

Nicholas DiRienzo
Postdoctoral Excellence in Research and Teaching Postdoctoral Fellow
University of Arizona
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Academic Appointments

2015-2018 Postdoctoral Excellence in Research and Teaching Postdoctoral Fellow
Department of Ecology and Evolutionary Biology, University of Arizona, Tucson

2015 JSPS Postdoctoral Fellow
Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan

Education

2009-2015 Ph.D. University of California, Davis
Department of Neurobiology, Physiology and Behavior, Animal Behavior Graduate Group
Dissertation title: "*The Role of Species Interactions in Generating and Maintaining Consistent Individual Differences in Behavior*"
Chair: Dr. Ann Hedrick; committee: Drs. Jonathan Pruitt, Andy Sih

2006-2009 B.S. Benedictine University, Biology major, Magna Cum Laude

Fellowships, Grants, and Awards

Fellowships

2015-2018 PERT Postdoctoral Fellowship (\$154,000 + benefits)

2015 Izaak Walton Killam Postdoctoral Fellowship (\$96,000 cdn + benefits) (declined)

2015-2016 Japanese Society for the Promotion of Science Postdoctoral Fellowship (5,700,000 yen + benefits)

2014-2015 UC Davis Dissertation Year Fellowship (\$41,900 usd)

2011-2014 NSF Graduate Research Fellowship (\$132,000 usd)

2013 Japan Society for the Promotion of Science Short-Term Fellowship (750,000 yen + benefits)

2013 NSF Graduate Research Opportunities Worldwide Fellowship (\$5000 usd)

2012 NSF Nordic Research Opportunity supplement (\$5000 usd + 2500 euro)

2012 NSF East Asia and Pacific Summer Institute Fellowship (\$5000 usd + 962,500 yen + benefits)

2008 NSF Research Experience for Undergraduates Fellowship (\$5000 + benefits)

Awards

2015 Merton Love Award for most Outstanding Dissertation in Ecology and Evolution: *One given for best dissertation produced in Ecology or Evolutionary Biology at UC Davis in the previous year (\$400).*

Grants

2015	American Arachnological Society Research Grant (\$350)
2015	American Society of Naturalists Student Research Fellowship (\$2000)
2014	Sigma Xi Grant in Aid of Research (\$700)
2014	UC Davis Graduate Student Travel Award (\$500)
2012:	Orthopterists' Society Research grant - fall (\$560)
2012:	Orthopterists' Society Research grant - fall (\$614)
2011:	UC Davis Animal Behavior Graduate Group Fellowship (\$500)
2010:	UC Davis Animal Behavior Graduate Group Fellowship (\$500)
2010:	UC Davis Animal Behavior Graduate Group Block Grant (\$34,960)
2009:	Benedictine University Student Summer Research Grant (\$6000)
2008:	Council on Undergraduate Research - Biology Division, Travel Award (\$250)
2008:	Benedictine University Travel Grant (\$500)

Publications

**denotes undergraduate research assistants

- 16: **DiRienzo, N.**, and P.O. Montiglio. *In revision*. The contribution of developmental experience vs. condition on life history, trait variation, and individual differences. *Journal of Animal Ecology* (JAE-2015-00593).
- 15: **DiRienzo, N.**, and P.O. Montiglio. *In revision*. Individual differences in web structure and aggression in black widows: linking behavior and the extended phenotype. *Behavioral Ecology* (BEHECOL-2015-0604)
- 14: Montiglio, P.O., and **N. DiRienzo**. *In review*. There's no place like home: the contribution of direct and extended phenotypes on the expression of spider aggressiveness. *Functional Ecology* (FE-2016-00036).
- 13: **DiRienzo, N.**, McDermott, D.**, and J. Pruitt. 2015. Testing the effects of biogenic amines and alternative topical solvent types on the behavioral repertoire of two web-building spiders. *Ethology*. 121: 1-12.
- 12: **DiRienzo, N.**, Niemela, P., Skog, A.**, Hedrick, A., and R. Kortet. 2015. Juvenile pathogen exposure affects the presences of personality in adult field crickets. *Frontiers in Ecology and Evolution*. 3: 36.
- 11: **DiRienzo, N.**, and P.O. Montiglio. 2015. Four ways in which data-free papers fail to be impactful. *Frontiers in Ecology and Evolution*. 3: 23.
* Both authors contributed equally to this publication
- 10: **DiRienzo, N.**, and A. Hedrick. 2014. Animal personalities and their implications for complex signaling. *Current Zoology* 60(3): 381-386.
- 9: McDermott, D.**, Chips, M., McGuirk, M.**, Armagost, F.**, **DiRienzo, N.**, and J. Pruitt. 2014. Boldness is influenced by sub-lethal interactions with predators and is associated with successful harem infiltration. *Behavioral Ecology and Sociobiology* 68(3): 425-435.
- 8: **DiRienzo, N.**, Pruitt, J.N., and A. Hedrick. 2013. The combined behavioral tendencies of predator and prey mediate the outcome of their interaction. *Animal Behaviour* 86: 317-322.

