

# CURRICULUM VITAE

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Born: May 1<sup>st</sup>, 1970 in Helsinki, Finland  
Citizenship: U.S.A. and Finland

## EDUCATION

Ph.D. in Zoology (2003), University of Hawaii at Manoa.  
B.A. in Zoology (1993), University of Hawaii at Manoa.

## RESEARCH AND TEACHING HISTORY

Assistant Researcher. Hawaii Institute of Marine Biology. July 2007 – present. Duties include: Design and execute field research projects to assess and acoustically monitor biological activity in the NWHI. Lead field investigation of marine mammal in Hawaiian and Alaskan waters. Conduct experimental research on cetacean acoustic behavior processes. Supervise the work of graduate and undergraduate students.

Marine Bioacoustician. Joint Institute for Marine and Atmospheric Research, University of Hawaii. Sept. 2007 – present. Duties include: Lead and develop all phases of a passive acoustics monitoring program for NOAA's Pacific Islands Fisheries Science Center, Coral Reef Ecosystem Division.

President and Research Director. Oceanwide Science Institute (OSI, a Hawaii-based non-profit organization). April 1998 - present. Duties include: Create, plan and execute OSI research objectives, secure funding for research and operational costs, implement research programs and coordinate the activities of members of the organization ([www.oceanwidescience.org](http://www.oceanwidescience.org)).

Post-Doctoral Fellow. Pacific Islands Fisheries Science Center, Coral Reef Ecosystem Division. April 2003 – July 2007. Duties included: Design and execute field research projects and develop passive acoustic tools, including electronics and analysis algorithms, to assess and monitor biological activity in remote marine habitats in the Pacific. Work with ship-based active acoustic systems to study scattering layer communities around islands and atolls in the Pacific. Supervise the work of graduate and undergraduate students.

Project Leader. SPLASH – Oahu - OSI. January 2004 – April 2006. Duties included: Planning and leading a field effort to photo-ID and biopsy humpback whales (*Megaptera Novaeangliae*) occurring off Oahu, Hawaii as part of the international collaborative project SPLASH (Structure of Populations, Levels of Abundance and Status of Humpback Whales).

Doctoral Student Researcher. Marine Mammal Research Program, Hawaii Institute of Marine Biology. August 1996 – May 2003. Dissertation research focused on the bioacoustics and behavioral ecology of Hawaiian spinner dolphins (*Stenella longirostris*) and other delphinid species. This work involved

extensive development and field application of state-of-the-art electronic instrumentation and data analysis algorithms.

Research Assistant. Marine Mammal Research Program, Hawaii Institute of Marine Biology. July 1998 – February 1999 and July 2002 – May 2003. Duties included: Creating and implementing the data analysis algorithms for a humpback whale bioacoustics study, analyzing the data and reporting on the results.

Project Leader. Whale/ship collision study - OSI. January 2002 – September 2003. Duties included: Designing, conducting and reporting on a study examining the historical occurrence of whale/vessel collisions in Hawaiian waters for the Hawaiian Islands Humpback Whale National Marine Sanctuary.

Biology Instructor. Biology Program – University of Hawaii at Manoa. August 1996 – July 1999 and August 2000 – July 2002. Duties included: Teaching two weekly introductory biology laboratory courses, guiding student experiments and dissections, grading weekly assignments, and creating, administering and grading laboratory exams.

Project Leader. Kalaeloa Barber's Point Dolphin Survey - OSI. February 2001 – July 2001. Duties included: Designing, conducting and reporting on a field study examining the distribution of humpback whales and dolphins in the vicinity of Kalaeloa Barber's Point Harbor. Aiding with the preparation of a Biological Assessment report to establish the effects of proposed construction activities on local marine mammal populations.

Project Leader. UDDAS Development Project - OSI. September 2000 – August 2002. Duties included: Designing, building and testing the hardware and software for an Underwater Dolphin Data Acquisition System (UDDAS) capable of obtaining simultaneous video and broadband directional acoustic data from free-ranging dolphins.

