**John D. Zardus – Curriculum Vitae**

Department of Biology office: (843) 953-6627

The Citadel, Military College of South Carolina home: (843) 763-3671

171 Moultrie Street fax: (808) 953-7264

Charleston, SC 29409 e-mail: john.zardus@citadel.edu

U.S.A.

## Education

Ph.D., 1998, (Biology) Northeastern University, Boston, Massachusetts

Dissertation: “Larval Development and Autecology of the Protobranch Bivalve *Acila castrensis*”, Advisor: M. Patricia Morse

M.S., 1991, (Zoology) Brigham Young University, Provo, Utah

Thesis: “Diet of the Barnacle *Balanus nubilus* (Darwin) and the Effects of the Anemone *Metridium senile* (Linnæus) on its Feeding”, Advisor: Lee F. Braithwaite

B.S., 1988, (Zoology) Brigham Young University, Provo, Utah.

Minor: Botany

**Research Interests**

My research interests center on the evolution and ecology of marine invertebrates. The scope of my work extends to larval biology, field ecology, population genetics and molecular systematics. I am presently studying the biology of barnacles that are epizoic with sea turtles, whales and other marine hosts. Using a combination of microscopical observation of functional morphology, laboratory experiments in chemical ecology, benchwork in molecular genetics, and field studies on larval recruitment, I am seeking to understand how symbiotic barnacles find, recognize, and attach to their specific hosts.

**Teaching Interests**

Interested in ecological processes and biological diversity generally, I relish explaining to introductory biology students the patterns of ecosystem function and the evolutionary processes that drive the tremendous diversity of life on this planet. I also specialize in teaching marine biology and invertebrate zoology to upperclass and graduate students. I teach biology in the framework of ecological patterns and processes with an emphasis on evolutionary theory and guided by my philosophy of teaching about life where it lives whenever possible. Mentoring, to me, is integral to teaching and I invite students to join in my research and am eager to assist them in their journey of professional development.

**Academic Appointments**

Department Chair, Department of Biology, The Citadel, 2022 – present.

Full Professor, Department of Biology, The Citadel, 2015 – present.

Associate Professor, Department of Biology, The Citadel, 2009 – 2015.

Assistant Professor, Department of Biology, The Citadel, 2005 – 2009.

Adjunct Faculty, College of Charleston, Grice Marine Lab, Graduate Program in Marine Biology & Master of Science in Environmental Studies, 2006 – present.

Curatorial Affiliate, Division of Invertebrate Zoology, Peabody Museum of Natural History, Yale University, 2016 – present.

**Postdoctoral Positions Held**

Research Fellow, University of Hawaii, Honolulu, HI 2001-2005

Population linkages in a barnacle introduced to Hawaii; biofouling studies of marine invertebrates using larval bioassays of settlement and adhesion (Michael G. Hadfield P.I.).

Postdoctoral Fellow, University of Massachusetts – Boston, MA 1999-2001

Population genetics of deep-sea mollusks, utilizing formalin-preserved specimens collected throughout the deep Atlantic (Ron J. Etter and Michael A. Rex co-P.I.’s).

**Research Support Awarded (last 5 years)**

***External Awards***

National Science Foundation

2024-27 Division of Environmental Biology, Systematics and Biodiversity Science Cluster. “Collaborative Research: Gluers, Grippers, and Gougers: Host-adapted Diversification of Barnacles Epizootic with Marine Megafauna and their Turtlescape Genomics”. Lead P.I. Amount awarded: $448,731.

***Internal Awards***

Near Center for Climate Studies – Swain Family School of Science and Mathematics, The Citadel

2021-23 Climatological Research Studies Grant: “Effects of temperature on barnacle biomechanics: Larval swimming and adult feeding in a globally important biofouling barnacle, *Amphibalanus amphitrite*”, Co-P.I. with Clinton Moran (The Citadel), $11,189.

***Faculty Research Awards***

Citadel Foundation

2025-26 Testing Split Identities in Barnacles from Different Sea Turtle Hosts, $4,000.

2024-25 Dispersal by Hitchhiking or Swimming, What’s a Barnacle to Do? $3,971.

2023-24 Ghosts of Sea Turtles Present: Probing Barnacle Samples for Remnant Sea Turtle eDNA, $2,024.

2022-23 Larval Development of the Hawksbill Barnacle *Chelonibia caretta*, $2,223.

2021-22 Do Barnacles have Boundaries? $2,960.

2020-21 Are Sea Turtles Stepping-Stones or Barricades to Gene Exchange for Barnacles Across Oceans? $2,957.

