David A. Weese

Associate Professor
Georgia College & State University
Department of Biological and Environmental Sciences
Milledgeville, GA 31061
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Education:

2006-2012 Ph.D., Biological Sciences, Auburn University, Auburn, AL.
Dissertation title: "Revealing hidden diversity in a unique island ecosystem: The evolution, ecology and conservation of anchialine shrimp in the Pacific Basin."
Dissertation Committee: Drs. S.R. Santos, K.M. Halanych, M.C. Wooten, J.E. Bond

2003-2006 M.S., Biological Sciences, Georgia Southern University, Statesboro, GA.
Thesis title: "Molecular population genetics of the Atlantic Sand Fiddler Crab, *Uca pugilator*, along the Atlantic coast."

1998- 2002 B.S., Biological Sciences, Georgia Southern University, Statesboro, GA.
Minor: Chemistry

Professional Experience:

2014-current Assistant professor, Georgia College & State University, Milledgeville, GA.

2015-current Adjunct Instructor, Georgia Military College (Online Camps), Milledgeville, GA.

2012-2014 Postdoctoral Research Associate, Museum of Natural History, University of Michigan, Ann Arbor, MI. (Dr. T.F. Duda)

2008- 2012 Adjunct Instructor, Auburn University at Montgomery, Auburn, AL.

University Teaching Experience:

2014- present Georgia College & State University, Milledgeville GA

- Principles of Biology I – BIOL 1107/BIOL 1107L
- Principles of Biology II – BIOL 1108/BIOL 1108L
- Genetics – BIOL 2100
- Undergraduate Seminar – BIOL 3000, ENSC 3000
- Evolution – BIOL 3700
- Population Genetics – BIOL 4950/5950
- Marine Biology – BIOL 4950/5950, ENSC 4950
- Molecular Ecology – BIOL 4951/5951
- Coastal Biology- BIOL 4951/5951

2014-present **Adjunct Instructor** – Georgia Military College, Milledgeville GA

- General Biology I – BIO 123
- General Biology II – BIO 124
- Environmental Studies – BIO 105

2008-2012 **Adjunct Instructor** – Auburn University of Montgomery, Auburn AL

- Principles of Biology I – BIO 1111
- Principles of Biology I Laboratory – BIO 1111L

- Organismal Biology Laboratory – BIO 1112L

Awards and Fellowships:

2017-2018 *Center for Tropical and Subtropical Aquaculture (CTSA) Applied Research Proposal: "Genetic assessment and *Francisella noatunesis* subsp. *orientalis* incidence in feral populations of Tilapia in Hawaii" ($49,900; PI: Michael Wong, Co-PIs: T. Iwai, R. Klinger-Bowen, L. Yamasaki, **D.A. Weese**)

2017 Faculty Research Grant, Georgia College & State University: "Revealing cryptic diversity in an endemic crayfish of Georgia (*Procambarus lunzi*) using molecular genetics" ($4,470)

2016 Faculty Research Grant, Georgia College & State University: "Investigating the population structure of the Atlantic Sand Fiddler Crab, *Uca pugilator*" ($4,920)

2013 Antarctica Service Medal of the United States of America, National Science Foundation (NSF)

2012 Auburn University PSD Academic Excellence Scholarship ($1,000)

2012 Auburn University College of Science and Mathematics Travel Award, Auburn University ($250)

2011-2012 National Science Foundation (NSF) AASD in Science, Technology, Engineering, and Mathematics (STEM) Scholarship ($3,500)

2011 Auburn University Biological Sciences Departmental Service Award, Auburn University ($100)

2011 Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM) Travel Award ($1,200)

2010-2011 National Science Foundation (NSF) AASD in Science, Technology, Engineering, and Mathematics (STEM) Scholarship ($3,500)

2010 The Margaret McNeal Arant Memorial Award for Outstanding Achievement in Zoology, Auburn University ($100)

2010 Auburn University Biological Sciences Graduate Student Association Travel Grant ($200)

2009 Auburn University PSD Academic Excellence Scholarship ($1,000)

2009 East Asia & Pacific Summer Institutes (EAPSI) for U.S. Graduate Students Program [awarded by the National Science Foundation (NSF OISE-0913667)/Japan Society for the Promotion of Science (JSPS)] ($15,000)