Research Assistant. Marine Mammal Research Program, Hawaii Institute of Marine Biology. January 2000 – July 2000. Duties included: Designing, conducting and reporting on a study examining the distribution of humpback whales and dolphins along SW Oahu, Hawaii and relating findings to the potential impacts of an experimental high-speed ferry system on marine mammals in the area.

Laboratory Technician. Hawaii Institute of Marine Biology. February 1995 - August 1995. Duties included: Collecting data for coral development and regeneration experiments, conducting field surveys of coral reefs, and managing coral cultures.

Assistant Biologist. Mediterranean Dolphin Association, Cadaques, Spain. June 1994 - December 1994. Duties included: Conducting research on the behavior of four captive bottlenose dolphins (*Tursiops truncatus*) and assisting in day-to-day training and care of the animals.

Laboratory Technician. Pacific Biomedical Research Center, Honolulu, HI. January 1992 - June 1992. Duties included: Conducting experiments on the metamorphosis of invertebrate larvae, managing cultures of nudibranchs and various algal species, and assisting researchers as needed.

Research Assistant. National Marine Fisheries Service, Honolulu, HI. July 1990 - July 1991. Duties included: assisting in capture and tagging efforts of Hawaiian green sea turtles (*Chelonia midas*) and participating in a sea turtle radiotracking project.

## PUBLICATIONS AND PRESENTATIONS

### Publications:

- Lammers, M.O., Pack, A.A. and Davis, L. (In prep). "Trends in whale/vessel collisions in Hawaiian waters" To be submitted to the J. Cetacean Res. Manage.
- Lammers, M.O., Stieb, S., Au, W.W.L., Mooney, T.A., Brainard, R.E. and Wong, K. (In prep). "Temporal, geographic and density variations in the acoustic activity of snapping shrimp." To be submitted to Mar. Ecol. Prog. Ser.
- Lammers, M.O. and Castellote, M. (In review). "The beluga whale convolves two pulses to form its sonar signal" Submitted to Biology Letters.
- Lammers, M.O., Brainard, R.E. and Au, W.W.L., Mooney, T.A. and Wong K. (2008). "An Ecological Acoustic Recorder (EAR) for long-term monitoring of biological and anthropogenic sounds on coral reefs and other marine habitats." J. Acoust. Soc. Am. 123:1720-1728
- Au, W. W. L. and Lammers, M.O. (2007). "Cetacean acoustics" In: Handbook of Acoustics. Ed. T. Rossing. Springer-Verlang. 1000p
- Oswald, J.N., Rankin, S., Barlow, J. and Lammers, M.O. (2007) "ROCCA: A new tool for real-time acoustic species identification of delphinid whistles". J. Acoust. Soc. Am. 122:587-595.
- Rankin, S., Oswald, J.N., Barlow, J. and Lammers, M.O. (2007.). "Vocalizations of the northern right whale dolphin (*Lissodelphis borealis*)." J. Acoust. Soc. Am. 121: 1213-1218.
- Lammers, M.O., Brainard, R.E. and Au, W.W.L (2006). "Diel trends in the mesopelagic biomass community of the Northwestern Hawaiian Islands observed acoustically". Atoll Research Bulletin, 543:391-407.
- Rasmussen M.H., Lammers M.O., Beedholm K. and Miller L.A. (2006). "Source levels and directionality of white-beaked dolphin (*Lagenorhynchus albirostris*) whistles". J. Acoust. Soc. Am. 120:510-517.
- Au, W. W. L., Pack, A.A., Lammers, M.O., Herman, L.M., Deakos, M. and Andrews, K. (2006). "Acoustic properties of humpback whale song". J. Acoust. Soc. Am. 120:1103-1110.
- Lammers, M.O., Schotten, M. and Au, W.W.L. (2006). "The spatial context of whistle and click production in pods of Hawaiian spinner dolphins (*Stenella longirostris*)." J. Acoust. Soc. Am. 119: 1244-1250.
- Lammers, M.O. (2004). "Occurrence and behavior of Hawaiian spinner dolphins (*Stenella longirostris*) along Oahu's leeward and south shores." Aqua. Mamm. 30:237-250.
- Lammers, M.O., Au, W.W.L. and Aubauer, R. (2004). "A comparative analysis of echolocation and burst-pulse click trains in *Stenella longirostris*." In: Echolocation in Bats and Dolphins. Eds. Thomas, J., Moss, C. & Vater, M. University of Chicago Press. pp. 414-419.
- Schotten, M., Au, W. W. L., Lammers M. O., and Aubauer R. (2004). "Echolocation recordings and localizations of wild spinner dolphins (*Stenella longirostris*) and pantropical spotted dolphins (*Stenella attenuata*) using a four hydrophone array." In: Echolocation in Bats and Dolphins. Eds. Thomas, J., Moss, C. & Vater, M. University of Chicago Press. pp. 393-400.
- Lammers, M.O., Au, W.W.L and Herzing, D.L. (2003). "The broadband social acoustic signaling behavior of spinner and spotted dolphins." J. Acoust. Soc. Am. 114:1629-1639.
- Lammers M.O. and Au W.W.L. (2003). "Directionality in the whistles of Hawaiian spinner dolphins (*Stenella longirostris*): A signal feature to cue direction of movement?" Mar. Mamm. Sci. 19:249-264.
- Benoit-Bird, K.J., Au, W.W.L., Brainard, R.E. and Lammers, M.O. (2001). "Diel horizontal migration of the Hawaiian mesopelagic boundary community observed acoustically." Mar. Ecol. Prog. Ser. 217:1-14.
- Au, W. W. L., Mobley, J., Burgess, W. C., Lammers, M. O., Nachtigall, P. E. (2000). "Seasonal and diurnal trends of chorusing humpback whales wintering in waters off west Maui." Mar. Mamm. Sci. 16:530-544.

