Assistant Professor University of Louisiana at Lafayette PO Box 43602 Lafayette, LA 70504 Office: (337) 482-5246 emily.kane@louisiana.edu http://www.thekanelab.com/ Twitter: @KaneLabUL

PROFESSIONAL APPOINTMENTS

08/2020 - current	Assistant Professor , Department of Biology, University of Louisiana at Lafayette
01/2017 — 07/2020	Assistant Professor, Department of Biology, Georgia Southern University
09/2014 – 12/2016	NSF Postdoctoral Fellow , Department of Biology, Colorado State University, Mentor: Cameron Ghalambor
EDUCATION	

2011 – 2014	Ph.D. , Evolution, Ecology, and Organismal Biology, University of California, Riverside, Advisor: Tim Higham
2009 – 2011	Biological Sciences, Clemson University, Advisor: Tim Higham (moved with advisor in 2011)
2006 – 2009	M.S., Wildlife and Fisheries Sciences, Texas A&M University, Advisor: Christopher D. Marshall
2002 – 2006	B.S. , Marine Science with Biology concentration, Southampton College of Long Island University

AWARDS

2020	Nominated (by 2 students), GSU Kathryn Grube Faculty and Staff Unsung Hero Award
2020	Nominated (by a colleague), GSU Faculty Development Committee award for excellence in contributions to teaching

GRANTS AND FELLOWSHIPS

Extramural, awarded	
2022	Friday Harbor Laboratory New Faculty Research Fellowship. Covers lodging and research expenses for 2 months during Summer 2022. ~\$5,000 PI: Emily Kane
2020 – 2021	Steering committee, NSF Research Coordination Network, Undergraduate Biology Education Incubator proposal . Pl: Murphy S (U of Denver), Co-Pl: Tinghitella R (U of Denver)
2019 – 2020	American Association of University Women Research Publication Grant: Trinidadian guppies as a model for understanding the evolution of complex, integrated organisms. \$15,800 Pl: Kane EA

2018 – 2019	Contributor, NSF Conference Grant (IOS-1832822) : Multifunctional structures and multistructural functions: Functional coupling and integration in the evolution of biomechanical systems. \$14,904 to fund participation by speakers in a symposium held during the Society for Integrative and Comparative Biology annual meeting in January 2019, Pl: Hernandez LP.
2018 – 2019	Society for Integrative and Comparative Biology, support for symposium received from 3 divisions, The Crustacean Society, and The American Microscopical Society. \$2,310. Pl: Farina SC, Kane EA, and Hernandez LP.
2014 – 2016	National Science Foundation, Postdoctoral Fellowship in Biology, Broadening participation (DBI-1401560): Evolution of complex phenotypes: The role of integration in adaptation along environmental gradients. \$207,000 for stipend, outreach, and research. Pl: Kane EA.

Extramural, not awarded or pending

2019	Whitehall Foundation, Integrated sensory-motor functions during fish prey capture. \$225,000 over 3 years. Pl: Kane EA (letter of intent submitted, not selected).
2018	Contributor and Co-Pl, USDA Women and Minorities in Science: Planting the STEM: Aquaponics and organic gardening in schools to improve WAM participation. \$99,847.90 Pl: Sendall K (GSU, Biology), Co-Pls: Kane EA, Leege L (GSU Biology), Huffling L (GSU College of Education), Riggs AJ (GSU Waters College of Health Professions).
2017	Mindlin Foundation: Science Communication Prize. \$5,000 Pl: Kane EA.
2017	Mindlin Foundation: I tweet 1% grant to develop a booth for the Statesboro Farmer's Market based on activities in the guppy kit program. Invited for full proposal. \$4,000 Pl: Kane EA.

Intramural, awarded

inci amunai, avvai ded	
Spring 2020	GSU Office of Research : Undergraduate Student Research Assistant (x2). \$3,600 to support student researchers to work on a fish swimming project and manage our fish husbandry duties. Pl: Kane EA
2019 – 2020	GSU Service Award : Travel to the Society for Integrative and Comparative Biology annual meeting. \$1,143.84 Pl: Kane EA
2019 – 2020	GSU College of Science and Mathematics Summer Research Support. \$6,200 for summer salary and salary for 2 students. Includes professional development and monetary support.
2018 – 2020	GSU Student Sustainability Fee Grant : Dating, dining, and ducks: Monitoring the recovery of campus lakes after dredging. \$49,000 for 2 years of graduate student stipends and supplies. Pls: Cohen HE ^{GR} , Kane EA, and Cox CL.

