

**COMMITTEE ON FACULTY RESEARCH LECTURE**  
**Annual Report 2018-2019**

To: Academic Senate, Santa Cruz Division

The Committee on the Faculty Research Lecture (CFRL) enthusiastically nominates Terrie Williams, Professor of Ecology and Evolutionary Biology, as the Faculty Research Lecturer for the 2019-2020 academic year.

Professor Williams' research is at the forefront of understanding the physiology of exercise and energetics in large mammals. Her interests both in the laboratory and in the field cover a broad range of issues, with recent projects focused on the comparative physiology of animals including African lions, wolves, polar bears and marine mammals. As examples, she has identified energetic vulnerabilities in these animals, studied resource limitations in apex predators, explored the effects of noise on diving seals and dolphins, and uncovered how changes in ice have impacted polar marine mammals such as narwhals.

Professor Williams was selected by the CFRL because her scientific work is compelling and has broad impact in her field. In addition, Professor Williams' findings have profound application to conservation, as she is examining the physiological tipping points for large animals in the wild. Specifically, she is determining the physiological costs, risks and safety factors associated with extreme physical performance of mammals when challenged to adapt to changes in their environment brought about by climate change. To accomplish this, her lab has been developing and employing innovative sensor technology to monitor the movements, behavior, and energetics of wild animals. An exciting and important emerging theme in this area has been understanding how behavioral reactions to anthropogenic impacts – particularly acute impacts such as loud sounds – may have long-term implications for energetic demand and the overall well-being of large mammals.

Professor Williams has published prolifically in high impact journals, with recent papers in top-rated physiology journals and broad-interest journals such as *Science*. She has written several award-winning books, including *The Hunter's Breath*, published in 2004 detailing her research of the Weddell seal in Antarctica, and *The Odyssey of KP2: An Orphan Seal, a Marine Biologist, and the Fight to Save a Species*, published in 2012 about her conservation work with the Hawaiian monk seal. Additionally, she is currently developing a new general interest book about narwhals. Her research program has achieved many awards and grants from the Office of Naval Research and the National Science Foundation.

Professor Williams' research accomplishments have been well recognized with awards, and she is in high demand as a lecturer. She received the prestigious August Krogh Award in Physiology given by the Comparative and Evolutionary Biology section of the American Physiological Society. This is one of the most prestigious awards presented by this society. Dr. Williams was also invited to give the Bidder Plenary Lecture by the Society of Experimental Biology, London UK. The Bidder Plenary lecture is given by a scientist prominent in the field of animal biology and is nominated by the Animal Biology section of the society. Dr. Williams has received many invitations for guest lectures, seminars and plenary talks across a broad range of institutions and

meetings. She was also a recent invited plenary speaker at the Society of Integrative and Comparative Biology and at the International Mammalogy Congress in Australia.

Dr. Williams has been extremely active in informal education and public outreach. Her lab continues to support grade school enrichment activities and social media outreach that engage far beyond her research activities. Specifically, Dr. Williams uses the broad appeal of marine mammals, and marine mammal research more generally, to engage with the public. Her research group gives over 100 tours annually where campus visitors tour the marine mammal facility and learn about the research done by UCSC researchers.

In summary, Dr. Terrie Williams is an extraordinary researcher and teacher who successfully engages the broader public. Her accomplishments bring luster to our university. She is highly deserving of the Faculty Research Lecture, and we are confident that she will present an outstanding lecture.

Respectfully submitted;  
COMMITTEE ON FACULTY RESEARCH LECTURE  
Sean Keilen  
Daniel Kim  
Barbara Rogoff  
Susan Strome  
Seth Rubin, Chair