- Aubauer, R., Lammers, M. O. and Au, W. W. L. (2000). "One-hydrophone method of estimating distance and depth of phonating dolphins in shallow water." J. Acoust. Soc. Am. 107:2744-2749.
- Au, W. W. L., Lammers, M. O. and Aubauer, R. (1999). "A Portable Broadband Data Acquisition System for field studies in bioacoustics," Mar. Mamm. Sci. 15:526-531.

#### Technical Reports:

- Lammers, M.O., Pack, A.A. and Davis, L. (2003). "Historical evidence of whale/vessel collisions in Hawaiian waters (1975 – Present)." OSI Technical Report 2003-01. Prepared for NOAA's Hawaiian Islands Humpback Whale National Marine Sanctuary.
- Lammers, M.O., Albinsson, L., Benoit-Bird, K. and Davis, L. (2001). "The occurrence and behavior of whales and dolphins near Kalaheo Barbers Point Harbor: A study to assess the potential interactions with proposed harbor modification activities." OSI Technical Report 2001-1. Prepared for the Hawaii State Department of Transportation – Harbors Division.
- Lammers, M.O., W.W.L. Au, and D. Feinholz (2000). "The occurrence and distribution of marine mammals along Oahu's Ewa/Honolulu coast: a study to assess the potential interactions between high-speed ferry traffic and local populations." MMRP/HIMB Technical Report 20001. Prepared for Pacific Marine & Supply Co., Ltd.