PUBLICATIONS

Peer reviewed

Cohen H^{GR} and **KANE EA**. In press. Biting kinematics are not divergent in ecologically divergent populations of female Trinidadian guppies. Accepted for *Journal of Zoology* 07/01/2021.

- KANE EA and Higham TE. 2020. Kinematic integration during prey capture varies among individuals but not ecological contexts in bluegill sunfish, *Lepomis macrochirus* (Perciformes: Centrarchidae). *Biological Journal of the Linnean Society*. DOI: 10.1093/biolinnean/blaa026
- KANE EA, Cohen HE^{GR}, Hicks WR^{UG}, Mahoney ER^{UG}, and Marshall CD. 2019. Beyond suction-feeding fishes: Identifying new approaches to performance integration during prey capture in aquatic vertebrates. *Integrative and Comparative Biology* 59: 456-472. DOI: 10.1093/icb/icz094
- 9 **KANE EA**, Roeder MM^{UG}, DeRue ML^{UG}, and Ghalambor CK. 2019. Integration between swimming and feeding evolves repeatedly in Trinidadian guppies and aligns with suction-feeding fishes. *Journal of Experimental Biology* 222: jeb190165. DOI: 10.1242/jeb.190165
- 8 **KANE EA**, Broder ED, Warnock A, Butler C, Judish AL, Angeloni LM, and Ghalambor CK. 2018. Small fish, big questions: inquiry kits for teaching evolution. *American Biology Teacher* 80: 124-131. DOI: 10.1525/abt.2018.80.2.124
- 7 **KANE EA** and Higham TE. 2015. Complex systems are more than the sum of their parts: Using integration to understand performance, biomechanics, and diversity. *Integrative and Comparative Biology* 55: 146-165. DOI: 10.1093/icb/icv033
- 6 KANE EA and Higham TE. 2014. Modelled three-dimensional suction accuracy predicts prey capture success in three species of centrarchid fishes. *Journal of the Royal Society Interface* 11: 20140223. DOI: 10.1098/rsif.2014.0223
- Marshall CD, Guzman A, Narazaki T, Sato K, **KANE EA** and Sterba-Boatwright BD. 2012. The ontogeny of bite performance in loggerhead sea turtles (*Caretta caretta*): implications for foraging ecology in neritic and benthic habitats. *Journal of Experimental Biology* 215: 4166-4174. DOI: 10.1242/jeb.074385
- 4 **KANE EA** and Higham TE. 2012. Life in the flow lane: differences in pectoral fin morphology suggest transitions in station-holding demand across species of marine sculpin. **Zoology** 115: 223-232. DOI: 10.1016/j.zool.2012.03.002
- 3 **KANE EA** and Higham TE. 2011. The integration of locomotion and prey capture in cottid fishes: functional disparity despite morphological similarity. *Journal of Experimental Biology* 214: 1092-1099. DOI: 10.1242/jeb.052068
- 2 **KANE EA** and Marshall CD. 2009. Comparative feeding kinematics and performance of odontocetes: belugas, Pacific white-sided dolphins, and long-finned pilot whales. *Journal of Experimental Biology* 212: 3939-3950. DOI: 10.1242/jeb.034686
- KANE EA, Olson P, and Gerrodette T. 2008. The commensal barnacle Xenobalanus globicipitis on cetaceans in the eastern tropical Pacific. *Fishery Bulletin* 106 (4): 395-404.