2006-2007 CMB Fellowship, Cellular and Molecular Biosciences Program, Auburn University ($18,000)

2006 Academic Excellence Award: "Molecular population genetics of the Atlantic Sand Fiddler Crab, *Uca pugilator*, along the Atlantic coast," Georgia Southern University ($1,000)

2005-2006 Graduate Student Professional Development Research Fund, Georgia Southern University ($1,000)

2005 Academic Excellence Award: "The use of SSCP in determining the population structure of *Amblyomma americanum* on coastal islands," Georgia Southern University ($1,000)

***D.A. Weese** was a major contributor in project design, development and writing, but was unable to be listed as PI due to funding agency regulations.

Publications (Undergraduate author*):

18. **Weese, D.A.,** T.F. Duda (2019) Effect of predator-prey interactions on predator traits: Differentiation of diets and venoms of a marine snail. *Toxins.* 11(5):299.
17. Hoffman, S.K., K.W. Seitz*, J.C. Havird, **D.A. Weese**, S.R. Santos (2018) Comparing the community structure of *Bacteria* and micro-*Eukarya* from the Hawaiian anchialine ecosystem during wet and dry seasons. *Aquatic Microbial Ecology* 82:87-104.
16. Hoffman, S.K., K.W. Seitz*, J.C. Havird, **D.A. Weese**, S.R. Santos (2018) Diversity and the environmental factors driving spatial variation and diversity among Bacteria and micro-Eukarya communities of the Hawaiian anchialine system. *Hydrobiologia* 806:265-282.
15. Kocot, K.M., T.H. Struck, J. Merkel, D.S. Waits, C. Todt, P.M. Brannock, **D.A. Weese**, J.T. Cannon, L.L. Moroz, B. Lieb, K.M. Halanych (2017) Phylogenomics of Lophotrochozoa with consideration of systematic error. *Systematic Biology*. 66(2): 256-282.
14. **Weese, D.A.,** Y Fujita, S.R. Santos (2016) Looking for needles in the haystack: Molecular identification of anchialine larvae from the Shiokawa Spring, Okinawa, Japan. *Journal of Crustacean Biology* 31(1): 61-67.
13. Justice, J.L.*, **D.A. Weese**, S.R. Santos (2016) Phylogenetic utility, and variability in structure and content, of complete mitochondrial genomes among genetic lineages of the Hawaiian shrimp *Halocaridina rubra* Holthuis 1963 (Atyidae:Decapoda). *Mitochondrial DNA*. 27(4): 2710-2718.
12. Havird, J.C., R.C. Vaught*, **D.A. Weese**, S.R. Santos (2015) Reproduction and development in *Halocaridina rubra* (Crustacea: Atyidae) illuminates larval ecology in the Hawaiian anchialine ecosystem. *Biological Bulletin.* 229: 134-142.
11. Havird, J.C., K.M., Kocot, P.M. Brannock, J.T. Cannon, D.S. Waits, **D.A. Weese,** S.R. Santos, K.M. Halanych (2015) Reconstruction of cyclooxygenase evolution in animals suggests variable, lineage-specific duplications and homologs with low sequence identity. *Journal of Molecular Evolution*. 80:193-208.
10. **Weese, D.A.,** T.F. Duda Jr. (2015) Transcriptomic resources for three geographic populations of *Conus miliaris. Molecular Ecology Resources*. 15(1):228-229.
9. Cannon, J.T., K.M. Kocot, D.S. Waits, **D.A. Weese,** B.J. Swalla, S.R. Santos, K. Halanych (2014) Phylogenomic resolution of the Hemichordate and Echinoderm Clade. *Current Biology.* 24(23):2828-2832.
8. He, L., A. Zhang, S. Li, **D.A. Weese**, J. Li, J. Zhang (2014) Demographic response of cutlasfish (*Trichiurus japonicas* and *T. nanhaiensis*) to fluctuating palaeo-climate and regional oceanographic conditions in the China seas. *Scientific Reports*. 4:srep06380.
7. **Weese, D.A.,** Y. Fujita, S.R. Santos (2013) Multiple colonizations lead to cryptic diversity in an island ecosystem: Comparative phylogeography and conservation of anchialine shrimp in the Ryukyu Archipelago, Japan. *The Biological Bulletin*. 225(1):225-241. **(Editor's Pick Sept. 2013; featured cover article)**
6. **Weese, D.A.**, Y. Fujita, M. Hidaka, S.R. Santos (2012) The long and short of it: Genetic variation and population structure of the anchialine atyid shrimp Caridina rubella on Miyako-jima, Japan. *Journal of Crustacean Biology*. 32(1):109-117.

