Rainforest Connection Live aspect of the Wipro Science Education Fellowship (SEF) program at Montclair State University (Barro Colorado Island, Panama) (6th grade and kindergarten classes)
- 2015 (Nov.) Volunteer at new graduate student seminar
- 2015 (Oct.) Volunteer at Pollinatarium (Urbana, IL)
- 2013 – 2019 Peer mentor
- 2013 (Nov.) Austin Insect Rodeo/ Insect Expo volunteer (Austin, TX)
- 2013 (Mar.) Mentor prospective students
- 2012 (Dec.) Frank Hall Science Night (Aurora, Illinois)