

Benjamin J. Toscano

Visiting Assistant Professor of Biology

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Education

- Ph.D.** University of South Carolina, Department of Biological Sciences, Integrative Biology (**NSF Graduate Research Fellow**), 8/2009 to 8/2014
- B.S.** University of Connecticut, Department of Ecology and Evolutionary Biology, *magna cum laude*, 8/2005 to 5/2008
- State University of New York College of Environmental Science and Forestry,
Department of Environmental and Forest Biology, 8/2004 to 5/2005
- Other** Humboldt State University, Teaching Individual/Agent-based Modeling, 6/2012

Awards, Grants and Selected Recognitions

- 2018 Don Abbott Postdoc Research Award, ASN150 Meeting, American Society of Naturalists (\$400)
- 2017 Arnold O. Beckman Postdoctoral Fellowship 3rd year extension, Beckman Foundation (\$68,780)
- 2015 Arnold O. Beckman Postdoctoral Fellowship, Beckman Foundation (\$115,705)
- 2014 Eco-DAS XI (Ecological Dissertations in the Aquatic Sciences) symposium participant, NSF
- 2013 John A. Knauss Marine Policy Fellowship, Sea Grant (\$56,500, declined)
- 2013 SPARC Graduate Fellowship, University of South Carolina (\$1,652)
- 2013 John and Winona Vernberg Award in Biological Sciences, University of South Carolina (\$750)
- 2013 F. John Vernberg Graduate Fellowship in Marine Science, University of South Carolina (\$1,000)
- 2013 Graduate Research Fellowship, NSF (\$121,500)
- 2013 William H. Nolte Graduate Teaching Assistant Award, University of South Carolina (\$500)
- 2012 Graduate Research Fellowship, National Estuarine Research Reserve System (\$85,715, declined)
- 2011 SEERS (Southeastern Estuarine Research Society) Student Travel Award (\$150)
- 2011 Elsie Taber Fellowship, University of South Carolina (\$1,164)
- 2011 *Breakthrough* Outstanding Graduate Students, University of South Carolina
- 2011 Max Cohn Memorial Scholarship, International Women's Fishing Association (\$1,000)
- 2010 Ford Foundation Predoctoral Fellowship, Honorable Mention
- 2010 Slocum Lunz Foundation Grant, Belle W. Baruch Marine Laboratory (\$864)
- 2010 Max Cohn Memorial Scholarship, International Women's Fishing Association (\$1,000)
- 2010 Vernberg Bicentennial Fellowship in Marine Science, University of South Carolina (\$500)
- 2009 South Carolina Wildlife Federation Scholarship (\$500)
- 2008 Graduated *magna cum laude*, University of Connecticut
- 2007 Undergraduate Research Experience and Knowledge Award, Science Foundation Ireland
- 2006 Connecticut B.A.S.S. Federation Scholarship (\$750)
- 2004 Rank of Eagle Scout: Boy Scouts of America

Publications

*indicates undergraduate coauthor under my advisement

17. C.N. Keiser, S.J. Ingley, **B.J. Toscano**, I. Scharf and J.N. Pruitt. Habitat complexity dampens selection of prey personality. In press at *Ethology*.