Other published works

4 Montuelle SJ and **KANE EA**. 2019. Food capture in Vertebrates: a complex integrative performance of the cranial and postcranial systems. In *Feeding in Vertebrates* (ed. V. Bels). Springer, Chapter 4. DOI 978-3-030-13739-7_4

- Farina SC, **KANE EA**, and Hernandez LP. 2019. Multifunctional structures and multistructural functions: Integration in the evolution of biomechanical systems. *Integrative and Comparative Biology* 59 (2): 338-345. (non-peer-reviewed introduction to the symposium papers)
- Broder ED and **KANE EA**. 2017. Teaching evolution using live animals and inquiry-based, self-guided kits. In *Evolution and education in the American South: culture, politics, and resources in and around Alabama* (eds. C. D. Lynne, A. Glaze, L. Reed, W. Evans). Palgrave Macmillan: New York, Chapter 11, p. 191-211.
- I KANE EA, Olson P, and Gerrodette T. 2006. The commensal barnacle Xenobalanus globicipitis Steenstrup, 1851 (Crustacea: Cirripedia) and its relationship to cetaceans of the eastern tropical Pacific. NOAA/NMFS Administrative Report LJ-06-03: 47 pp.

In preparation

PRESENTATIONS

Invited presentations and seminars

- 2021 KANE EA. Louisiana State University Museum of Natural Sciences invited seminar, Baton Rouge, LA.
- 2020 **KANE EA**. University of Hawai'l at Hilo, invited guest lecture for 2 undergraduate and I graduate classes, virtual presentations.
- 2020 **KANE EA**. Kennesaw State University Department of Ecology, Evolution & Organismal Biology invited seminar, Kennesaw, GA.
- 2019 **KANE EA**, Cohen HE^{GR}, and Marshall CD. Beyond suction-feeding fishes: diverse strategies for integrating functional systems during prey capture in vertebrates. Invited symposium, Society for Integrative and Comparative Biology. Tampa, FL.
- 2018 KANE EA. Stanford University, Hopkins marine lab invited seminar, Monterey, CA.
- 2018 **KANE EA**. University of South Florida Department of Integrative Biology Seminar, Tampa, FL.
- 2015 **KANE EA** and Higham TE. Complexity and integration in biomechanics: Using prey capture in fishes to explore a novel approach for understanding organismal performance. Invited symposium, Society for Integrative and Comparative Biology. West Palm Beach, FL.

Contributed oral presentations (as a tenure-track faculty)

2021 **KANE EA**, Cohen HE^{GR}, Perez S^{UG}, Smith K^{UG}, Moody K. On the heritability of integrated biomechanical phenotypes in Trinidadian guppies (*Poecilia reticulata*). Behavior, Ecology, and Evolution of Poeciliid Fishes Virtual Forum.

- Capilitan Z^{UG} and **KANE EA**. Modulation of kinematics and integration of Trinidadian guppies capturing functionally similar prey. Behavior, Ecology, and Evolution of Poeciliid Fishes Virtual Forum.
- 2021 Marshall CA, Zeller KR, **KANE EA**, Vincent J, Angeloni LM, Ghalambor CK. Salinity performance curves for escape responses in guppies shape distributional patterns of closely-related species along a salinity gradient. Society for Integrative and Comparative Biology. Virtual meeting.
- 2020 KANE EA. Is it heritable? Assessing kinematic integration in wild and lab-reared Trinidadian guppies. Evolution. Cleveland, OH [CANCELLED due to COVID-19].
- Cohen HE^{GR} and **KANE EA**. When the Expected Doesn't Happen: A Lack of Local Adaptation in Trinidadian Guppies. Society for Integrative and Comparative Biology. Austin, TX.
- 2020 **KANE EA** and Higham TE. Apparent modulation of integration with prey type in bluegill is driven by individual differences in performance and its integration. Society for Integrative and Comparative Biology. Austin, TX.
- 2018 **KANE EA**. Integrating research and teaching: Insights from designing a new course in biomechanics. Society for Integrative and Comparative Biology regional meeting. Clemson, SC.
- 2018 **KANE EA** and Ghalambor CK. An ecological specialization gradient does not lead to performance specialization in suction-feeding guppies. Society for Integrative and Comparative Biology. San Francisco, CA.
- Broder ED, Angeloni LM, **KANE EA**, and Ghalambor CK. Evolution education in the U.S. benefits from an authentic approach. Animal Behavior Society. Columbia, MO.
- 2016 **KANE EA** and Ghalambor CK. Phenotypic integration of feeding and locomotor performance across divergent locally adapted populations of Trinidadian guppies. Evolution. Austin, TX.