5. Santos, S.R., **D.A. Weese**. (2011) Rocks and Clocks: Linking geologic history and rates of genetic differentiation in anchialine organisms. *Hydrobiologia*. 677(1):53-64. (**invited contribution**)
4. He, L., A. Zhang, C. Zhu, **D.A. Weese**, Z. Qiao (2011) Phylogeography of the mud crab (*Scylla serrata*) in the Indo-West Pacific reappraised from mitochondrial molecular and oceanographic clues: Transoceanic dispersal and coastal sequential colonization. *Marine Ecology*. 32:52-64.
3. He, L., A. Zhang, **D.A. Weese**, Z. Chaodong, J. Chaojun, Z. Qiao (2010) Late Pleistocene population expansion of *Scylla paramamosain* along the coast of China: a population dynamic response to the Last Interglacial sea level highstand. *Journal of Experimental Marine Biology and Ecology*. 385:20-28.
2. **Weese, D.A.**, S.R. Santos (2009) Genetic identification of source populations for an aquarium-traded invertebrate. *Animal Conservation*. 12:13-19. (**featured cover article**)
1. **Weese, D.A.**, D.K. Mclain, A.E. Pratt, Q.Q. Fang (2009) Molecular population genetics of the Atlantic Sand Fiddler Crab, *Uca pugilator*, along the Atlantic coast. *Current Zoology*. 55:151-158. (**featured cover article**)

Presentations (presenter†):

18. **Weese, D.A.** and T.F. Duda Jr.† (2018) Niche breadth and phenotypic variation: is dietary expansion associated with an increased diversity of venom components in *Conus miliaris*? *American Malacological Society, Honolulu, HI. USA*.
17. **Weese, D.A.** (2016) Past, present and future research: Phylogenomics, population endemism and gene evolution. *Biological and Environmental Sciences Talks (BEST) Seminar Series. Georgia College & State University, Milledgeville, GA. USA*.
16. **Weese, D.A.** (2016) An unexpected journey: Phylogenomics, population endemism and gene evolution across the Pacific Basin. *Georgia Southern University, Statesboro, GA. USA*.
15. **Weese, D.A.** and T.F. Duda Jr.† (2016) Impacts of ecology and gene flow on the differentiation of venoms among populations of a widespread predatory marine gastropod. *The Society for Integrative and Comparative Biology, Portland, OR. USA*.
14. **Weese, D.A.** and T.F. Duda Jr.† (2014) Effects of predator-prey interactions on genetic and phenotypic divergence. *Mollusca 2014: The meeting of the Americas, Mexico City, Mexico.*
13. **Weese, D.A.** and T.F. Duda Jr. (2014) Transcriptome analyses and differential gene expression in the cone snail *Conus miliaris*: Effect of predator-prey interactions on venome evolution. *Evolution, Raleigh, NC. USA*.
12. **Weese, D.A.** (2013) Revealing hidden diversity in a unique island ecosystem: The evolution, ecology and conservation of anchialine shrimp in the Pacific Basin. *University of Michigan, Ann Arbor, MI. USA.*
11. **Weese, D.A.,** Y. Fujita, S.R. Santos (2012) Looking for a needle in a haystack: The search for anchialine Caridean larvae. *Benthic Ecology Meeting, Norfolk, VA. USA*.
10. **Weese, D.A.,** Y. Fujita, S.R. Santos (2011) Uncovering hidden diversity in a unique island ecosystem: Phylogeography and conservation of anchialine shrimp in the Pacific Basin. *Southeastern Ecology and Evolution Conference, Auburn, AL. USA.*

