

## **Katherine M. Graham, M.Sc.**

New England Aquarium  
Central Wharf, Boston, Massachusetts 20110  
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### **Professional Experience:**

- 2015-Present **Assistant Scientist**  
Anderson Cabot Center for Ocean Life, New England Aquarium  
Boston, Massachusetts
- 2014-2015 **Graduate Research Assistant**  
Mississippi State University Amphibian Research Lab, MS State University  
Starkville, Mississippi
- 2012-2014 **Endocrine Technician**  
Disney's Animal Kingdom, Walt Disney World  
Lake Buena Vista, Florida
- 2011-2012 **Reproductive Biology Intern**  
Disney's Animal Kingdom, Walt Disney World  
Lake Buena Vista, Florida
- 2010-2010 **Behavioral Biology Summer Fellow**  
San Diego Zoo Institute for Conservation Research  
San Diego, California
- 2008-2011 **Junior Research Associate**  
Oregon Zoo (in conjunction with the University of Portland)  
Portland, Oregon

### **Education:**

- 2015 **Master of Science (Animal Physiology)**  
Mississippi State University  
Starkville, Mississippi  
Thesis: *Conserving the Mississippi gopher frog (*Lithobates sevosa*) through the use of assisted reproductive technologies*
- 2011 **Bachelor of Science (Biology)**  
University of Portland  
Portland, Oregon

### **Professional Activities & Committees:**

- New England Aquarium Institutional Animal Care and Use Committee (July 2017-present)
- New England Aquarium Exhibit & Master Planning Committee (Feb 2017-present)
- International Society of Wildlife Endocrinology Communications Subcommittee (Mar 2017-present)
- New England Aquarium SeaStars Community Outreach Program (Oct 2015-present)
- Resident Assistant, Mehling Hall, University of Portland (Aug 2009-May 2011)
- Chemistry Teaching Assistant, University of Portland (Aug 2009-May 2011)

### **Professional Affiliations:**

- 2017-present Society for Marine Mammalogy  
2015-present Phi Kappa Phi Honors Society  
2012-present International Society of Wildlife Endocrinology  
2015-2016 Gamma Sigma Delta Agriculture Honor Society

### Certifications & Technical Skills:

- Extensive experience performing commercial and in-house enzyme immunoassay and radioimmunoassay techniques.
- Fecal, serum, and baleen hormone extraction techniques.
- Use and care of common immunoassay equipment, including: microplate readers, scintillation counters, gamma counters, freeze dryers, and centrifuges.
- Experience with immunoassay plate loader robotics (Beckman-Coulter Biomek 3000).
- Certification to handle radioactive materials.
- Federal and state (MA) licenses for schedule-III (non-narcotic) controlled substances: testosterone.
- Amphibian handling and husbandry.
- Amphibian gamete collection (oocytes and sperm), sperm analysis (motility and SYBR 14 viability staining), and artificial fertilization techniques.
- Ultrasound analysis of follicular development in frogs (Sonosite Titan and MicroMaxx systems).
- Experience with SoftMaxPro and Prism (assay curve-fitting software), SigmaPlot graphical software, SAS and SPSS (statistical software), and Microsoft Suite.

### Awards and Honors:

2017	International Society for Wildlife Endocrinology Conference Best Poster Award
2015	Gamma Sigma Delta Honor Society Graduate Award
2015	Mississippi State University Graduate Research Symposium: Oral presentation (second place) Life and Biomedical Sciences category
2011	Mehling Hall Student Leadership Award
2009-2011	Geraldine Marie Virnig Memorial Scholarship (academic scholarship)
2009	Murdock Charitable Trust Summer Scholar Award (research scholarship)
2007-2011	University of Portland President's Scholarship (academic scholarship)

