Recruiting 3 PhD students at: Woods Hole Oceanographic Institution, Texas Tech University, and University of Nevada Las Vegas
in Marine Mammal Physiology, Behavior, and Genetics

We are seeking PhD candidates to work on an NSF-funded project using Weddell seals in McMurdo Sound, Antarctica as a model to examine why some individuals within populations produce more offspring than others. The successful candidates will be part of a highly-collaborative team that aims to distinguish which plastic (physiologic and behavioral) and fixed (genetic) traits make some '*robust'* female Weddell seals particularly successful at producing pups year-after-year, while other '*frail'* females produce far fewer pups throughout their lifetime than the population's average. The positions ideally would begin Fall 2020, but it would be possible to start later. Student research projects will reflect program needs in the following core fields, but will also be tailored to student interest.

Physiology: One student will focus on the physiological factors that impact energy dynamics, aerobic capacity, and reproductive success so experience with biochemistry/molecular labwork is a plus. Example projects include studying female-to-pup energy transfer during lactation in '*robust'* vs '*frail'* female Weddell seals, links between female physiologic dive capacities and her pup's, and differences in female reproductive phenology (ovulation timing, pregnancy rates, pregnancy loss) and hormones between '*robust'* and '*frail'* seals. This student would be housed at Woods Hole Oceanographic Institution's Biology Department, in a joint-program with MIT, advised by Dr. Michelle Shero (www.shero-lab.com). Details on the WHOI/MIT joint PhD program and admission criteria can be found at http://mit.whoi.edu/program-description, applications due Dec 15.

Behavior & Bioenergetics: One student will focus on year-round foraging behavior and the impact this has on activity budgets and bioenergetics, so any prior modeling or programming experience would be viewed favorably. Example projects include studying female-pup pair dive behavior during lactation, differences in summer/winter dive behavior between '*robust'* and '*frail'* seals, impacts of physiology on post-weaned pup dive behavior, and developing a bioenergetics model to identify crucial deviations in how '*robust'* vs '*frail'* seals navigate critical life history events. This student would be housed at Texas Tech University's Department of Biological Sciences with Dr. Jennifer Burns (http://burnslab.wix.com/burnslab). Prospective student information can be found at https://www.depts.ttu.edu/biology/academics/graduate/prospective-students/, applications due Jan 15.

Genomics: One student will focus on the inherent genomic differences between '*robust'* and '*frail'* Weddell seals, so experience with bioinformatics analysis would be an asset. Example projects include identifying genetic variants in genes responsible for energy allocation, aerobic scope, and fertility between Weddell seal cohorts through whole-genome sequencing. This student would also perform experiments to demonstrate that genetic variants ultimately have functional effects on animal phenotype (i.e., transcription, translation), and there is additional opportunity for cell culture experiments. This student would be advised by Dr. Allyson Hindle (https://www.researchgate.net/profile/Allyson_Hindle) at the University of Nevada Las Vegas, and would also work closely with Dr. Brandon Briggs (University of Alaska Anchorage; https://www.uaa.alaska.edu/academics/college-of-arts-and-sciences/departments/biological-sciences/faculty/briggs.cshtml). Interested students should see: https://www.unlv.edu/degree/phd-biological-sciences; application deadline is Jan 15.

Preference will be given to highly motivated candidates with a Bachelor of Science or Master of Science degree in biology or closely related field, who have a strong academic record, and that enjoy working both in the laboratory and field. Candidates must be physically fit, able to work long hours outdoors in the cold, able to pass medical and dental screening criteria for long deployments in remote field locations and be the holder of a valid passport (U.S. or other). Prior laboratory and/or field research in ecology of mammals is a plus. The successful applicants will spend 2-4 months in the field at McMurdo Station, Antarctica, each year. The grant/institutions will provide student stipend and tuition, and students will be expected to occasionally work as a teaching assistant (varies slightly by institution). The positions are open until filled.

Interested applicants should contact Dr. Michelle Shero at <mshero@whoi.edu> and provide a C.V., unofficial transcript, and a cover letter that indicates which project aspect(s) is/are of greatest interest to the applicant. For further information, please also contact Michelle Shero.

Dr. Michelle R. Shero
Woods Hole Oceanographic Institution
266 Woods Hole Rd MS#50
Woods Hole, MA 02543
508-289-3961

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