- 7: Sweeney, K.**, Gadd, R.D.H.**, Hess, Z.L.**, McDermott, D.**, MacDonald, L., Cotter, P., Armagost, F.**, Chen, J.Z**, Berning, A.W.**, **DiRienzo, N.**, and J.Pruitt. 2013. Assessing the effects of rearing environment, natural selection, and developmental stage on the emergence of a behavioral syndrome. *Ethology* 119: 436-447.
- 6: Marshall, J., and **N. DiRienzo**. 2013. Noncompetitive gametic isolation between sibling species of cricket: A hypothesized link between within-population incompatibility and reproductive isolation between species. *International Journal of Evolutionary Biology*.
- 5: **DiRienzo, N.**, and J. Marshall. 2013. Function of the hemolymph nuptial gift in the southern ground cricket, *Allonemobius socius*. *Ethology* 119: 104-109.

Featured in Science News, February 9, 2013, p. 4

- 4: **DiRienzo, N.**, Pruitt, J.N., and A. Hedrick. 2012. Juvenile exposure to acoustic sexual signals from conspecifics alters developmental trajectory and adult personality. *Animal Behaviour* 84: 861-868.

Featured in BBC Nature News: <http://www.bbc.co.uk/nature/19248230>

- 3: Niemela, P., **DiRienzo, N.**, and A. Hedrick. 2012. Predator-induced changes in the boldness of naïve field crickets, *Gryllus integer*, depends on behavioural type. *Animal Behaviour* 84: 129-135.
- 2: Sih, A., Bibian, A., **DiRienzo, N.**, Meng, X.X., Montiglio, P.O., and K. Ringelman. 2012. On the benefits of studying mechanisms underlying behavior. In press in P. Crowley, T. Zentall, eds., *Comparative decision making*. Oxford University Press.
- 1: Pruitt, J.N., **DiRienzo, N.**, kralj-Fišer, S., Johnson, J.C., and A. Sih. 2011. Individual- and condition- dependent effects on habitat choice and choosiness. *Behavioral Ecology and Sociobiology* 65: 1987-1995.

Publication in Preparation

DiRienzo, N., and H. Aonuma. Mating status affects behavior and web structure in the redback spider, *Latrodectus hasselti*.

DiRienzo, N., Niemela, P., Hedrick, A., and R. Kortet. Adult pathogen exposure alters the expression of personality.

DiRienzo, N., Hedrick, A., and H. Aonuma. Hormonal correlates of female preference in the field cricket, *Gryllus Bimaculatus*.

Invited Research Seminars

2015: Hokkaido University: Invited research seminar in the Department of Biological Science

2015: University of Tokyo: Invited research seminar in the Department of General Systems Studies

2015: Kobe University: Invited research seminar in the Department of Biology

2015: University of California, Davis Evolution and Ecology Seminar Series Merton Love Award Seminar: Given by PhD student with the most outstanding dissertation in ecology or evolutionary biology completed in the previous year.

2015: University of California, Berkeley, Essig Brunch Seminar Series

2015: University of Massachusetts, Amherst, Darwin Fellowship Seminar Series

Contributed Presentations and Posters

2015: **DiRienzo, N.**, and P.O. Montiglio. *Developmental experiences drives consistent individual differences in foraging aggression and web structure in the western black widow, Latrodectus hesperus*. UC Davis Regional Animal Behavior Conference, Davis, CA.

