

JUDITH DOINO LEMUS

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ADDRESS: Hawai'i Institute of Marine Biology, P.O. Box 1346, Kane'ohe, HI 96744

EDUCATION:

Ph.D. 1998, USC, Biological Sciences - Advisor: Dr. Margaret McFall-Ngai
"The Role of Light Organ Symbionts in Signaling Early Morphological and Biochemical Events in a Hawaiian Sepiolid Squid"

M.A. 1993, UCLA, Biology - Advisor: Dr. Len Muscatine
"Low Temperature Acclimation in the Sub-Tropical Sea Anemone *Aiptasia pulchella* (Carlgren)"

B.S. 1988, UCLA, Biology

PROFESSIONAL HISTORY:

Assistant Professor, Specialist (02/08 – present)

Hawai'i Institute of Marine Biology, University of Hawai'i at Manoa

- Design and administration of program initiatives in coral reef research and education
- Development of professional development programs and materials for Pacific region resource agencies
- Creation and administration of HIMB internship programs with federal, state and local agencies

Research Assistant Professor (6/06 – 01/08)

Department of Biological Sciences, University of Southern California

- Development and design of university-based outreach and education programs

Director of Education (3/04 – 01/08)

Wrigley Institute for Environmental Studies, University of Southern California

- Directed and managed all pre-college and teacher (K-12) education programming at the Institute
- Directed NSF COSEE-West program (Centers for Ocean Sciences Education Excellence, a National Science Foundation initiative to enhance marine sciences in K-12 education)
- Directed science field programs for students and families at the Wrigley Marine Science Center on Catalina Island
- Developed new and innovative programs for K-12 education and teacher training
- Created and instructed marine science university courses for teachers and high school students

Marine Advisory Program Leader (10/98-3/04)

Sea Grant Program, University of Southern California

- Directed professional and public outreach for transfer of research-based information and technologies related to the marine environment;

- Acted as science liaison between university scientists and lay audiences, including resource managers, policy makers, NGOs, educators, and the general public;
- Supervisor of Education program
- Content specialist and instructor for marine science curriculum
- Science writing/communications
- Oversaw graduate student trainee program;
- Developed proposals for additional funding and collaborative projects.

Science Specialist (10/96-10/98)

USC Sea Grant Traineeship

Content development of "Island Explorers" multidisciplinary marine science curriculum for grades 4-8, including design of interactive web-based learning activities; Instructor for Island Explorers student excursions and teacher training at Wrigley Marine Science Center on Catalina Island; Assistant to the Marine Advisory Services Leader.

Exhibit Consultant (6/96-9/96)

Calif. Museum of Science and Industry, Exposition Park

Assistant to Dr. Diane Perlov, Special Exhibits Curator. Updated and modified information for portions of the "Our Urban Environment" exhibit as needed to comply with current data and scientific opinion.

Marine Biology Summer Camp Teacher (7/90)

Bruin Kids, University of California, Los Angeles

Developed and taught activities pertaining to the marine environment for 7-10 yr. olds.

Laboratory Supervisor, West Indies Laboratory (8/88-7/89)

St. Croix, USVI (Farleigh Dickenson University)

Developed and organized educational outreach program with local schools and public; Large and small boat operations; Assistant to the dive officer; Laboratory and field assistance to researchers; Maintenance of laboratories, classrooms and equipment; Maintenance of seawater tables and aquaria; Care of marine organisms at lab; Chemical inventory and waste management.

Research Technician for Dr. Len Muscatine (5/88-7/88)

University of California, Los Angeles

Study of the physiological responses of a subtropical anemone to low temperatures; Care and maintenance of seawater aquaria.

Veterinary Assistant for: (1985-88)

Kathleen Boldy, DVM; West L.A. Animal Hospital; Conejo Valley Animal Clinic

Care of animals; Administration of medications and injections; Assistance with technical procedures and surgeries.

TEACHING EXPERIENCE:

Lead Instructor, USC Biological Sciences (Spring 2007)

Communicating Ocean Sciences to Informal Audiences

Lead Instructor, USC Summer Seminar (2004, 2006)

Oceanography of the Southern California Bight

Adjunct Faculty, Santa Monica College (Spring, 2005)
Biology 3: Fundamentals of Biology

Lead Instructor, USC Summer Seminar (2004)
Field Program in Galapagos: Ecology and Evolution
Ecology and Habitats of Catalina Island

Instructor and Designer, Center for Ocean Sciences Education Excellence
Teacher workshops on coastal oceans, oceans and human health, extreme environments,
open ocean and coral reefs.