***Page Charges Awarded***

Citadel Foundation

2021 *Integrative Organismal Biology*, “A global synthesis of the correspondence between epizoic barnacles and their sea turtle hosts”, $1,260.

2020 *Bulletin of Marine Science*/University of Miami, “Revolutions in rearing barnacles: rotating flow and substratum for culturing larvae and adults”, $1,440.

**Sabbatical Leave**

Fall 2020 Barnacles and a Book: Studies in Translocation and Population Connectivity and Vignettes in Tropical Ecology, Charleston, SC

2012-2013 On the Origin of Commensalism in Barnacles, Townsville, Queensland, Australia (Nov. 6 – Dec. 20, 2012) and Charleston, SC

**Teaching Experience (last 5 years)**

 ***Teaching***

The Citadel, Department of Biology, Charleston, SC

Senior Leadership Integration Seminar (LDRS 411) fall: 21

Intro. to Biology I (Biol 130), majors lecture course spring: 21

Intro. to Biology Lab I (Biol 131), majors lab course fall: 22-24; spring: 20, 21

Intro. to Biology II (Biol 140), majors lecture course spring: 23; fall 21

Intro. to Biology Lab II (Biol 141), majors lab spring: 23-25; fall 21

Research Intern (Biol 320-322), undergrad directed research fall/spring: 23-25

Tropical Rainforest & Reef Ecology (Biol 412/610), study away field course maymester:

Belize 23; Panama 22; Trinidad & Tobago 24

Freshwater Biology (Biol 526), graduate lab & lecture course fall: 21

Marine Biology (Biol 409), majors lab & lecture course fall: 05, 08, 10, spring: 14, 17, 20, 22

***Mentoring & Advising***

The Citadel Graduate College, Department of Biology, Charleston, SC

2022 fall Research advisor to Luke Schmitz

2020 spring Research advisor to Kevin Swain

The Citadel, Department of Biology, Charleston, SC (Research Interns)

2025 spring Hannah Wickham (biol): cyprid swimming I

2025 spring Eoin Youngblood (biol): tubular barnacles

2025 spring Sebastian Quinteros (biol): extracting barnacle DNA

2024 fall Sebastian Quinteros (biol): natural history of barnacles

2024 Spring Savannah Fisher (biol): barnacle antifouling

2023 fall Edgar “Lee” Perry (biol): covid-19 distancing & oncology treatment

2022 spring Luke Meetze (biol): swimming in barnacle larvae

Theses advised, College of Charleston, Charleston, SC – Graduate Program in Marine Biology (GPMB) & Master of Science in Environmental Studies (MES)

2025-present Heidi Hellenberg (GPMB), Reproduction in Turtle Barnacles

2021-2024 Conor Torris (GPMB), A Survey of Epibionts of Marine Arthropods in the Charleston Estuary.

2017-2020 Alina M. Hall (GPMB), A Lipidomic Approach to Identifying Immune Response in Atlantic Bottlenose Dolphin (*Tursiops truncatus*) in Response to the Attachment of Epibiotic Tassel Barnacle (*Xenobalanus globicipitis*)*.*

**Professional & Institutional Service (last 5 years)**

Subject Editor, *Marine Biology Research*, deep-sea (exclusive of hydrothermal vents)

2005 – present.

Invited Peer Reviews, Journals:

 Animals, Biodiversitas, Biology Letters, Ecology & Evolution, Frontiers in Ecology & Evolution, Integrative and Comparative Biology, Journal of Crustacean Biology, Journal of Fish Biology, Journal of the Marine Biological Association of the United Kingdom, Marine Biology Research, Marine Ecology Progress Series, Marine Mammal Science, PeerJ, Regional Studies in Marine Science, The Glasgow Naturalist, Zoological Journal of the Linnean Society, Zoology, Zootaxa

Professional Organizations:

SICB Liaison Officer, The Crustacean Society 2014 - present

Board Member, Slocum-Lunz Foundation 2018-2024

University Committees (The Citadel):

Senator (Biology), Faculty Senate 2018 – 2022

Undergrad. Res. Office (college) 2016 – 2022

Faculty Tenure & Promotion (college) 2017 – 2022

University Committees (College of Charleston, Graduate Program in Marine Biology):

Marine Biology Council (C of C) 2020 - 2023

Curriculum and Academic Planning (C of C) 2016 - 2020

**Professional Memberships**

Soc. for Integrative and Comparative Biol. (1991) International Sea Turtle Society (2004)

American Microscopical Society (1996) Unitas Malacologica (2009)

The Crustacean Society (2003)

**Publications (last 5 years)**

 ***Peer Reviewed Articles***

36. Robinson N.J., Lazo-Wasem E.A., Rojas L., **Zardus J.D.,** & Pinou T. 2025. Micro-dermatoglyphic patterns in scutes are highly conserved among sea turtle species. *Herpetological Notes* 18: 175-180.