#### First-authored presentations:

- Lammers, M.O., Bernasconi, S., Au, W.W.L., Wong, K. and Brainard, R. (2008). "Patterns of coastal use by Hawaiian spinner dolphins (*Stenella longirostris*) observed using passive acoustic monitoring." J. Acoust. Soc. Am. 124, 2483 (156<sup>th</sup> meeting of the ASA, Miami, Florida)
- Lammers, M.O. and Castellote, M. (2008). "One plus one equal one: the beluga whale (*Delphinapterus leucas*) produces two pulses to form its sonar click." J. Acoust. Soc. Am. 123, 3772 (155<sup>th</sup> meeting of the ASA, Paris, France)
- Lammers, M.O., Mooney, T.A. and Au, W.W.L. (2007). "The occurrence and use of coastal and offshore habitats by Hawaiian delphinids measured using passive acoustic monitoring" Abstracts of the 17<sup>th</sup> Biennial Conference on the Biology of Marine Mammals in Cape Town, South Africa (December 2007).
- Lammers, M.O. Stimpert, A.K., Au, W.W.L. and Mooney, T.A. (2007). "Diel and spatial patterns of singing behavior of humpback whales off Oahu, Hawaii". Abstracts of the 21<sup>st</sup> Annual Conference of the European Cetacean Society, San Sebastian, Spain. April 23-25, 2007.
- Lammers, M.O. (2007). "Passive acoustic monitoring of biological and anthropogenic activities in nearshore habitats." Invited seminar at the Scripps Institute of Oceanography on Jan. 10, 2007.
- Lammers, M.O., Stieb, S., Au, W.W.L, Mooney, T.A., Brainard, R.E. and Wong, K. (2006). "Temporal, geographic, and density variations in the acoustic activity of snapping shrimp." J. Acoust. Soc. Am. 120, 3013 (4<sup>th</sup> Joint Meeting of the ASA and ASJ, Honolulu, HI).
- Lammers, M.O., Mooney, T.A., Brainard, R.E. and Au, W.W.L (2006). "Passive acoustic monitoring of biological activity on coral reefs and in nearby waters." 2006 Ocean Sciences Meeting, Honolulu, HI. 20-24 February, 2006.
- Lammers, M.O. Stimpert, A.K., Au, W.W.L. and Mooney, T.A. (2005). "Diel and spatial patterns in the singing behavior of humpback whales off Oahu, Hawaii". Abstracts of the 16<sup>th</sup> Biennial Conference on the Biology of Marine Mammals in San Diego, California (December 2005).
- Lammers, M.O., Mooney, T.A., Brainard, R.E. and Au, W.W.L (2005). "Passive acoustic monitoring of biological activity on coral reefs and in nearby waters." J. Acoust. Soc. Am. 118, 1908. (150<sup>th</sup> meeting of the ASA, Minneapolis, MN.)
- Lammers, M.O., Stimpert, A.K., Au, W. W. L. and Mooney, T.A. (2005). "Diel and spatial patterns in the singing behavior of humpback whales off Oahu, Hawaii." J. Acoust. Soc. Am. 118, 1940. (150<sup>th</sup> meeting of the ASA, Minneapolis, MN.)

