Benjamin J. Toscano
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 starting 2011), 2009-2014 (Advisor: Dr. Blaine Griffen)
B.S.	University of Connecticut, Department of Ecology and Evolutionary Biology, *magna cum laude*, 2005-2008 (Advisor: Dr. Eric Schultz)
	State University of New York College of Environmental Science and Forestry, Department of Environmental and Forest Biology, 2004-2005
Other	Humboldt State University, Teaching Individual/Agent-based Modeling, 2012

Employment

2020-present	Assistant Professor of Biology, Trinity College, Department of Biology
2018-2020	Visiting Assistant Professor of Biology, Trinity College, Department of Biology
2015-2018	Arnold O. Beckman Postdoctoral Fellow, Rice University, BioSciences (Advisor: Dr. Volker Rudolf)

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	1st place in student awards (poster presentation), Benthic Ecology Meeting
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)
2007	2nd place in student awards (oral presentation), European Ichthyological Society Congress XII
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

Manuscripts in preparation *indicates undergraduate coauthor I advised

B.J. Toscano, H. Allegue, N.J. Gownaris, M. Drausnik*, Z. Yung*, D. Bauloye*, F. Gorman* and M. Ver Pault*. Among-individual behavioral responses to predation risk are invariant in freshwater snails. To be submitted September 2022.

N.J. Gownaris, **B.J. Toscano**, A. Patterson and K.H. Elliott. Individual variation in the foraging personality and plasticity of an Arctic seabird.

Manuscripts in review *indicates undergraduate coauthor I advised

B.D. Griffen, J. Alder, L. Anderson III, E. Gail Asay, A.M.H. Blakeslee, M. Bolander, D. Cabrera, J. Carver, L. Crane, E.R. DiNuzzo, L.S. Fletcher, J. Luckett, M. Meidell, E. Pinkston, T.C. Reese, M.F. Repetto, N. Smith, C. Stancil, C.K. Tepolt, **B.J. Toscano** and A. Vernier. Latitudinal and temporal variation in injury and its impacts in the invasive Asian shore crab *Hemigrapsus sanguineus*. In review at ***Scientific Reports***.

K. Quezada-Villa, Z.J. Cannizzo, J. Carver, R.P. Dunn, L.S. Fletcher, M.E. Kimball, A.L. McMullin, B. Orocu, B.W. Pfirrmann, E. Pinkston, T.C. Reese, N. Smith, C. Stancil, **B.J. Toscano** and B.D. Griffen. Predicting diet in brachyuran crabs using external morphology. In review at ***Journal of Animal Ecology***.

Publications *indicates undergraduate coauthor I advised

22. **B.J. Toscano**, D. Pulcini, R. Costa-Pereira, W.B. Newsome* and B.D. Griffen. 2022. Polymorphism promotes edge utilization by marsh crabs. ***Oecologia*** 198: 1031-1042

21. **B.J. Toscano** and V.H.W. Rudolf. 2021. Developmental change in predators drives different community configurations. ***American Naturalist*** 197: 719-731.

20. **B.J. Toscano**, A.S. Figel* and V.H.W. Rudolf. 2021. Ontogenetic development underlies population response to mortality. ***Oikos*** 130: 464-475.

19. **B.J. Toscano**, J.L.L. Lichtenstein and R. Costa-Pereira. 2020. Intraspecific behavioral variation mediates insect prey survival via direct and indirect effects. ***Diversity*** 12: 152.

18. R. Costa-Pereira, **B.J. Toscano**, F.L. Souza, T. Ingram and M.S. Araújo. 2019. Individual niche trajectories drive fitness variation. ***Functional Ecology*** 33: 1734-1745.

Published hereafter with Trinity College affiliation

17. C.N. Keiser, S.J. Ingley, **B.J. Toscano**, I. Scharf and J.N. Pruitt. 2018. Habitat complexity dampens selection of prey personality. ***Ethology***. 124: 25-32.

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.

Invited talks

B.J. Toscano. 2019. The ecology of individual behavior: Snails to seabirds. Trinity College, CT, USA.

B.J. Toscano. 2018. Inside and out: dynamic feedbacks between within-population variation and ecological communities. Trinity College, CT, USA.

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

B.J. Toscano. 2016. Effects of phenotypic variation on species interactions. Rice University. Houston, TX, 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.J. Toscano 2011. Causes and consequences of niche variation within a crab predator. East Carolina University. Greenville, NC, USA.

Conferences and symposia (last 7 years) *indicates undergraduate coauthor I advised

F. Gorman*, M. Ver Pault*, H. Allegue and **B.J. Toscano**. 2021. Individual and population response to predation risk in *Physa acuta* (poster presentation). Trinity College Summer Research Symposium. Hartford, CT, USA.

N.J. Gownaris, **B.J. Toscano**, A. Patterson and K.H. Elliott. 2021. Individual variation in the foraging personality and plasticity of an Arctic seabird. Waterbird Society Meeting (Virtual).

Z. Yung*, M. Drausnik*, H. Allegue and **B.J. Toscano**. 2019. Revealing individual-level prey responses to predation risk (poster presentation). Trinity College Summer Research Symposium. Hartford, CT, USA.

P.O. Orloff*, C.C. Swart and **B.J. Toscano**. 2019. Comparing intrinsic vs. extrinsic drivers of individual behavior: State-dependence of snail (*Helisoma trivolvis*) personality (poster presentation). Trinity College Summer Research Symposium. Hartford, CT, USA.

