

PIER **(Program for Interdisciplinary Environmental Research)** **Graduate Specialization**

Rationale: In the face of a complexity of threats to our oceans and earth – ocean and land pollution, ocean acidification, dead zones, deep sea mining and the policy and human behavioral aspects – the questions on what to conserve, what is natural, how much to protect and how to protect biodiversity and potential solution require serious consideration. Definitive answers are likely to come not from a single line of investigation, but from a wide variety of approaches in the biological, social and biomedical sciences, as well as aspects of the arts and humanities, with important technological input from the physical, chemical, and computing sciences.

Goals: PIER provides graduate students from existing UCSD Ph.D. programs with the opportunity to specialize in research and training on the biological, physical, economic and social aspects of environmental research, conservation, and sustainability. The aim is to provide a broad and interdisciplinary approach – spanning the social and natural sciences– and focusing on solutions to global environmental issues. Through PIER, graduate students interact and communicate with peers in radically different disciplines throughout the duration of their PhD projects. Such communication across disciplines from the outset is key to fostering a capacity for interdisciplinary “language” skills and conceptual flexibility.

Program: The highlight of PIER training is *SIO295S/SIO295LS (16 units Summer only) Global Change, Marine Ecosystems and Society*. The course provides students with an introduction to several fields of study to establish a fundamental skill set and common language. The course demonstrates the linkages among various disciplines and the need for interdisciplinary approaches to address environmental challenges. Upon completion, all students will have a basic understanding of marine biodiversity, conservation, and global change through the lenses of biological science, economics, business, governance, and ethics, and develop key communication skills. CMBC Master of Advanced Studies (MAS-MBC) students also participate in this course, giving MAS and Ph.D. students the opportunity to collaborate on interdisciplinary projects together.

Other required courses include:

- Interdisciplinary Forum for Environmental Research (IFER) 2 units x 3
- Choice of two – 4-unit electives in a discipline other than the home department

This is a total of 30 additional units over the course of the Ph.D. program in addition to the requirements of the home discipline.

Background: The scientific research and training program was developed and coordinated by the Center for Marine Biodiversity and Conservation (CMBC) at Scripps Institution of Oceanography UC San Diego under the NSF funded IGERT (Integrated Graduate Education and Research Training NSF Grant 0333444 & 0903551. With encouragement from graduate students across campus, selected members of CMBC’s IGERT faculty, and others, the PIER Specialization was created and approved as a specialization in 11 UC San Diego departments.