Contributed poster presentations (as a tenure-track faculty)

- 2021 Khoriaty M^{UG}, **KANE EA**. Jaw morphology in *Poecilia reticulata* does not differ in highand low- predation environments. Society for Integrative and Comparative Biology. Virtual meeting.
- 2020 Capilitan ZA^{UG} and **KANE EA**. Modulation of kinematics and integration of Trinidadian guppies capturing functionally similar prey. Society for Freshwater Science Summer of Science virtual conference.
- 2020 KANE EA. On designing and implementing a new course as a new professor. Society for Integrative and Comparative Biology. Austin, TX.
- Cohen HE^{GR} and **KANE EA**. Damaged goods: Do injuries affect swimming performance during prey capture in bluegill? Society for Integrative and Comparative Biology. Tampa, FL.

Allred L^{UG}, **KANE EA**, and Oufiero CE. Comparison of swimming energetics between damaged and healthy Bluegill sunfish (Lepomis macrochirus). Society for Integrative and Comparative Biology. Tampa, FL.

- Phillips HA^{UG} and **KANE EA**. Do Generalists Specialize? Potential for Individual Variation in Trinidadian Guppy Feeding Kinematics. Society for Integrative and Comparative Biology. Tampa, FL.
- 2018 Cohen HE^{GR} and **KANE EA**. The role of local adaptation on biting performance in Trinidadian guppies. Society for Integrative and Comparative Biology. San Francisco, CA.
- Young EB^{UG} and **KANE EA**. Heritability of morphological traits across divergent environments in guppies (Poecilia reticulata). Society for Integrative and Comparative Biology. San Francisco, CA.
- 2017 **KANE EA**, Roeder MM^{UG}, and DeRue MD ^{UG}. Swimming while feeding in fishes: What do guppies tell us about the roles of specialization and local adaptation? Society for Integrative and Comparative Biology, New Orleans, LA.
- 2016 **KANE EA**, Broder ED, Warnock AC, Butler CM, Judish AL, Angeloni LM, and Ghalambor CK. Using self-guided "guppy kits" to teach adaptation and evolution using authentic science. Evolution, Austin, TX.
- 2016 **KANE EA**. The role of integration in survival and adaptation of predators. Gordon Research Conference: New Frontiers in Understanding Predator-Prey Interactions in a Human-Altered World. Ventura, CA.
- 2016 Klee TJ^{UG} and **KANE EA**. Comparing capture success of native and invasive cichlids. Colorado State University Front Range Student Ecology Symposium, Fort Collins, CO. **Won first place in undergraduate posters**.
- 2016 **KANE EA**, Broder ED, Warnock AC, Butler CM, Judish AL, Angeloni LM, and Ghalambor CK. Using self-guided "guppy kits" to teach adaptation and evolution using authentic science. Society for Integrative and Comparative Biology, Portland, OR.

TEACHING

Instructor of record at GSU

Lecture BIOL 1130 **General Biology**, large non-majors course, 2 semesters
Lecture BIOL 3131 **Physiology**, sophomore-level required course, 4 semesters

Lecture BIOL 4532 **Evolution**, upper level elective, 3 semesters

Lecture and Lab BIOL 5241 Comparative Vertebrate Anatomy, upper level elective, 1

semester

Lecture and Lab BIOL 5099/G **Biomechanics**, new upper level elective course, 2

semesters

Grad seminar BIOL 7610 Communicating science to the public, I semester

Instructor of record at ULL

Lecture and Lab BIO 325 **General Physiology**, upper level elective course, 2 semesters