Invited Lecturer, UCLA Extension: Recent Advances in Marine Science (2003)
“Symbiosis and Bioluminescence”

Invited Lecturer, UCLA Ecology (2002)
“The Role of Symbiosis and Facilitation in Ecology”

Invited Lecturer, LAUSD Sea Education Awareness Series for Teachers (2002)
“Coastal Habitats”

Invited Lecturer, USC Freshman Biology Colloquium (1999, 2000, 2001)
“Bioluminescent Symbioses”, “Current Research at USC Sea Grant”

Teaching Assistant, Biological Sciences, USC (1992-1996)
Courses taught: Human Biology, Humans and the Environment, Advanced Molecular
Biology, Biochemistry, Advanced Biochemistry, Physiology, Invertebrate Zoology,
Marine Biology

Teaching Assistant, Biology, UCSB (1992)
Courses taught: Introductory Biology

Teaching Assistant, Biology, UCLA (1989-1991)
Courses taught: Biology, Biology Laboratory, Marine Biology

G-STEP Participant, USC (10/96-6/97)
Graduate Science Teaching Assistant Enhancement Program

RESEARCH EXPERIENCE:

Science Coordinator (West Coast), Global Heartbeat (2001-present)
Environmental research and high school education initiative to investigate physiological
responses to environmental stress in shore crabs (<http://www.globalheartbeat.org>)

Principal Investigator, National Sea Grant Aquatic Nuisance Species Initiative (2001-2005)
Co-Pi with S. Murray (Dept. of Biology, CSUF). Investigation of stress protein expression
in strains of *C. taxifolia* that display a high degree of thermal tolerance

Research Assistant, Biological Sciences, USC (1992-1996)
Biochemical interactions in a squid-luminous bacterium symbiosis

Research Assistant, Biology, UCSB (1991)
Promoter gene expression in a Rhizobium-legume symbiosis

Research Assistant, Biology, UCLA (1988)
Physiological adaptation to thermal stress in symbiotic anemones

OTHER POSITIONS:

Board of Directors, Southern California Academy of Sciences (1999-present)
Vice President, 2002-2004

Technical Advisory Committee, Santa Monica Bay Restoration Commission (1998-present)

Invited Science Consultant, L.A. Academic Decathlon (2003)

President, Marine Science Graduate Students Organization, USC (9/96-6/97)

PUBLICATIONS:

Papers

Lemus, J. and L. Murray (2007). Leveraging COSEE: Going Above and Beyond.
Current: J. Marine Education Spring: . Invited author.

Lemus, J. (2007). Ocean Literacy. *Tidelines* (Cabrillo Marine Aquarium). Invited author.

Grifman, P. and **J.D. Lemus** (2005), eds. Public Report on the Biological Baseline Studies at the Ports of Los Angeles and Long Beach. *University of Southern California Sea Grant Program #USCSG-TR-01-05*.

Lemus, J.D. and C. Cudaback, Eds. (2003). Executive Summary, Review Panel Report: Huntington Beach Phase III Final Draft Report. *University of Southern California Sea Grant Program #USCSG-TR-02-2003*.

Lemus, J.D. and J. Pederson (2001). The Relationship Between Sea Grant Extension and Research. In: The Fundamentals of Sea Grant Extension (invited author). National Sea Grant College Program.

Lemus, J.D. and S. Weisberg (2000). Huntington Beach Closure Investigation: Technical Review. *University of Southern California Sea Grant Program #USCSG-TR-01-2000*.

Doino Lemus, J. and M. McFall-Ngai (2000). Alterations in the proteome of the *Euprymna scolopes* light organ in response to symbiotic *Vibrio fischeri*. *Applied and Environmental Microbiology* 66: 4091-4097.

Visick, K.L., J. Foster, **J. Doino**, M. McFall-Ngai and E.G. Ruby (2000). *Vibrio fischeri lux* genes play an important role in colonization and development of the host light organ. *J. Bacteriol.* 182: 4578-4586.

Doino, J. and M. McFall-Ngai (1995). A transient exposure to symbiosis-competent bacteria induces light organ morphogenesis in the host squid. *Biological Bulletin* 189: 347-355.

Muscatine, L., D. Grossman and **J. Doino** (1991). Release of symbiotic algae by tropical sea anemones and corals after cold shock. *Marine Ecology Progress Series* 77: 233-243.

