

KELSI M. RUTLEDGE

PhD Student, @fishandfreckles 
University of California Los Angeles, LA, CA 90095
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EDUCATION

- Sept 2018- Present **Ph.D. in Biology** **University of California Los Angeles**
Advisors: Malcolm Gordon, Don Buth, Jeff Eldredge
Thesis: *Nasal Morphology and Hydrodynamics of Olfaction in Batoid Fishes*
Pertinent Coursework: Fish Biomechanics, Fluid Mechanics
**Summa cum laude*
- 2018 **M.Sc. in Biology*** **University of California Los Angeles**
Advisor: Don Buth
Thesis: *Guitarfish comparative morphology*
**Summa cum laude*
- 2016 **B.S. Marine Biology*** **University of North Carolina Wilmington**
2016 **B.S. Environmental Science** **University of North Carolina Wilmington**
Advisors: Troy Alphin, Martin Posey, Thomas Lankford
Honors Thesis: *Fish Use of Created vs. Natural Oyster Reefs (Crassostrea virginica)*
**Magna cum laude*

PUBLICATIONS

5. **Rutledge, K.M.** 2020. First Evidence for Hybridization in Guitarfishes (Batoidea: Rhinobatidae). Submitted to Biology Letters 4/6/2020.
4. Gordon, M.S., Lauritzen, D.V., Wiktorowicz, A.M., **Rutledge, K.M.** 2020. Aracaniform Swimming: A Swimming Mode used by deep-water Boxfishes (Teleostei: Tetraodontiformes: Aracanidae). *Physiological and Biochemical Zoology Special Issue: Biomechanics*, 93(3): 235-242.
<https://doi.org/10.1086/708163>
3. **Rutledge, K.M.** 2019. A new guitarfish of the Genus *Pseudobatos* (Batoidea: Rhinobatidae) with Key to the Guitarfishes of the Gulf California. *Copeia*, 107 (3): 451-463.
<https://doi.org/10.1643/CI-18-166>
2. **Rutledge, K.M.**, Summers, A. P., Kolmann, M.A. 2019. Killing them softly: ontogeny of jaw mechanics and stiffness in mollusk-feeding freshwater stingrays. *Journal of Morphology*, 280: 796-808.
<https://doi.org/10.1002/jmor.20984>
1. **Rutledge, K. M.**, Alphin, T. & Posey, M. 2018. Fish Utilization of Created vs. Natural Oyster Reefs (*Crassostrea virginica*). *Estuaries and Coasts*, 41 (8): 2426-2432.
<https://doi.org/10.1007/s12237-018-0433-4>

FELLOWSHIPS

2020 Department of Defense National Science and Engineering Fellowship (NDSEG: 3 yrs) ~\$114,000

PRESENTATION AWARDS

- 2020 **1st place:** Graduate Marine Biology Poster Award, Annual Biology Research Symposium, UCLA
 2019 **2nd place:** Best Graduate Student Poster Award, Annual Biology Research Symposium, UCLA
 2018 **1st place:** Best Graduate Student Poster Award, Annual Biology Research Symposium, UCLA
 2017 **3rd place:** Best Graduate Student Poster Award, Annual Biology Research Symposium, UCLA
 2017 **1st place:** AIFRB Best Poster Award, Southern California Academy of Sciences Annual Conference
 2016 Honorable Mention: Poster Award, Student Research and Creativity CSURF Showcase, UNCW

GRANTS

2019	Sigma Xi Grant in Aid of Research	\$1,000
2019	Grant in Aid of Research (GIAR) Society for Integrative and Comparative Biology	\$1,000
2019	University of California Los Angeles Travel Grant	\$2,300
2019	University of California Los Angeles Research Grant	\$1,000
2018	Friday Harbor Laboratories Wainwright Fellowship	\$2,700
2018	University of California Los Angeles Research Grant	\$2,000
2018	Society for Integrative and Comparative Biology Housing and Travel Grant	\$600
2017	University of California Los Angeles Fellowship	\$750
2017	American Society of Ichthyologists and Herpetologists Travel Grant	\$600