virtual, I semester in person

MENTORED RESEARCH STUDENTS

Graduate student, primary advisor		
2021 – current	, PhD	Olivia Hawkins, TBD
2021 – current	PhD	Richard (RC) Hoover, TBD
2019 – 2020	MS	Anthony Sample, GSU, switched advisors rather than transferring to ULL
2018 - 2018	MS	Rachel Livengood, GSU, left the program
2017 – 2019	MS	Hannah Cohen , GSU, The role of local adaptation on biting performance in guppies.
Graduate students, comm	mittee member	
2020 - current	PhD	Shannon Kuznar, Advisor James Albert, ULL
2020 - current	PhD	Andrew Buderi, Advisor Mark Genung, ULL
2017 – 2021	PhD	Kassandra Ford, Advisor James Albert, ULL
2017 – 2020	MS	Garret Strickland, Advisor Jamie Roberts, GSU
2017 – 2018	MS	Chase Kinsey, Advisor Lance McBrayer, GSU
Undergraduate students in organized programs		
2021 – current	Healthy Coasts R	urtis, University of Pittsburgh; ULL Healthy Streams REU program, Characterizing the ecology and graphics of local <i>Gambusia</i>
2020 – 2020	Blinks/BEACON	r, Bowdoin College; Friday Harbor Laboratory NSF Research Experiences for Undergraduates, Using ontify guppy jaw morphology
2020 — 2020	Carolyn (Callie)	Falciglia, GSU; Incorporation of Freshmen in Research nce (IFREE) program, Feeding biomechanics in sunfish
2019 – current	Sciences NSF Res	ckerd College; GSU Institute for Coastal Plain search Experiences for Undergraduates, Modulation I integration in guppies
2017 – 2020	•	, GSU; McNair Scholars Program, Does cranial ramong locally adapted populations of guppies?
2017 – 2019	-	SU, University Honors Program thesis advisor, Do predator accuracy between divergent locally adapted
2014 – 2016	creation of an int	n, CSU, University Honors Program thesis advisor; The eractive early childhood curriculum for the Denver Next Generation Science Standards in informal
2014 – 2015		wan, CSU, University Honors Program thesis ber; The evolution of toad ears: comparing eared vs.

Undergraduate researchers and technicians

2021 – current	Tanner Blades ; General lab technician, assess ecological traits associated with local <i>Gambusia</i> populations (supported by ULL Live Oak Scholarship)
2020 – current	Rachel Briggs ; Assess ecological traits associated with local <i>Gambusia</i> populations
2019 – 2021	Kristen Smith ; Feeding kinematics in lab born guppies (supported by AAUW research publication grant)
2019 – 2020	Dixie Armstrong ; Feeding biomechanics in sunfish, mentored C Falciglia in IFREE program
2019 – 2020	Nick McKinley ; Toad jumping biomechanics (aligned with Biomechanics course lab)
2019 – 2019	Victoria (Tori) Martin; Installing and using DeepLabCut, a machine learning technique for automated video analysis
2018 – current	William Ray ; Assisted with pond monitoring project, mentored by MS student H Cohen on bluegill fin damage project
2018 – 2021	Sofia Perez ; Feeding kinematics in lab born guppies (supported by AAUW research publication grant)
2018 – 2019	Hailey Phillips; Individual variation in guppy feeding kinematics
2017 – 2020	William Hicks; Generate 3D printable models of guppies and predators, guppy maternity analysis, amphibious prey capture in a mudskipper
2017 – 2019	Ashley Williamson; Guppy maternity analysis
2017 – 2019	Lacy Allred; Metabolic rate and swimming performance of bluegill with healthy and damaged fins
2017 – 2018	Elizabeth Young; Heritability of body shape in guppies
2017 – 2018	Emily Mahoney; Amphibious prey capture in a mudskipper
2015 – 2016	McKenna DeRue; Differences in integration between locally adapted populations of guppies
2015 – 2016	Megan Roeder; Differences in integration between locally adapted populations of guppies
2015 – 2016	Travis Klee; Prey capture in native and invasive cichlids in Trinidad

PROFESSIONAL AND COMMUNITY SERVICE

Ongoing	Reviewer for Royal Society Open Science, Functional Ecology, American Naturalist, Journal of Experimental Biology, Ecology and Evolution, Journal of Morphology, Biology Letters, National Science Foundation, and Louisiana Department of Wildlife and Fisheries
2019 – 2021	Mentor, National Science Foundation Research Experiences for Undergraduates • ULL Healthy Streams, Healthy Coasts REU (2021) • Friday Harbor Laboratory Blinks/BEACON REU (2020)
	 GSU Institute for Coastal Plain Sciences REU (2019)