9. **Weese, D.A.,** Y. Fujita, S.R. Santos (2011) Uncovering hidden diversity in a unique island ecosystem: Phylogeography and conservation of anchialine shrimp in the Pacific Basin. *Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), Washington, D.C. USA*. (Poster presentation)
8. **Weese, D.A.**, Y. Fujita, M. Hidaka, S.R. Santos (2010) Phylogeography of Anchialine Shrimp Across the Southern Ryukyu Islands and its Role in Pacific Ecosystem Management. *Hawai'i Conservation Conference: Pacific Ecosystem Management and Restoration, Honolulu, HI. USA*.
7. Fujita,Y. †, **D. A. Weese** (2010) A new species of Caridina from an anchialine cave of Miyako-jima island, the Ryukyu Islands. *Japanese Society of Systematic Zoology, National Museum of Nature and Science, Tokyo, Japan.*
6. Fujita,Y. †, **D. A. Weese** (2010) Two Unusual Caridinan Shrimp Collected from Anchialine Caves of Miyako-jima Island, The Ryukyu Islands. *Japanese Society of Systematic Zoology, National Museum of Nature and Science, Tokyo, Japan.*
5. **Weese, D.A.**, Y. Fujita, M. Hidaka, S.R. Santos (2010) Phylogeography of Anchialine Shrimp Across the Southern Ryukyu Islands. *Southeastern Ecology and Evolution Conference, Atlanta, GA. USA.*
4. **Weese, D.A.**, Y. Fujita, M. Hidaka, S.R. Santos (2009) Population Structure and Evolutionary History of Anchialine Shrimp Across the Southern Ryukyu Islands. *Auburn University Department of Biological Sciences Graduate Research Forum Auburn, AL. USA.* (Poster presentation)
3. **Weese, D.A.** and S.R. Santos (2009) Rocks and Clocks: Linking Geologic History and Rates of Genetic Differentiation in Island Endemics. *Southeastern Ecology and Evolution Conference, Gainesville, FL. USA.*
2. **Weese, D.A.** and S.R. Santos (2008) Genetic Identification of Source Populations for an Invertebrate in the Aquarium Trade. *Auburn University Graduate Research Forum, Auburn, AL. USA.*
1. **Weese, D.A.** and S.R. Santos (2008) Genetic Identification of Source Populations for an Invertebrate in the Aquarium Trade. *Southeastern Ecology and Evolution Conference, Tallahassee, FL. USA*.

STUDENT PRESENTATIONS:

15. Fowler C., Yacoub, J. and **Weese, D.A.** (2019) Tilapia National Conference on Undergraduate Research, Kennesaw State University, Kennesaw GA. (oral)
14. Yacoub, J., Fowler C. and **Weese, D.A.** (2019) More than meets the eye: Revealing cryptic diversity in the crayfish of coastal Georgia. National Conference on Undergraduate Research, Kennesaw State University, Kennesaw GA. (poster)
13. Yacoub, J., Fowler C. and **Weese, D.A.** (2019) Monitoring the threat of invasive tilapia species in Hawaii. Georgia College Student Research Conference, Georgia College, Milledgeville, GA. (Oral)
12. Yacoub, J., Fowler C. and **Weese, D.A.** (2019) Incorporating digital imaging into the scientific process. Georgia College Student Research Conference, Georgia College, Milledgeville, GA. (poster)