RESEARCH AWARDS

2020	Lasiewski Award in recognition of “Outstanding Research in Organismic Biology”	
2019	UCLA Faculty Women’s Club Scholarship and Departmental Nominee	\$3,000

PRESENTATIONS

+INVITED SPEAKER **AWARD GIVEN

2020	Society for Comparative and Integrative Biology	Austin, TX
2019	International Congress of Vertebrate Morphology	Prague, Czech Republic
2019	UCLA Annual Biology Research Symposium**	Los Angeles, CA
2019	Southern California Academy of Sciences Annual Conference	Los Angeles, CA
2019	SICB DVM Dwight Davis Award Competition	Tampa, FL
2018	FHL Fish Biomechanics Research Project	Friday Harbor Labs, San Juan Island
2018	UCLA Annual Biology Research Symposium**	UCLA
2017	Southern California District Board AIFRB Annual Meeting+	Los Angeles, CA
2017	Joint Meeting of Ichthyologists and Herpetologists	Austin, TX
2017	UCLA Annual Biology Research Symposium**	UCLA
2017	Southern California Academy of Sciences Annual Conference**	Los Angeles, CA
2016	Student Research and Creativity CSURF Showcase**	UNC-Wilmington

RESEARCH EXPERIENCE

2018-Present	Ichthyology Research Assistant	UCLA Ichthyology Museum Collection, CA
	Description: Maintaining and managing fish museum collection, research with fish specimens, assisting with loans	

- July 2018- **Fish Biomechanics Research Course** Friday Harbor Labs, San Juan Island, WA
 August 2018 Description: 9 unit research course designed to teach the fundamentals of fish biomechanics while students research an independent project. My project resulted in publication #2 on this CV. Mentored by: Matt Kolmann, Adam Summers, Alice Gibb
- June 2013- **Research Technician**, Benthic Ecology Lab Center for Marine Science, Wilmington, NC
 2016 Description: Work on a variety of lab projects including, but not limited to, impacts of grain size and porosity for beach renourishment, benthic infaunal assessment and analysis, oyster reef restoration and artificial reef building (USACE), fish communities around oyster reefs, oyster population health assessment, NOAA Poplar Island Restored Marsh Analysis; Cape Fear River Environmental Monitoring
- 2015-2016 **Honors Thesis Research Project** Center for Marine Science, Wilmington, NC
 Description: Undergraduate research thesis comparing fish utilization of artificial oyster reefs to natural oyster reefs; deploy breder traps and seine net to catch resident and transient nekton; resulted in publication #1. Mentored by: Troy Alphin, Martin Posey
- 2015-2016 **St. James Coastal Erosion Intern** St. James Plantation, Southport, NC
 Description: Build and manage a bagged oyster reef as a “living shoreline” to prevent wetland erosion on the intracoastal waterway; monthly sampling of bagged reef to determine nekton utilization and infaunal assessment; deploy and retrieve cultch bags for monthly analysis, measuring growth of *Spartina*, seine and sweep net along reef to determine community
- 2014-2016 **Ichthyology Lab Intern** Center of Marine Science, Wilmington, NC
 Description: Sediment sorting, identifying invertebrates, fish identification, gill net, seine net, assist with the process of fish preservation for university museum

TEACHING EXPERIENCE

Guest Lecture, UCLA

1 hr 15 minute lecture on sensory biology and physiology of fishes

Teaching Associate, UCLA

Spring 2020 Introduction to Marine Science Lab
 Winter 2019 Animal Physiology Lab
 Winter 2018 Vertebrate Morphology Lab
 Spring 2018 Systematics

Teaching Assistant, UCLA

Fall 2017 Introduction to Marine Science Lab
 Spring 2017 Introduction to the Oceans
 Winter 2017 Ecology, Evolution and Biodiversity
 Summer 2017 Ecology, Evolution and Biodiversity
 Fall 2016 Introduction to Marine Science