- Lammers, M.O., Brainard, R.E. and Au, W.W.L (2005). “Diel trends observed acoustically in the mid-water biomass occurring near Pacific islands and atolls”. Abstracts of the 1<sup>st</sup> Annual Underwater Acoustic Measurements Conference, Heraklion, Crete, June 27 - July 1, 2005.
- Lammers, M.O., Schotten, M. and Au, W.W.L (2004). “The spatial context of free-ranging Hawaiian spinner dolphins producing acoustic signals”. J. Acoust. Soc. Am. 115, 2615. (148<sup>th</sup> meeting of the ASA, San Diego, CA.)
- Lammers, M.O., Brainard, R.E. and Au, W.W.L (2004). “Diurnal trends in the mid-water biomass community of the Northwestern Hawaiian Islands observed acoustically”. J. Acoust. Soc. Am. 115, 2488. (148<sup>th</sup> meeting of the ASA, San Diego, CA.)
- Lammers, M.O. Au, W.W.L and Schotten, M (2003). “The spatial context of whistles and burst pulses produced by Hawaiian spinner dolphins (*Stenella longirostris*).” Abstracts of the 15<sup>th</sup> Biennial Conference on the Biology of Marine Mammals, Greensboro, North Carolina. December 2003.
- Lammers, M.O., Au, W.W.L. and Aubauer, R. (2002). “Narrowband *Phocoena*-like clicks produced by a delphinid species.” J. Acoust. Soc. Am. 112, 2334. (144<sup>th</sup> meeting of the ASA, Cancun, Mexico.)
- Lammers, M.O. and Au, W.W.L (2001). “Directionality and the occurrence of social acoustic signals in traveling pods of Hawaiian spinner dolphins.” Abstracts of the 14<sup>th</sup> Biennial Conference on the Biology of Marine Mammals, Vancouver, Canada. December 2001.
- Lammers, M.O. (2001). “Localizing dolphin acoustic signals using a three-hydrophone towed array: preliminary findings.” 26<sup>th</sup> Annual Tester Memorial Symposium. Honolulu, HI.
- Lammers, M.O., Au, W.W.L., Herzing, D., Oswald, J. (1999). “Bandwidth Characteristics of the Social Acoustic Signals of Three Species of Free-Ranging Delphinids.” Abstracts of the 13<sup>th</sup> Biennial Conference on the Biology of Marine Mammals, Wailea, Maui. December 1999.
- Lammers, M.O. (2000). “The occurrence and behavior of Hawaiian spinner dolphins (*Stenella longirostris*) along leeward and south Oahu: Implications for conservation and management” Pac. Sci. 54:95-96 (24<sup>th</sup> Annual Tester Memorial Symposium. Honolulu, HI).
- Lammers, M.O., Au, W.W.L. and Aubauer, R. (1998). “A comparative analysis of echolocation and burst-pulse click trains in *Stenella longirostris*.” Abstracts of the Biological Sonar Conference in Carvoeiro, Portugal (May 1998).
- Lammers, M.O., Au, W.W.L. and Aubauer, R. (1998). "The broadband nature of spinner dolphin (*Stenella longirostris*) social signals: evidence from field studies." Abstracts of the 12<sup>th</sup> Biennial Conference on the Biology of Marine Mammals in Monaco (January 1998).
- Lammers, M.O., Au, W.W.L. and Aubauer, R. (1997). “Broadband characteristics of spinner dolphin (*Stenella longirostris*) social acoustic signals.” J. Acoust. Soc. Am. 102, 3122. (134<sup>th</sup> meeting of the ASA, San Diego, CA.)
- Lammers, M.O. and Au, W.W.L. (1997). “Broadband recording of Hawaiian spinner and spotted dolphin social acoustic signals.” 22<sup>nd</sup> Annual Tester Memorial Symposium. Honolulu, HI.
- Lammers, M.O. and Au, W.W.L. (1997). "Broadband recording of free-ranging delphinid social acoustic signals". The 1997 Symposium on Information Processing by Aquatic Mammals. Vallejo, CA.
- Lammers, M.O. and Au, W.W.L. (1996). “Broadband recording of social acoustic signals of the Hawaiian spinner and spotted dolphins.” J. Acoust. Soc. Am. 100, 2609 (3<sup>rd</sup> Joint Meeting of the ASA and ASJ, Honolulu, HI).

Co-authored presentations:

- Apprill, A.M., Mooney, T.A., Stimpert, A.K., Lammers, M.O. and Rappe, M.S. (2007) “A novel approach to examine environmental and health-related characteristics of humpback whales using the bacterial composition of epithelial skin” Abstracts of the 17<sup>th</sup> Biennial Conference on the Biology of Marine Mammals in Cape Town, South Africa (December 2007).
- Schotten, M., Lammers, M.O., Herzing, D.L., Sexton, K.D. and Au, W.W.L. (2007). “Application of a new diver-operated 4-channel acoustic/video device to record and localize high frequency dolphin

sounds.” Abstracts of the 21<sup>st</sup> Annual Conference of the European Cetacean Society, San Sebastian, Spain. April 23-25, 2007.