16. **B.J. Toscano**, V. Hin and V.H.W. Rudolf. 2017. Cannibalism and intraguild predation community dynamics: coexistence, competitive exclusion, and the loss of alternative states. *American Naturalist*. 190: 617-630.
15. **B.J. Toscano**. 2017. Prey behavioral reaction norms: response to threat predicts susceptibility to predation. *Animal Behaviour*. 132: 147-153.
14. C.T. Kremer, A.K. Williams, M. Finiguerra, A.A. Fong, A. Kellerman, S.F. Paver, B.B. Tolar and **B.J. Toscano**. 2017. Realizing the potential of trait-based ecology: new tools and collaborative approaches. *Limnology and Oceanography* 62: 253-271.
13. **B.J. Toscano**, B.R. Rombado* and V.H.W. Rudolf. 2016. Deadly competition and life-saving predation: the potential for alternative stable states in a stage-structured predator-prey system. *Proceedings of the Royal Society B: Biological Sciences* 283: 20161546.
12. **B.J. Toscano**, N.J. Gownaris, S.M. Heerhartz and C.J. Monaco. 2016. Personality, foraging behavior and specialization: integrating behavioral and food web ecology at the individual level. *Oecologia* 182: 55-69.
11. **B.J. Toscano** and C.J. Monaco. 2015. Testing for relationships between individual crab behavior and metabolic rate across ecological contexts. *Behavioral Ecology and Sociobiology* 69: 1343-1351.
10. J.N. Griffin, **B.J. Toscano**, B.D. Griffen and B.R. Silliman. 2015. Does relative abundance modify multiple predator effects? *Basic and Applied Ecology* 16: 641-651.
9. **B.J. Toscano** and B.D. Griffen. 2014. Trait-mediated functional responses: predator behavioral type mediates prey consumption. *Journal of Animal Ecology* 83: 1469-1477. Article highlighted by G. Kalinkat. 2014. Bringing animal personality into the food web arena. *Journal of Animal Ecology* 83: 1245-1247.
8. **B.J. Toscano**, B. Newsome* and B.D. Griffen. 2014. Parasite modification of predator functional response. *Oecologia* 175: 345-352.
7. **B.J. Toscano**, J. Gatto* and B.D. Griffen. 2014. Effect of predation threat on repeatability of individual crab behavior revealed by mark-recapture. *Behavioral Ecology and Sociobiology* 68: 519-527.
6. **B.J. Toscano** and B.D. Griffen. 2013. Predator size interacts with habitat structure to determine the allometric scaling of the functional response. *Oikos* 122: 454-462.
5. B.D. Griffen, **B.J. Toscano** and J. Gatto*. 2012. The role of individual behavioral type in mediating indirect interactions. *Ecology* 93: 1935-1943.
4. F.J. Fodrie, M.C. Brodeur, **B.J. Toscano** and S.P. Powers. 2012. Friend or foe: kleptoparasitism, conflicting demands for prey, and the conditional dependence of risk taking. *Journal of Experimental Marine Biology and Ecology* 422: 114-121.
3. **B.J. Toscano** and B.D. Griffen. 2012. Predatory crab size diversity and bivalve consumption in oyster reefs. *Marine Ecology Progress Series* 445: 65-74.
2. **B.J. Toscano**, D. Pulcini, B. Hayden, T. Russo, M. Kelly-Quinn and S. Mariani. 2010. An ecomorphological framework for the coexistence of two cyprinid fish and their hybrids in a novel environment. *Biological Journal of the Linnean Society* 99: 768-783.
1. **B.J. Toscano**, F.J. Fodrie, S.L. Madsen and S.P. Powers. 2010. Multiple prey effects: agonistic behaviors between prey species enhances consumption by their shared predator. *Journal of Experimental Marine Biology and Ecology* 385: 59-64.

Employment/Research Positions

7/2018-present, Visiting Assistant Professor of Biology, Trinity College, Department of Biology

1/2015-6/2018, Postdoctoral Research Associate (**Arnold O. Beckman Postdoctoral Fellow** starting 9/2015), Rice University, BioSciences (Advisor: Dr. Volker Rudolf)

9/2009-8/2014, Graduate Research Associate (**National Science Foundation Graduate Research Fellow** starting 9/2011), University of South Carolina, Department of Biological Sciences (Advisor: Dr. Blaine Griffen)

Presentations *indicates undergraduate coauthor under my advisement

B.J. Toscano and V.H.W. Rudolf. 2018. Long-term dynamics of life-history intraguild predation (poster presentation). "Predator-Prey Interactions" Gordon Research Conference. Ventura, CA, USA.

B.J. Toscano and V.H.W. Rudolf. 2018. Long-term dynamics of life-history intraguild predation. American Society of Naturalists Meeting. Asilomar, CA, USA. ***1st place in postdoc awards**

B.J. Toscano. 2017. Community consequences of stage-structured species interactions (invited talk). U.S. Army Corps of Engineers. Vicksburg, MS, USA.