Undergraduate Teaching Assistant, UNC-Wilmington

Spring 2016 Ichthyology Lab
 Fall/Spring 2016 Ichthyology Lab

OUTREACH AND MENTORSHIP

Students mentored: Melissa Vasquez (3 yrs), Raneesh Ramarapu (1 yr)

- 2018- Present **Building Engineers and Mentors (BEAM)** Los Angeles, CA
 Description: Weekly visits to underrepresented elementary student's classroom to teach fun science and engineering based activities
- 2017-Present **Minds Matter Mentor** Los Angeles, CA
 Description: Mentor a female high school minority student, teaching lab protocol and introduction to coding
- 2019-Present **Outreach Associate for the Journal of Integrative and Organismal Biology (IOB)**
 Description: Writing inclusive blog posts to summarize recently published journal articles
<https://iobopen.wordpress.com/author/kelsirutledge/>
- November 4th 2018 **Exploring Your Universe with BNC; EEB UCLA Booth** Los Angeles, CA
 Description: Largest UCLA Science Festival open to the public, catered towards elementary and middle school kids
- April 9th 2018 **iDigBio** UCLA representative Los Angeles, CA
 Description: NSF funded Broadening Diversity workshop with the goal of introducing undergraduate students, especially those in underrepresented populations, to museum and biodiversity science careers
- 2014-2016 **Coastal Erosion Outreach Intern** Wilmington, NC
 Description: Inform the public and local benefactors of coastal erosion issues and marsh ecosystem services; lead citizen scientists on oyster reef building event
- 2013-2014 **Aquarium Education Volunteer** Fort Fisher Aquarium, Fort Fisher, NC
 Description: Supervise select exhibits and basic marine life care; teach guests about marine life throughout the aquarium

SKILLS

6 years working in a formal scientific lab setting

Programming Languages: R Studio, Matlab

Certifications: CPR/First Aid adult and child certified, Padi Open Water Dive Certified

Software: 3D Slicer, Fiji, Adobe Illustrator, Microsoft products

Museum and Collections Experience: Maintaining UCLA research and teaching ichthyology collection, collaboration with LACM, Scripps, Bell Museum, Harvard Museum

Technologies: CT and uCT scanning, water tunnel/flume experiments, 3D printing, experience with: Arduino, fluorometer, sediment grabber, particle sizer

Field Skills: Fish sampling techniques: seining/gill netting/trawling, familiar with dissecting and identifying coastal fishes, benthic assessment and live history (i.e. spat racks, quadrats), oyster reef restoration: metrics and condition indices, building and maintaining created oyster reefs, identification of oyster reef and surf zone associated invertebrate fauna, water quality monitoring TSS and chl-a, comfortable on/driving a boat

MEDIA ATTENTION

Forbes: Crushing power of stingray jaws through development

<https://www.forbes.com/sites/melissacristinamarquez/2019/06/02/stingrays-eat-food-that-is-harder-than-their-own-jaws/#5cb6b9f2340c>

Forbes: New species of guitarfish

<https://www.forbes.com/sites/melissacristinamarquez/2019/09/09/say-hello-to-a-new-relative-of-sharks/#1859d795269c>

Spectrum 1 News TV interview: New species hidden in museum

<https://spectrumnews1.com/ca/la-west/news/2019/09/19/graduate-student-discovers-species-lurking-inside-a-museum>

Smithsonian Magazine: Announcement of new species

<https://www.smithsonianmag.com/science-nature/scientist-lampoons-birth-announcement-discovery-new-spadenose-ray-180973067/>

American Scientist: Announcement of new species

<https://www.americanscientist.org/blog/macroscope/welcome-to-the-world-pseudobatos-buthi>

REFERENCES

Malcolm Gordon, UCLA

PI and Chair of Doctoral Committee

Donald Buth, UCLA

Masters degree PI and Cochair of Doctoral Committee

Adam Summers, Friday Harbor Labs

Mentor and Coauthor