11. Yacoub, J., Fowler C. and **Weese, D.A.** (2019) Investigating cryptic diversity in the crayfish of coastal Georgia. College Student Research Conference, Georgia College, Milledgeville, GA. (poster)
10. Xiong, K., Davenport, A., Davis, M., Evan, R. Giovinazzo, J., Harvey, J., Jones, D., Mastin, S., Seccuro, S., Watson, D. and **Weese, D.A.** (2019) Biodiversity assessment of Champion Creek utilizing DNA barcoding. Georgia College Student Research Conference, Georgia College, Milledgeville, GA. (poster)
9. Yacoub, J., Fowler C. and **Weese, D.A.** (2019) Assessing the genetic diversity of invasive tilapia infiltrating Hawaiian streams. Georgia Academy of Sciences, University of North Georgia, Gainesville GA. (oral)
8. Fowler C., Yacoub, J. and **Weese, D.A.** (2019) Investigating cryptic diversity in the crayfish of coastal Georgia. Georgia Academy of Sciences, University of North Georgia, Gainesville GA. (poster)
7. Peppers, D., Wong, M., Klinger-Bown, R.E., Yamaska, L. and **Weese, D.A.** (2019) Bio-surveillance of pathogenic infection to protect Hawaiian tilapia. Georgia College Graduate Research Poster Exhibit and Coemption, Georgia College, Milledgeville, GA. (Poster)
6. Fuerstenau, N. and **Weese, D.A**. (2018) Assessing the genetic diversity of Hawaii's tilapia populaitons. Georgia College Student Research Conference, Georgia College, Milledgeville, GA. (Oral)
5. McNellis, H. and **Weese, D.A.** (2018) Investigating the population structure and genetic diversity of *Procambarus talpoides* on Jekyll Island, GA. Georgia College Student Research Conference, Georgia College, Milledgeville, GA. (Poster)
4. Yacoub, J. and **Weese, D.A.** (2018) Larval Development of Hawaiian Shrimp. Georgia College Student Research Conference, Georgia College, Milledgeville, GA. (Poster)
3. Duffy, S. and **Weese, D.A**. (2017) Identification of Hawaiian Tilapia Using Mitochondrial DNA Sequences. Georgia College Student Research Conference, Georgia College, Milledgeville, GA. (Poster)
2. Fuerstenau, N. and **Weese, D.A**. (2017) Identification of Tilapia Species Through Microsatellite Genetic Analysis. Georgia College Student Research Conference, Georgia College, Milledgeville, GA. (Poster)
1. Lein, F. and **Weese, D.A.** (2016) Optimizing a protocol for extracting high molecular weight DNA from fiddler crabs using 2X cetyltrimethyl ammonium bromide (CTAB). College Student Research Conference, Georgia College, Milledgeville, GA. (Poster)

Research and Professional Development:

2018 Conference: "STEM facilities planning and design institute". June 4-6, *Academic Impressions, Virginia Beach, VA. USA*

2018 Workshop: "Digital Illustration for Biologist". March 2nd, *University of Georgia, Athens, GA. USA*

2013 Workshop: "Next generation population genomics for nonmodel taxa". July 23-24, *Cornell University, Ithaca, NY. USA.*

2012 Course: "Next-gen sequencing: data acquisition, comparative genomics, design and analysis for population genetics, systematics and development)". August 15-29, *The National Evolutionary Synthesis Center (NESCent); Durham, NC. USA.*

2012 Symposium and workshop: "Solving important biological problems through modeling". April 21, *Institute of Bioinformatics; University of Georgia, Athens, GA. USA.*

Pedagogical Development:

2017-2018 Community-based Engaged Learning (C-bEL) Fellow. *Georgia College & State University, Milledgeville, GA. USA.*

2016 Workshop: "Green Eggs and Sand Teacher Workshop". *UGA Marine Extension Service, NOAA and Georgia DNR, Skidaway Institute of Oceanography, Skidaway Island, GA. USA.*

2016 Workshop: "Improving Teacher Quality: Blue Bloods and Red Knots Professional Development Workshop". *Sponsored by Georgia Southern University*, *The University of Georgia Marine Institute, Sapelo Island, GA. USA.*

2014 Workshop: "Experiencing Evolution: A professional development workshop for undergraduate educators". *Sponsored by the Society for the Study of Evolution Education committee, BEACON and NESCent, Raleigh, NC. USA.*

2013 Six-week certification course: "Postdoctoral short-course on college teaching in science and engineering". *Center for Research on Learning and Teaching (CRLT), University of Michigan, Ann Arbor, MI. USA.*