### Publications:

#### *Peer Reviewed Papers:*

- Graham, K.,** Langhorne, C., Vance, C., Willard, S., Kouba, A. (submitted to Conservation Physiology). Ultrasound imaging improves hormone therapy strategies for induction of ovulation and in vitro fertilization in the endangered dusky gopher frog (*Lithobates sevosa*).
- Graham, K.,** Kouba, A., Langhorne, C., Marcec, R., Willard, S. (2016). Biological sex identification in the endangered dusky gopher frog (*Lithobates sevosa*): a comparison of body size measurements, secondary sex characteristics, ultrasound imaging, and urinary hormone analysis methods. *Reproductive Biology and Endocrinology*. 14:41; doi: 10.1186/s12958-016-0174-9.
- Graham, K.,** Wheaton, C.J., Mylniczenko, N., Burns, C., Bettinger, T. (2015). Examining factors that may influence accurate measurement of testosterone in sea turtles. *Journal of Veterinary Diagnostic Investigation*. 28(1):12-19.

#### *Abstracts:*

- Graham, K.,** Wheaton, C.J., Mylniczenko, N., Burns, C., Bettinger, T. Effects of sample collection, processing, and storage treatment for validation of an enzyme immunoassay to monitor testosterone in circulation in male sea turtles (*Chelonia mydas* and *Caretta caretta*). Fourth annual conference of the International Society of Wildlife Endocrinology. October 14-16, 2013. Lincoln Park Zoo, Chicago, IL, USA.
- Graham, K.,** Fontenot, D., Plasse, C., Savage, A., Bettinger, T., Wheaton, C.J. Preliminary investigation of the use of non-invasive measurements of faecal immuno-reactive corticosterone in rufous fantails (*Rhipidura rufifrons*): A potential diagnostic tool for choice of best candidates for translocation. Third annual conference of the International Society of Wildlife Endocrinology. September 23-26, 2012. University of Veterinary Medicine, Vienna, Austria.

## **Presentations:**

### *Oral:*

- “Use of Exogenous Hormone Treatments to Induce Ovulation in the Critically Endangered Mississippi Gopher Frog (*Lithobates sevosa*)”. Joint Meeting of Ichthyologists and Herpetologists. July 15-19, 2015. Reno, NV, USA.
- “Conserving amphibians through assisted reproductive technologies: use of exogenous hormone treatments to induce ovulation in the critically endangered Mississippi gopher frog (*Lithobates sevosa*)”. Graduate Student Research Symposium. March 21, 2015. Mississippi State University, Mississippi State, MS, USA.
- “Behavior and Development of an Asian Elephant (*Elephas maximus*) Calf: A Case Study”. Murdock Undergraduate Research Conference. October 30-31, 2009. Gonzaga University, Spokane, WA, USA.

### *Posters:*

- “Non-invasive fecal reproductive hormone assays for the northern fur seal (*Callorhinus ursinus*)”. 22<sup>nd</sup> Biennial conference on the Biology of Marine Mammals. October 23-27, 2017. Halifax, Nova Scotia, Canada.
- “Validation of non-invasive fecal reproductive hormone assays for the northern fur seal (*Callorhinus ursinus*)”. Sixth International Society of Wildlife Endocrinology conference. August 14-16, 2017. Disney’s Animal Kingdom, Orlando, FL, USA.
- “Effects of sample collection, processing, and storage treatment for validation of an enzyme immunoassay to monitor testosterone in circulation in male sea turtles (*Chelonia mydas* and *Caretta caretta*)”. Fourth annual conference of the International Society of Wildlife Endocrinology. October 14-16, 2013. Lincoln Park Zoo, Chicago, IL, USA.
- “Preliminary investigation of the use of non-invasive measurements of faecal immuno-reactive corticosterone in rufous fantails (*Rhipidura rufifrons*): A potential diagnostic tool for choice of best candidates for translocation”. Third annual conference of the International Society of Wildlife Endocrinology. September 23-26, 2012. University of Veterinary Medicine, Vienna, Austria.