35. Mignucci-Giannoni, A.A., Cintrón-De Jesús, J., Rivera-Pérez, C.I., Rivera-Tritsare, G.S., & **Zardus, J.D.** 2022. Barnacles associated with whales, dolphins, manatees and sea turtles from the Puerto Rico Archipelago and Florida. *Caribbean Naturalist* 86: 1-24.

34. Boyd, L., **Zardus, J.D.,** Knauer, C., & Wood, L.D. 2021. Evidence for host selectivity and specialization by epizoic *Chelonibia* barnacles between hawksbill and green sea turtles. *Frontiers in Ecology and Evolution* 9: 807237.

33. Lane, Z.M., McElroy, E.J., Kendrick, M.R., & **Zardus, J.D.** 2021. Experimental demonstration of exclusively passive feeding in the sea-turtle barnacle *Chelonibia testudinaria* (Linnaeus, 1758) (Cirripedia: Coronulidae), *Journal of Crustacean Biology* 41: ruab053.

32. Chan, B.K.K., Wong, Y.H., Robinson, N.J., Lin, J.-C., Yu, S.-P., Cheng, I.-J., Dreyer, N., Høeg, J.T., & **Zardus, J.D.** 2021. 500 million years to mobility: Directed locomotion and its ecological function in a turtle barnacle. *Proceedings of the Royal Society B* 288: 20211620.

31. **Zardus, J.D.** 2021. A global synthesis of the correspondence between epizoic barnacles and their sea turtle hosts. *Integrative Organismal Biology* 3: obab002.

30. **Zardus, J.D.** & Lane, Z.M. 2021. Revolutions in rearing barnacles: Rotating flow and substratum for culturing larvae and adults. *Bulletin of Marine Science* 97: 143-161.

29. Dreyer, N., **Zardus, J.D.,** Høeg, J.T., Olesen, J.M., Yu, M.C., & Chan, B.K.K. 2020. How dolphin barnacles attach to their hosts and the paradox of remarkably versatile attachment structures in cypris larvae. *Organisms Diversity & Evolution* 20: 233-249.

***Book Chapters***

3. **Zardus, J.D.** 2025. Phylum Mollusca: Class Bivalvia. In, *Atlas of Marine Invertebrate Larvae*, 2nd edition. M.J. Boyle, C.M. Young & M.A. Sewell eds., pp. 599-623. Academic Press.

**Presentations (last 5 years)**

 ***Conference Presentations (\*denotes presenter)***

49. Fisher, S.S.,\* R.Z. Reynolds, C.J. Moran, & **J.D. Zardus**. 2024 (poster). Temperature impacts on feeding kinematics in the striped barnacle. In: Society for Comparative and Integrative Biology. Seattle, WA

48. Pinou, T., N.J. Robinson, **J.D. Zardus,**\* L. Rojas, & E.A. Lazo-Wasem. 2023 (poster). Micro-dermatoglyphic patterns of sea turtle carapaces do not offer phylogenetic insight nor explain characteristic epibiotic associations. 41st International Sea Turtle Symposium, March 22-25, Cartagena, Columbia.

47. Boyd, L.L., L.D. Wood, **J.D. Zardus**,\* & C.M. Knauer. 2023 (poster). Evidence for epibiont host-selectivity among *Chelonibia* barnacles between hawksbill and green sea turtles. 41st International Sea Turtle Symposium, March 22-25, Cartagena, Columbia.

46. Schmitz, L.A.,\* C.J. Moran, & **J.D. Zardus**. 2023 (oral). Temperature effects on larval swimming of an important biofouling barnacle. In: Society for Comparative and Integrative Biology. JW Marriott Austin, Austin, TX.

***Invited Talks***

18. Sea Turtle Conservancy, Tortuguero, Costa Rica, Sep. 20, 2024. “Hitchhiking the Turtlescape.”

17. Fort Johnson Marine Science Seminar Series, James Island, SC, Nov. 20, 2023. “Getting a Grip on the Evolutionary History and Host-dependancy of Barnacles Epizoic with Marine Megafauna.”