## Education

### Master of Environmental Science and Management (2014)

Bren School of Environmental Science & Management - University of California, Santa Barbara

* + *Honors:* UCSB University Award of Distinction; Bren School Academic Achievement Award
  + *Content Specializations:* Energy & Climate; Coastal Marine Resources Management
  + *Focus:* Strategic Environmental Communications & Media

### Single Subject Teaching Credential in Science, Physics (2004)

Graduate School of Education - San Francisco State University

### Master of Science in Mechanical Engineering Design (1994)

Department of Mechanical Engineering, Design Division - Stanford University

### Bachelor of Science in Mechanical Engineering (1993)

Department of Mechanical Engineering - Stanford University

## Experience

### Research Assistant, Ocean Health Index (January 2015 – present) NCEAS - Santa Barbara, CA

* Develop code to update and improve goal models for the annual global Ocean Health Index (OHI), assessing the ways in which a healthy ocean provides a range of sustainable benefits to people now and in the future. Synthesize global spatial and time-series datasets, including species distributions, extinction risk, marine protected areas, and economic sustainability of tourism.
* Coordinate code development and analysis for OHI British Columbia. Discover and manage data, develop goal models, and communicate analysis to adapt general OHI goals to the unique social and environmental context of British Columbia, involving stakeholder groups with diverse cultural, economic, and environmental value systems.
* Promote reproducible methods and open science tools within OHI, including using R/R Studio and GitHub to develop, communicate, and make freely available all analyses and results.
* As lead author, submitted manuscript “Aligning marine species range data to better serve science and conservation” to PLoS ONE (in review). Manuscript quantitatively compares IUCN and AquaMaps species distribution maps and identifies methods to improve confidence in these two important marine species range databases.

### AAAS Mass Media Science Fellowship (June 2014 - August 2014) *The Oregonian* - Portland, OR

* Worked with Oregonian editors and reporters on science and environmental coverage and multimedia content. Published investigations include forage fish management by Pacific Fishery Management Council, salmon management within the Columbia River basin, and wolf conservation under the Oregon Endangered Species Act.

**Masters Thesis Group Project (April 2013 - June 2014) Bren School - Santa Barbara, CA** “Offshore wind energy in the context of multiple ocean uses on the Bermuda platform” Client: Department of Environmental Protection, Bermuda

* Coordinated a cross-functional team to research and develop a novel approach to marine spatial planning to inform offshore wind energy development on the Bermuda Platform. Developed technical approach including single-sector and multi-sector tradeoff analyses for work plan and final document.
* Programmed MATLAB scripts and functions to model wind energy resources, perform spatial tradeoff analyses, and optimize wind farm scenarios based on GIS data and stakeholder preferences.
* Developed and delivered thesis presentations to thesis defense panel, client representatives, and various public audiences.

### Summer Program Consultant (June 2013 - August 2013) The School for Examining Essential Questions of Sustainability (SEEQS) Charter School - Honolulu, HI

* Worked with founder of SEEQS to develop sustainability rubrics, learner profile, and school culture for a new grades 6-12 charter school with focus on project-based learning and environmental sustainability. Charter philosophy based on the Envision Education and p4c Hawai’i (Philosophy for Children) models.

### Science Teacher (August 2004 - June 2012) Carlmont High School - Belmont, CA

* Taught AP Physics-B, honors physics, college prep physics, integrated science, and Engineering & Green Technology in a socioeconomically diverse 2200-student public high school.
* Designed project-based Engineering & Green Technology course, in which students practice fundamental skills in engineering, sustainability, and project management through engineering challenges including LEED green building design, energy audits, solar tracking robots, and “appropriate technology” design.
* Acquired $20,000 in grants for course supplies, including probeware, lab equipment, and robotics kits.

## Science Communications Honors

### Santa Barbara International Film Festival (January 2014) Santa Barbara, CA

* Premiered “Where the Wonder Went,” a short documentary on science education, at the prestigious 11-day film festival. The film had previously earned the “Audience Choice” Award at the 2013 Santa Barbara Digital Film Festival. Produced the film as part of UC Santa Barbara’s GreenScreen Environmental Media program.

### Education Liaison (November 2009 - December 2009) Amundsen-Scott South Pole Station, Antarctica

* Communicated with students and teachers about the IceCube Neutrino Observatory, using a variety of digital media. Produced multimedia journals, lesson plans, and curriculum for PolarTREC website. Conducted live webinar from South Pole Station with my own students, as well as students and teachers across the country.

## Science Education Leadership and Honors

### Knowles Science Teaching Foundation (2004 - present) - Moorestown, NJ

* Engineering Task Force Leadership Team Coordinator (April 2013 – present): Coordinate team leaders in creating resources and professional development, in order to increase teachers’ capacity to incorporate NGSS engineering practices into their curricula.
* KSTF journal Editorial Committee (2013 – present): Help develop standards and submission requirements for publishing teacher-generated knowledge of, in, and for classroom practice. Review and edit article submissions from KSTF Fellows and contribute editorial content to journal.
* KSTF Teaching Fellowship (2004 –2009): Collaborated with other Fellows on science pedagogy such as formative assessment and project-based learning. Continue to participate as a Senior Fellow.

### Exploratorium Teacher Institute (2004 - 2013) - San Francisco, CA

* STEM Conference Workshop Leader (2013): Presented a hands-on engineering design workshop to develop capacity of STEM teachers to implement NGSS engineering practices.
* New Teacher Mentor (2011 - 2012): Supported beginning physics teachers through workshops and mentor meetings; topics included project-based learning, standards-based grading, and video analysis.
* Exploratorium Teacher Institute participant (2004 - 2012): Worked with Exploratorium Teacher Institute staff to strengthen content knowledge and inquiry practices during summer institutes and academic year workshops.

### Innovative Teacher of the Year (2011) Carlmont High School - Belmont, CA

### Amgen Award for Science Teaching Excellence (2011) Amgen Corporation

### National Board Certification (Science - Adolescent/Young Adult) (2009) National Board for Professional Teaching Standards

## Engineering Experience

### Mechanical Engineer (May 2000 - December 2003) St. Jude Medical, Inc. - Sunnyvale, CA

* Managed a cross-functional project team of engineers and designers to design a "next generation" implantable defibrillator device, reducing size and cost while improving manufacturability. Design responsibilities included overall mechanical design and development of custom capacitor and battery specifications.

### Mechanical Engineer (May 1997 - May 2000) Asyst Technologies (Hine Design) - Sunnyvale, CA

* Designed semiconductor wafer handling automation to improve reliability, manufacturability, and cost. Managed robot configurations to achieve custom functionality and chemical exposure requirements.

### Mechanical Engineer (August 1995 - April 1997) Applied Materials, Inc. - Santa Clara, CA

* Worked with industrial semiconductor manufacturers to specify and develop customer-specific features such as heat exchangers and toxic gas double-containment systems.

### Maintenance Engineer (August 1994 - August 1995) ATMEL Inc. - San Jose, CA

* Developed a technician training program to ensure accuracy and reliability of memory-chip testing.

## Relevant Technical Skills

* R/R Studio including spatial analysis, data visualization, package development, ShinyApps, and Git/GitHub integration
* MATLAB, C/C++, HTML, JavaScript
* ArcGIS, QGIS