- Oswald, J.N., Rankin, S., Barlow, J. and Lammers, M.O. (2005). “A new tool for real-time acoustic identification of dolphin whistles using two different statistical methods” Abstracts of the 16<sup>th</sup> Biennial Conference on the Biology of Marine Mammals in San Diego, California (December 2005).
- Pack, A.A., Herman, L.M., Deakos, M.H., Hakala, S., Craig, A., Olson, J., Spitz, S., Herman, E., Goetschius, K. and Lammers, M.O. (2005) “First report of sounds recorded from individual humpback whale calves on the Hawaiian wintering grounds.” Abstracts of the 16<sup>th</sup> Biennial Conference on the Biology of Marine Mammals in San Diego, California (December 2005).
- Schotten, M., Lammers, M.O., Sexton, K.D. and Au, W.W.L. (2005) “A new underwater portable 4-channel acoustic/video recording unit to study echolocation and communication of individual wild dolphins.” Abstracts of the 16<sup>th</sup> Biennial Conference on the Biology of Marine Mammals in San Diego, California (December 2005).
- Stimpert, A.K., Wiley, D.A., Shorter, K.A., Barton, K.L., Johnson, M., Ware, C., Arsenault, R., Lammers, M.O. and Au, W.W.L (2005). “A novel sound recorded in association with bottom feeding in humpback whales.” Abstracts of the 16<sup>th</sup> Biennial Conference on the Biology of Marine Mammals in San Diego, California (December 2005).
- Oswald, J.N., Rankin, S., Barlow, J. and Lammers, M.O. (2005). “A new tool for real-time acoustic species identification of delphinid whistles” J. Acoust. Soc. Am. 118, 1909. (150<sup>th</sup> meeting of the ASA, Minneapolis, MN)
- Stimpert, A.K., Wiley, D.A., Barton, K.L., Johnson, M., Lammers, M.O. and Au, W.W.L (2005) “Sound production patterns from humpback whales in a high latitude foraging area” J. Acoust. Soc. Am. 118, 1940. (150<sup>th</sup> meeting of the ASA, Minneapolis, MN)
- Au, W. W. L., Lammers, M.O., Stimpert, A.K. and Schotten, M. (2005) “The temporal characteristics of humpback whale songs.” J. Acoust. Soc. Am. 118, 1940. (150<sup>th</sup> meeting of the ASA, Minneapolis, MN)
- Au, W. W. L., Stimpert, A.K., Lammers, M.O., and Johnson, N. (2005). “Autonomous remote humpback whale acoustic monitoring devices.” J. Acoust. Soc. Am. 117, 2551. (149<sup>th</sup> meeting of the ASA, Vancouver, Canada.)
- Au, W. W. L., Lammers, M.O., Pack, A.A. and Herman, L.M. (2004). “Vertical array measurements of humpback whale songs.” J. Acoust. Soc. Am. 115, 2520. (147<sup>th</sup> meeting of the ASA, New York, NY)
- Au, W. W. L., Pack, A.A., Lammers, M.O., Herman, L.M., Andrews, K. and Deakos, M. (2003). “The acoustic field of singing humpback whales in the vertical plane.” J. Acoust. Soc. Am. 115, 2277. (145<sup>th</sup> meeting of the ASA, Nashville, TN)
- Pack, A.A., Au, W. W. L., Lammers, M.O., Herman, L.M., and Deakos, M. (2003). “Determining the acoustic field and transmission characteristics of singing humpback whales on the Hawaiian winter grounds.” Abstracts of the 15<sup>th</sup> Biennial Conference on the Biology of Marine Mammals, Greensboro, North Carolina. December 2003.
- Au, W. W. L., Lammers, M.O., Nachtigall, P. E., Mobley, J. and Burgess, W.C. (2000). “Characteristics of chorusing sounds of humpback whales wintering in waters off western Maui.” J. Acoust. Soc. Am. 115, 2612. (140<sup>th</sup> meeting of the ASA, Newport Beach, CA)
- Burgess, W.C., Au, W.W.L., Mobley, J., Lammers, M.O. and Nachtigall, P.E. (1999). “Seasonal and diurnal trends of chorusing humpback whales wintering in waters off west Maui.” Abstracts of the 13<sup>th</sup> Biennial Conference on the Biology of Marine Mammals, Wailea, Maui. December 1999.