B.J. Toscano and V.H.W. Rudolf. 2017. Long-term dynamics of a size-structured community (poster presentation). Beckman Symposium. Irvine, CA, USA.

B.J. Toscano, V. Hin and V.H.W. Rudolf. 2016. Cannibalism inhibits predator persistence in life-history intraguild predation systems (poster presentation). Ecological Society of America Meeting. Fort Lauderdale, FL, USA.

B.J. Toscano, V. Hin and V.H.W. Rudolf. 2016. Cannibalism inhibits predator persistence in life-history intraguild predation systems (poster presentation). Beckman Symposium. Irvine, CA, USA.

B.J. Toscano. 2016. Effects of phenotypic variation on species interactions (invited talk). Rice University. Houston, TX, USA.

B.J. Toscano, B.R. Rombado* and V.H.W. Rudolf. 2016. Juvenile competitive bottleneck dynamics in freshwater zooplankton. American Society of Naturalists Meeting. Asilomar, CA, USA.

B.J. Toscano. 2015. Intrinsic and extrinsic influences on predator behavior: effects on functional responses. Functional responses as a tool in invasion ecology: current applications and future directions (workshop). Stellenbosch, South Africa.

B.J. Toscano. 2014. The personalities of predators. Eco-DAS XI (Ecological Dissertations in the Aquatic Sciences) symposium. Honolulu, HI, USA.

B. Newsome, **B.J. Toscano** and B.D. Griffen. 2014. Parasite modification of predator functional response (poster presentation). Evolution Meeting. Raleigh, NC, USA.

C.J. Monaco and **B.J. Toscano**. 2014. Testing for relationships between individual crab behavior and metabolic rate across ecological contexts (poster presentation). Benthic Ecology Meeting. Jacksonville, FL, USA.

B.J. Toscano and B.D. Griffen. 2014. Prey behavioral types and susceptibility to predation (poster presentation). Benthic Ecology Meeting. Jacksonville, FL, USA.

B.J. Toscano and B.D. Griffen. 2013. Trait-mediated functional responses: consumer personality and fear mediate prey consumption. Southeastern Estuarine Research Society Meeting. Charleston, SC, USA.

- B.J. Toscano** and B.D. Griffen. 2013. Trait-mediated functional responses: consumer personality and fear mediate prey consumption (poster presentation). Benthic Ecology Meeting. Savannah, GA, USA. ***1st place in student awards**
- B. Newsome, **B.J. Toscano**, D. Pulcini and B.D. Griffen. 2013. Ecological effects of resource polymorphism in a saltmarsh predator (poster presentation). Benthic Ecology Meeting. Savannah, GA, USA.
- B.J. Toscano** and B.D. Griffen. 2012. Foraging in a tight spot: the crab functional response in reefs (poster presentation). Benthic Ecology Meeting. Norfolk, VA, USA.
- B.J. Toscano** and B.D. Griffen. 2011. Intraspecific predator diversity and energy transfer in oyster reefs. Benthic Ecology Meeting. Mobile, AL, USA.
- B.J. Toscano** 2011. Causes and consequences of niche variation within a crab predator (invited talk). East Carolina University. Greenville, NC, USA.
- B.J. Toscano**, F.J. Fodrie, S.L. Madsen and S.P. Powers. 2010. Multiple prey effects: agonistic behaviors between prey species enhances consumption by their shared predator (poster presentation). Benthic Ecology Meeting. Wilmington, NC, USA.
- M.C. Brodeur, F.J. Fodrie, **B.J. Toscano** and S.P. Powers. 2010. Starving prey and scary predators: resource availability and condition influence prey behavioral responses to predation risk. Benthic Ecology Meeting. Wilmington, NC, USA.
- B.J. Toscano**, F.J. Fodrie, S.L. Madsen and S.P. Powers. 2009. Interference behaviors between prey species enhances consumption by their shared predator. Southeastern Ecology and Evolution Conference. Gainesville, FL, USA.
- B. Hayden, **B.J. Toscano**, M. Kelly-Quinn and S. Mariani. 2008. A molecular investigation into hybridization in cyprinid fishes in Ireland. Environ 2008. Dundalk, Ireland.
- B.J. Toscano** and E.T. Schultz. 2008. Gonopodium biomechanics of the sailfin molly (poster presentation). Frontiers in Undergraduate Research. Storrs, CT, USA.
- Hayden B., **B.J. Toscano**, M. Kelly-Quinn and S. Mariani. 2007. A molecular investigation into hybridization in cyprinid fishes in Ireland (poster presentation). European Ichthyological Society Congress XII. Dubrovnik, Croatia. ***2nd place in student awards**
- B.J. Toscano**, M. Kelly-Quinn and S. Mariani. 2007. Morphometric variation and trophic niches in sympatric bream, roach, and their hybrids. UREKA Summer Symposium. Dublin, Ireland.