Published Abstracts

Doino, J. and M. McFall-Ngai (1997) *American Zoologist* 37(5): 125A

Doino, J. and M. McFall-Ngai (1996) *American Zoologist* 36(5): 41A

Doino, J. and M. McFall-Ngai (1995) *American Zoologist* 35(5): 30A

Doino, J. and M. McFall-Ngai (1993) *American Zoologist* 33(5): 69A

Curricula

Island Explorers Marine Science Curricula, USC Sea Grant Program

Parent-Child Education Program, USC Sea Grant Program

<http://www.usc.edu/org/seagrant/Education/ParentChildEdu/ParentChildEd.html>

COSEE-West Lesson Plans, USC/UCLA COSEE-West Program

<http://www.usc.edu/org/cosee-west>

Websites

COSEE-West - <http://www.usc.edu/org/cosee-west>

QuikScience - <http://www.usc.edu/quikscience>

Edison Challenge - <http://www.usc.edu/org/edisonchallenge>

Sea Grant Island Explorers -

<http://www.usc.edu/org/seagrant/Education/IELessons/IELessons.html>

FUNDING AND FELLOWSHIPS:

COSEE-West: Centers for Ocean Sciences Education Excellence. NSF Ocean Sciences education initiative. Lead PI; OCE-0753224 (2007-2012) - \$2.6 million

Edison Challenge: Edison International corporate sponsorship of science education. Co-PI (2006-2010) - \$1 million

COSIA – Communicating Ocean Sciences to Informal Audiences. Lead PI; SA5173-11062 (2006-2009) - \$60,900

QuikScience program: Quiksilver corporate sponsorship of science education. Co-PI (2004-2009) - \$1.25 million

COSEE-West program: NSF Ocean Sciences education initiative (2002-2007) - \$1.25 million

National Sea Grant Aquatic Nuisance Species Initiative. Co-PI (2001-2004)

Physiological and molecular studies for assessing the invasion potential of *Caulerpa* and early warning outreach - \$138,200

California Whale Tail Grant: Parent-Child Science Education (2001-2002)

Santa Monica Bay Restoration Project PIE Grants:

Incorporating storm water mitigation into architectural designs (2000-2001)

Parent-Child science education program (2000-2001)

USC Sea Grant Traineeship (1996-1997)

ARCS (Achievement Rewards for College Scientists) (1994-1996)

ONR Graduate Research Fellowship (1993-1994)

PRESENTATIONS AT NATIONAL AND REGIONAL MEETINGS:

American Society of Limnology and Oceanography (2002, 2004, 2005, 2006)
American Zoo and Aquarium Association (2004)
California and the World Oceans, session chair (2002)
California Coastal Coalition/California Shore and Beach Preservation Association (2000)
National Marine Educators Association (2000, 2003)
Southern California Academy of Sciences, symposium chair (1998, 2001)

ACADEMIC AWARDS:

Best Poster Award, West Coast Developmental Biology Meeting (1993)
Outstanding Teaching Assistant Award, Biology, USC (1992)
Dean's Honor List, UCLA (1986, 1987)
Freshman Honor Society, UCLA (1983)

PROFESSIONAL SOCIETIES:

Southern California Academy of Sciences
American Society of Limnology and Oceanography
National Marine Educators Association
International Symbiosis Society

OTHER SKILLS:

Physiological and biochemical laboratory techniques
Light microscopy and scanning electron microscopy
Advanced Diver Certification (NAUI)
Diving Rescue Certification (NAUI)
Underwater Photography Certification (PADI)
Small boat operations
Underwater and intertidal field survey methods

SERVICE WORK:

Hawai'i State Science Fair (2008)
Senior research projects judge
Southern California Academy of Sciences Board of Directors (1999-2007)
(Vice President, 2002-04 and 2006-07)
Community Emergency Response Team (CERT), Culver City (2002-2007)
Los Angeles County Science Fair (1998-2007)
Science judge for junior and senior level projects
Ocean Science Bowl (1998-2007)
Judge and moderator for Southern California regional competitions
UCLA Ocean Discovery Center (1996-97)
Docent: provided educational information and assistance to visitors; taught education programs to school groups
UCLA Medical Center, Pediatric Ward (1990)
Provide companionship, support and interactive play opportunities to young patients (to make their hospital stay as comfortable as possible).