

Dr. Amberle McKee

Biology PhD with >9 years of experience writing code, leading research projects, and communicating science in verbal and written formats.

Email: amberle.mckee@gmail.com

Website: amberlemckee.weebly.com

GitHub: amberle50

EDUCATION

- 2020 PhD, Biology, McHenry Lab, University of California, Irvine (UCI)
Thesis Title: Sensing as it relates to behavior in fishes
NSF GRFP Fellow
Expertise in biomechanics, sensory systems, MATLAB, and video analysis
- 2014 B.S, Biology, California State University, Long Beach (CSULB)
Robert D. Rhodes Award for the Outstanding

RELEVANT WORK AND VOLUNTEER EXPERIENCE

- 2020 to present Postdoctoral Researcher, Dorgan Lab, Dauphin Island Sea Lab, AL
Researched the biomechanics of worms burrowing through sediments. Created an experimental setup to measure pressure fluctuations using piezoelectric pressure sensors and custom circuitry. Developed custom image analysis programs in MATLAB.
- 2014 to 2020 Graduate Student Researcher, McHenry Lab, UC Irvine, Irvine, CA
Researched how freshwater fish use sensory systems in locomotion. Created automated behavioral analysis rig. Designed custom MATLAB programs to synchronously control motors and high-speed cameras. Designed multiple chemical ablation protocols for adult freshwater fish. Provided STEM outreach to local communities through lab tours and creating online tutorials.
- 2014 to 2020 Teaching Assistant, UC Irvine, Irvine, CA
Taught undergraduate human physiology lab and molecular cell biology discussion courses. Assisted in the instruction for insect physiology and sustainable landscaping courses.
- 2009 to 2014 Volunteer, Marine Lab, California State University, Long Beach, Long Beach, CA
Provided STEM outreach to local communities, maintained aquaria, set up course materials for lab classes, and obtained local species for aquaria.
- 2011 to 2012 Volunteer Deckhand and Educator, American Pride, Children's Maritime Fund, Long Beach, CA
Provided STEM outreach to local school children. Ran and maintained a working tallship sailing vessel.

RELEVANT SKILLS

Programming languages: MATLAB - 8 years (data analysis, image analysis, controlling motors and cameras, sensor data collection), R - 2 years (statistics, ecological modeling), LaTeX - 3 years (composed publications and dissertation), Arduino - 1 year (sensor data collection, controlling motors), Python - <1 year (data analysis)

Engineering Skills: basic electronics; Arduino; NI DAQ; pressure sensors; linear motors; building custom aquariums and experimental setups

Equipment Skills: high speed cameras, flow cytometer; laser cutter; extrusion style 3D printer, CNC, basic shop equipment

Biostatistical and computer programs: AutoDesk Inventor, Photron Viewer, Google Sketchup, Minitab, 123D Design

Mentoring: (9 years) mentoring students through various mentorship programs, (2 years) experience intensively mentoring two research assistants

Professional presentations: 12 conference presentations, (3 award-winning and 1 runner-up), 2 invited seminars, 3 invited guest lectures

Human languages: English (Native), Spanish (Moderate), French (Moderate)

PROFESSIONAL AFFILIATION: Society for Integrative and Comparative Biology (SICB)

GRANTS

1. **National Science Foundation Graduate Research Fellowship Program** 2014: \$102,000 in stipends over three years plus tuition and fees. Fellowship awarded to outstanding, new graduate students to fund their research in graduate school. Includes a stipend and cost of education allowance.

PUBLICITY

1. My 2020 looming threat paper was featured in a blog post in Integrative Organismal Biology entitled, To Not Get Caught by a Predator, by Noah Bressman. (<https://iobopen.wordpress.com/2020/11/02/to-not-get-caught-by-a-predator/>)

PEER REVIEWED PUBLICATIONS

5. **McKee, A., Soto, A., Chen, P. and McHenry, M. J. (2020).** The sensory basis of schooling by intermittent swimming in the rummy-nose tetra (*Hemigrammus rhodostomus*). *Proceedings of the Royal Society B*. 287: 20200568.20200568
4. **McKee, A., and McHenry, M. J. (2020).** Predator evasion in response to visual stimuli in zebrafish (*Danio rerio*). *Integrative Organismal Biology*. 2(1):obaa023.
3. **McKee, A., MacDonald, I. Farina, S., and Summers, A. 2015.** Undulation frequency affects burial performance in living and model flatfishes. *Zoology*. 119(2):75-80
2. **McKee, A. A., Newton, S. M., Carter, A. J. R. 2014.** Influence of inbreeding on female mate choice in two species of *Drosophila*. *Journal of Insect Behavior*. 27:613-625
1. **McKee, A., Voltzow, J., and Pernet, B. 2013.** Substrate attributes determine gait in a terrestrial gastropod. *Biological Bulletin*. 224:53-61