2013 Workshop: "Seven (simple) strategies to improve your teaching" *Center for Research on Learning and Teaching in Engineering, University of Michigan, Ann Arbor, MI. USA.*

2013 Workshop: "It's time for action: Generating an active learning plan". *Center for Research on Learning and Teaching in Engineering, University of Michigan, Ann Arbor, MI. USA.*

2012 Conference: "Alabama Alliance for Students with Disabilities in Science, Technology, Engineering and Mathematics (AASD-STEM)". *Auburn University, Auburn, AL. USA.*

2011 Conference: "Alabama Alliance for Students with Disabilities in Science, Technology, Engineering and Mathematics (AASD-STEM)". *Auburn University, Auburn, AL. USA.*

University Service:

2018-2019 Department of Biological and Environmental Sciences, Faculty Search Committee for Assistant Professor of Entomology

2016-2018 Department of Biological and Environmental Sciences, Coordinator of Biological and Environmental Sciences Talks (BEST) Seminar Series

2015-2018 Georgia College & State University, Graduate Council

2016-2017 Department of Biological and Environmental Sciences, Chair of Faculty Search Committee for Assistant Professor of Aquatic Biology

2016-2017 Georgia College & State University, Curriculum and Assessment Policy Committee (CAPC)

2015-present College of Arts and Sciences, Dean's Advisory Committee

2015-present Department of Biological and Environmental Sciences, Herty Hall Space Utilization Committee

2015-present Department of Biological and Environmental Sciences, Graduate Curriculum Committee

2014-2015 Department of Biological and Environmental Sciences, Faculty Search Committee for Assistant Professor of Entomology

2014-2015 Department of Biological and Environmental Sciences, Undergraduate Curriculum Committee

Undergraduate Mentoring at Georgia College & State University:

2018-2019		
	Jordan Yacoub	Larval development of the Hawaiian shrimp *Halocaridina rubra.* Genetic identification of invasive tilapia species in Hawaii
	Caroline Fowler	Larval development of the Hawaiian shrimp *Halocaridina rubra.* Population structure and genetic diversity of *Procambarus talpoides* from Jekyll Island, Georgia
2017-2018		
	Jordan Yacoub	Larval development of the Hawaiian shrimp *Halocaridina rubra*
	Samuel Parrish	Population structure and genetic diversity of *Procambarus talpoides* from Jekyll Island, Georgia
	Harrison MacNellis	Population structure of *Procambarus lunzi* from Coastal Georgia
	Nicholas Fuerstenau	Screening microsatellites for the identification of invasive *Oreochromis niloticus* hybrids in feral Hawaiian tilapia
2016-2017		
	Nicholas Fuerstenau	Detection of invasive *Oreochromis niloticus* hybrids in cultured and feral Hawaiian tilapia
	Summer Duffy	Identification of Hawaiian Tilapia Using Mitochondrial DNA Sequences. Georgia College Student Research Conference, Georgia College, Milledgeville, GA.
	Jacqueline Tran	Using molecular methods to infer species identity and dispersal potential of barrier island crayfish.
2015-2016		
	Fiona Lien	Optimizing a protocol for extracting high molecular weight DNA from fiddler crabs using 2X cetyltrimethyl ammonium bromide (CTAB)

Graduate Mentoring at Georgia College & State University:

2017-present		
	Daquille Peppers	Master's Thesis: Prevalence of *Francisella noatunensis* subsp. *orientalis* infection in feral Hawaiian Tilapia

Professional Memberships and Services:

Ad Hoc Reviewer: *Scientific Reports, The Biological Bulletin, Conservation Genetics, Journal of Marine Ecology, Journal of Experimental Marine Biology and Ecology, Aquatic Biology, Helgoland Marine Research, ZooKeys, Marine Biodiversity, Journal of Freshwater Science, Zoological Journal of the Linnean Society*

Ad Hoc Reviewer for National Science Foundation (NSF):
Division of Biological Oceanography

Division of Dimensions of Biodiversity

2016-present Council on Undergraduate Research
2015-present The Georgia Academy of Sciences
2014-present Society for Systematic Biology
2010-present The Crustacean Society
2010-2012 American Society of Limnology and Oceanography