2014: **DiRienzo, N.**, and A. Hedrick. Animal personalities and their implications for complex signaling. 51st annual meeting of the Animal Behavior Society, Princeton, NJ, USA.

2013: **DiRienzo, N.**, Niemela, P., Hedrick, A., and R. Kortet. *Juvenile exposure to pathogens affects the presence of personality in field crickets*. 50th annual meeting of the Animal Behavior Society, Boulder, CO, USA.

2013: **DiRienzo, N.**, Pruitt, J.N., and A. Hedrick. *Combined behavioral tendencies of predator and prey mediate the outcome of their interaction*. UC Davis Regional Animal Behavior Conference, Davis, CA.

2012: **DiRienzo, N.**, Pruitt, J.N., and A. Hedrick. *Combined behavioral tendencies of predator and prey mediate the outcome of their interaction*. 16th annual Kaamos Symposium, Oulu, Finland.

2011: **DiRienzo, N.**, Pruitt, J.N., and A. Hedrick. *Exposure to acoustic sexual signals alters adult personality in the field cricket, Gryllus integer*. 48th annual meeting of the Animal Behavior Society, Bloomington, IN, USA.

Teaching Experience

Associate instructor

2014 *Animal Behavior*
NPB 102, upper-level undergraduate class, enrollment ~ 120 students

Guest Lecturer

2013 *Sexual Selection and Animal Personalities*
Introduction to Biology, BIOL 1108, University of Georgia, Athens

2010 *The Fitness Implications of Animal Personalities*
Animal Behavior, BIOL 370, Benedictine University, Lisle, Illinois

Teaching Assistant

2014, 2012, BIS 2B, Introduction to Biology: Principles of Ecology and Evolution, UC Davis
2011, 2010

2011 BIS 2C, Introduction to Biology: and the Tree of Life, UC Davis

2010 ANS 18, Introduction to Aquaculture, UC Davis

Relevant Teaching Skills

- Developed lessons intended to address specific student learning outcomes
- Created tests and quizzes to assess student learning outcomes
- Developed formative assessments
- Developed interactive classroom activities intended to connect science to students' lives
- Use cyber learning environments to distribute materials and engage students
- Use a variety of multimedia sources in interactive lessons

Mentoring experience

2010-2015 Recruited and mentored 15 undergraduates and four graduate students, in the Hedrick lab at UC Davis and the Kortet lab at the University of Oulu, Finland. This consisted of teaching research methods, experimental design, data collection and statistical analysis. Additional mentoring of undergraduate and graduate student researchers in the Pruitt lab at Pittsburgh University. Several of my research students have been co-authors on my research papers (see publication section)

Outreach Activities

2015 Developed presentations on animal behavior to present to middle and high school students at the International School in Sapporo, Japan. These presentations consisted of a lesson on spider foraging behavior and classroom experiments on variation in foraging behavior in the redback spider, *Latrodectus hasselti*.

2014 Engaged in outreach activities at Sacramento-area high schools. These activities included presenting to science clubs and classes regarding the role of research scientists, the life of a graduate student, and alternative careers in science.

2009-2014 Mentor for the Student and Landowner Education and Watershed Stewardship program, which engages high school students in habitat restoration projects to enhance classroom learning.

2011 Co-chair of the UC Davis outreach program Watch it Don't Squash it (WIDSI), which partners UCD graduate students with local underprivileged K-12 schools to integrate graduate research into their curriculum via interactive projects.

Academic Service

Committee Work

2011-2012 Graduate student adviser for the UC Davis Animal Behavior Graduate Group

Membership in Professional Societies

Animal Behavior Society, American Society of Naturalists, The Orthopterists' Society, and the American Arachnological Society, Sigma Xi

Peer Reviewer

Animal Behaviour, Behavioral Ecology, Behavioral Ecology and Sociobiology, Biology Letters, Current Zoology, Ethology, Frontiers in Ecology and Evolution, Journal of Insect Behavior, PeerJ

References

Available on request