^{UG} Mentored undergraduate researcher; ^{GR} Mentored graduate student CSU Colorado State University; GSU Georgia Southern University; ULL University of Louisiana at Lafayette

2019 - 2020

College of Science and Mathematics, GSU

- Ambassador for the College Diversity and Inclusion Collaborative
- McNair Scholar program and REU Site faculty mentor, led workshop on preparing oral presentations

2017 – current

Community and teaching-related outreach

- Guest speaker, 2 undergraduate and 1 graduate courses for instructor M Knope, University of Hawaii at Hilo (2020)
- Establish guppy kit program and use at community outreach events (2017 2020)
- Contribute to and review instructional materials, Smithsonian Science Education Center (contact Jean Flanagan) (2018)
- Compose a video in response to a middle school teacher's solicitation to explain why my science is awesome (2017). The video is hosted on Youtube. I also live-tweeted with the class to answer their questions the day they watched my video.
- Hosted a booth at Statesboro First Fridays (2017)

2017 – current

Society for Integrative and Comparative Biology

- Elected secretary for the Division of Comparative Biomechanics (serving 2020-2022)
- Outreach Associate for the journal Integrative Organismal Biology (serving 2018 current), 4 blog posts written, 2 blog posts co-written with W. Ray (undergraduate)
- Judge, best student talks and posters, Division of Comparative Biomechanics (2020)
- Session chair at annual meeting (2020)
- Mentor, 'Beverages and Brains' networking event sponsored by Division of Ecology and Evolution (2021)
- Ask-an-expert booth, Practical skills & support for new & soonto-be faculty, Division of Phylogenetic and Comparative Biology (2020)
- Co-organize a symposium at the annual Society for Integrative and Comparative Biology meeting in Tampa, FL (2019): Multifunctional structures and multistructural functions: Functional coupling and integration in the evolution of biomechanical systems.

2017 - current

Society for the Study of Evolution

- New Faculty Profile highlighted (2018)
- Judge for Hamilton Awards for best student presentations (2017)
- Diversity in Science lunch participant (2017)
- Volunteered to be matched with students to discuss career paths over lunch (2017, 2020)

2017 - 2020

GSU Institute for Interdisciplinary STEM education (i²STEMe)

^{UG} Mentored undergraduate researcher; ^{GR} Mentored graduate student CSU Colorado State University; GSU Georgia Southern University; ULL University of Louisiana at Lafayette

- Activity leader, Science-to-go event at Dahlonega Science Festival; Dahlonega, GA (2020)
- Teacher professional development workshop on coastal cultural and natural history; Ossabaw Isaland, GA [cancelled due to COVID]
- Activity leader, STEM night at 2 local elementary schools; Statesboro, GA (2020)
- Activity leader, GA Department of Natural Resources CoastFest (2019)
- Activity leader, STEM Field Experience (2018 2019)
- Activity leader, GSU STEMfest (2018 2019)

2017 - 2020

Department of Biology, GSU

- Departmental Committees: Scholarship committee, Public Relations and Marketing, Undergraduate Research Symposium Diversity and Inclusion
- Lead discussion of one of my recently published papers with Tri-Beta (2019)
- Coordinator, GSU Natural History and Collections Club BioBlitz (2018)
- Panelist for Research Night event hosted by undergraduate students from Sigma Xi and Tri-Beta (2018)
- Guest speaker for Honors Biology course and GSU chapter of Tri-Beta (2017 – 2018)
- Host 3 seminar speakers (2017 2019)
- Lead a graduate student workshop on using Twitter (2017)

PROFESSIONAL MEMBERSHIPS

2016 – current	Society for the Study of Evolution
2007 – current	Sigma Xi, The Scientific Research Society
2006 – current	Society for Integrative and Comparative Biology
2018 – 2019	National Association of Biology Teachers
2015 – 2017	Society for Experimental Biology
2005 - 2008	Society for Marine Mammalogy