#### TECHNICAL SKILLS

- Skilled in electronic circuitry analysis, including the use of oscilloscopes, spectrum analyzers, signal generators and multimeters to test and troubleshoot electronics.
- Skilled at designing and developing electronics for field research. Examples of electronics developed

include: a Portable Broadband Data Acquisition System (PBDAS) and a three-element towed hydrophone array for broadband field recording of dolphins, a diver-operated video and broadband acoustic Underwater Dolphin Data Acquisition System (UDDAS), and an Ecological Acoustic Recorder (EAR) for monitoring biological and anthropogenic activity in remote marine habitats.

- Proficient in the use of computer programming languages, such as LabView and Matlab, for developing analysis algorithms and data acquisition software. Knowledgeable of C and Visual Basic.
- Working knowledge of the Simrad EK60 scientific echosounder and Echoview software.

#### EXPERIENCE AT SEA

- Over 1300 hours of small vessel (17'-32') field work in Hawaiian waters between 1996 and 2007.
- Eight 10-day research cruises on a 62' vessel in offshore Bahamian waters between 1999 and 2006.
- Participated in NOAA RAMP cruise OES-03-06 aboard Oscar Elton Sette (12 Jul - 17 Aug, 2003).
- Participated in NOAA RAMP cruise OES-04-04 aboard Oscar Elton Sette (21 Mar - 9 Apr, 2004).
- Participated in NOAA RAMP cruise OES-05-02 aboard Oscar Elton Sette (22 Feb - 6 Mar, 2005).

#### GRANTS AND CONTRACTS

- U.S. Fish and Wildlife Service (2008)
- NOAA/Northwest Fisheries Science Center (2007)
- Universitat Politècnica de Catalunya, Spain (2007)
- University of the Azores, Departamento de Oceanografia e Pescas, Portugal (2007, 2008)
- Alaska Sea Life Center (2008)
- L'Oceanografic, Parques Reunidos de Valencia, Spain (2006)
- EDAW, Inc. (2004)
- State of Hawaii, Department of Land and Natural Resources (2004, 2005, 2006)
- Tetra Tech, Inc. (2003)
- NOAA/Hawaiian Islands Humpback Whale National Marine Sanctuary (2002, 2005)
- State of Hawaii Department of Transportation, Harbors Division (2001)
- Homeland Foundation (2000, 2002, 2003)
- Marisla Foundation (2004, 2006)
- Western Pacific Fisheries Management Council (2006)
- Pacific Marine & Supply Co. (2000)
- John G. Shedd Aquarium Grant for Coastal Aquatic Sciences (1997)

#### PROFESSIONAL AFFILIATIONS AND SOCIETIES

- Chair, Research Committee, Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS) Advisory Council
- Member, Society for Marine Mammalogy (SMM)
- Member, European Cetacean Society (ECS)
- Member, Acoustical Society of America (ASA)
- Member, American Society of Limnology and Oceanography (ASLO)

#### OTHER SKILLS AND CERTIFICATES

- Fluent in German, French, Italian and Spanish and conversational knowledge of Finnish.
- U.S. Coast Guard 100 Ton Mate's License w/towing endorsement.
- FCC Marine radio operator's license.
- PADI Open Water Diver.

- Valid Hawaii Driver's license.