D.S. Bauloye* and **B.J. Toscano**. 2019. Testing for relationships between individual prey behavior and growth rate across different levels of risk (poster presentation). Trinity College Summer Research Symposium. Hartford, CT, USA.

M. Drausnik* and **B.J. Toscano**. 2019. Environmental dependence of individual behavioral plasticity across populations (poster presentation). Trinity College 32nd Annual Research Symposium. Hartford, CT, USA.

P.O. Orloff *, C.C. Swart and **B.J. Toscano**. 2019. Investigating the existence of a plasticity syndrome in *Helisoma* snails and a potential link to neural complexity (poster presentation). Trinity College 32nd Annual Research Symposium. Hartford, CT, USA.

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

Courses taught at Trinity College

BIOL 429 – Experimental Ecology (Previously Behavioral Mechanisms in Ecology) – Fall 2020

BIOL 333 – Ecology – Fall 2018, Fall 2019 (2 lab sections), Fall 2021, Fall 2022

BIOL 222 – Invertebrate Zoology – Spring 2019, Spring 2020 (2 lab sections), Spring 2021 (2 lab sections), Spring 2022

BIOL 182 – Evolution of Life – Fall 2020, Fall 2021, Fall 2022

BIOL 130 – Animal Behavior and Human Nature – Spring 2019

Pedagogy and additional teaching experience

2021	Lightning talk 'Best Practices in Remote Instruction' hosted by Winter Institute on Teaching and Technology – "Can cell phones replace clickers in a "hybrid" learning environment?"
2020-present	Mellon Grant: "Diversity, Representation, and Sense of Inclusion in Course Syllabi" with Adi Katz and Peter Bent (Trinity College)
2018	Rice Center for Teaching Excellence Reading Group: "How College Works"
2017	Instructor, Freshman Seminar on Local Biology Research, Rice University
2017	Rice Center for Teaching Excellence Reading Group: "Excellent Sheep"
2016	Guest lecturer, Invertebrate Biology, Rice University
2013	Guest lecturer, Behavior of Marine Organisms, University of South Carolina
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

Mentoring

2022	Mentored undergraduate researchers Mia Ver Pault, Flynn Gorman, Anna Bauer, Alyce Segal (Summer Research Program), Martina Exnerova (Summer Research Program) (Trinity College)
2021	Mentored undergraduate researchers Mia Ver Pault (ISP program), Flynn Gorman (Summer Research Program), Julia Flower, Brenda Piedras (Trinity College)
2020	Mentored undergraduate researchers Stephen Tyler (Summer Research Program), Aria Mildon (Summer Research Program), Joe Tansino, Julia Flower, Brenda Piedras (Trinity College)
2019	Mentored undergraduate researchers Zach Yung (ISP program), Peyton Orloff (ISP program), Marta Drausnik (ISP program), Daniel Bauloye (Summer Research Program), Emilie Platteter, Sarah Wilson (Trinity College)
2018	Mentored undergraduate researcher Emilie Platteter (Trinity College)
2018	Mentored undergraduate researcher Sasha Figel (Rice University) resulting in publication in *Oikos* (undergraduate coauthor)
2017	Mentored undergraduate researchers Sasha Figel, Julian Wilson, Simone Maddox (Rice University)
2016	Mentored undergraduate researchers Bianca Rombado resulting in publication in *Proc B*, Audrey Smith, Nakian Kim (Rice University)
2010-2013	Mentored undergraduate researcher Burns Newsome (University of South Carolina) who received Magellan Scholar Grant for undergraduate research ($3,000), resulting in publication in *Oecologia* (undergraduate coauthor)
2012	Mentored undergraduate researcher John Gatto (University of South Carolina) resulting in publications in *Ecology* and *Behavioral Ecology and Sociobiology* (undergraduate coauthor)

Outreach and Service

Reviewer	*African Journal of Aquatic Science* (1)*, American Naturalist* (5), *Animal Behaviour* (3), *Animal Biodiversity and Conservation* (1), *Aquatic Invasions* (1), *Behavioral Ecology* (4), *Behaviour* (1), *Behavioural Processes* (2), *Biological Invasions* (1), *Biological Journal of the Linnean Society* (1), *Current Zoology* (1), *Diversity* (1), *Ecology* (7), *Ecology and Evolution* (7), *Ecology Letters* (2), *Freshwater Science* (1), *Functional Ecology* (1), *Hydrobiologia* (2), *International Journal of Biodiversity and Conservation* (1), *Invertebrate Reproduction and Development* (1), *Journal of Animal Ecology* (9), *Journal of Experimental Marine Biology and Ecology* (3), *Journal of Fish Biology* (1), *Marine Biology* (2), *Marine Ecology* (1), *Marine Ecology Progress Series* (6), *Marine Environmental Research* (1), *North American Journal of Aquaculture* (1), *Oecologia* (4), *Oikos* (1), *Pest Management Science* (1), *PLOS ONE* (4), *Proceedings of the Royal Society B: Biological Sciences* (3), *Scientific Reports* (2), *Trends in Ecology and Evolution* (1), NSF Biological Oceanography (OCE) (3), NSF Integrative Ecological Physiology (IOS) (1), NSF Animal Behavior (IOS) (2)
2020-present	TriBeta Faculty Advisor, Trinity College chapter
2019	Trinity College Master Class lecture for Bantam Visit Day: "Trophic Cascades"
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 57th 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, Dauphin Island Sea Lab; prepared aquarium display to present research to the public
2009	Alabama Deep Sea Fishing Rodeo; explained fish aging techniques to the public
2008	STRONG-CT, NSF-funded outreach; research demonstrations to community college students