Teaching/Pedagogy and Mentoring

2018	Rice Center for Teaching Excellence Reading Group: "How College Works"
2017	Instructor of Record, Freshman Seminar on Local Biology Research, Rice University
2017	Mentored undergraduate researchers Sasha Figel, Julian Wilson, Simone Maddox
2016	Rice Center for Teaching Excellence Reading Group: "Excellent Sheep"
2016	Mentored undergraduate researchers Bianca Rombado, Audrey Smith, Nakian Kim
2016	Guest lecturer, Invertebrate Biology, Rice University
2013	Guest lecturer, Behavior of Marine Organisms, University of South Carolina
2010-2013	Mentored undergraduate researcher Burns Newsome who received Magellan Scholar Grant for undergraduate research (\$3,000) resulting in publication in <i>Oecologia</i>
2012	Mentored undergraduate researcher John Gatto resulting in publication in <i>Ecology</i>
2010	Teaching assistant, Animal Behavior, University of South Carolina
2010	Teaching assistant, Ecology and Evolution, University of South Carolina
2009-2010	Teaching assistant, Biological Principles II, University of South Carolina

Outreach and Service

Reviewer	<i>African Journal of Aquatic Science</i> (1), <i>American Naturalist</i> (1), <i>Animal Behaviour</i> (2), <i>Behavioral Ecology</i> (3), <i>Biological Invasions</i> (1), <i>Ecology</i> (3), <i>Ecology and Evolution</i> (4), <i>Ecology Letters</i> (1), <i>Hydrobiologia</i> (2), <i>International Journal of Biodiversity and Conservation</i> (1), <i>Invertebrate Reproduction and Development</i> (1), <i>Journal of Animal Ecology</i> (4), <i>Journal of Experimental Marine Biology and Ecology</i> (1), <i>Journal of Fish Biology</i> (1), <i>Marine Biology</i> (2), <i>Marine Ecology Progress Series</i> (4), <i>Marine Environmental Research</i> (1), <i>North American Journal of Aquaculture</i> (1), <i>Oecologia</i> (1), <i>Oikos</i> (1), <i>Pest Management Science</i> (1), <i>PLOS ONE</i> (2), <i>Proceedings of the Royal Society B: Biological Sciences</i> (3), <i>Scientific Reports</i> (1), <i>Trends in Ecology and Evolution</i> (1), NSF Biological Oceanography (OCE) (3), NSF Integrative Ecological Physiology (IOS) (1)
2018	Poster judge for Rice University Undergraduate Research Symposium
2018	Moderator for “Consumer-Resource Dynamics” session at American Society of Naturalists Meeting
2017	Poster judge for Rice BioSciences Retreat and SCI Summer Research Colloquium
2013	Judge in 57 th Region II Science and Engineering Fair (K-12)
2013	President, Graduate Association of Biological Sciences, University of South Carolina
2012	Vice-president, Graduate Association of Biological Sciences, University of South Carolina
2011-2014	Organized Integrative Biology Journal Club, University of South Carolina
2009-2014	Research presentations to visitors, Baruch Marine Field Laboratory
2012	“Science in Action: Night at the Museum”; explained my research to K-12 teachers
2009	Discovery Day at Dauphin Island Sea Lab; prepared an aquarium display to present my research to the public
2009	Alabama Deep Sea Fishing Rodeo; explained fish aging techniques to the public
2008	STRONG-CT, NSF-funded outreach program; hands-on research demonstrations to community college students