

2nd Student Affairs Workshop

13th Biennial Conference on the Biology of Marine Mammals

30 November 1999

Maui, Hawaii

Co-organized by Brenda Jensen and Jennifer Philips

We gratefully acknowledge the following for their generous sponsorship of our workshop:



Woods Hole Oceanographic Institution Sea Grant New Initiatives Program



The Society for Marine Mammalogy



The Pacific Whale Foundation

Program:

I 6:30 — 7:00 CHECK IN AND PIZZA TIME

II 7:00 WELCOME

Brenda Jensen

SMM Student Member-at-Large, MIT/WHOI Joint Program in Biological Oceanography, Woods Hole, MA 02543

III 7:05 — 8:00 CAREERS IN MARINE MAMMAL SCIENCE

7:05 Surviving Professional Puberty in Marine Mammalogy: Things Mom and Dad Didn't Tell You.

John Reynolds

Professor of Marine Science and Biology, Eckerd College, and Chairman, United States Marine Mammal Commission, Marine Science Department, Eckerd College, 4200 54th Avenue South, St. Petersburg, FL 33711, reynolje@eckerd.edu

John's research interests include a variety of topics, such as functional morphology, behavioral ecology, and population assessment. John works primarily with manatees and bottlenose dolphins, but he has worked some with other species as well. His other interests focus on conservation and management. John has served or currently serves on a number of entities (e.g., the Manatee Technical Advisory Council; Florida Manatee Recovery Team) whose focus is conservation of manatees in Florida and elsewhere. On a broader scale, the Marine Mammal Commission is charged with oversight of all Federal activities (research, management, enforcement) involving marine mammals in the United States. As Chairman, he gets involved in conferences and program reviews and in testifying before congressional committees on a variety of issues. Many MMC initiatives have served as catalysts for important research and conservation programs for marine mammals.

Overview of major career types in marine mammalogy:

7:20 Academia

D. Ann Pabst

Associate Professor, Biological Sciences, University of North Carolina at Wilmington, 601 S. College Rd., Wilmington, NC 28403

Ann's lab investigates how the mammalian body is adapted to the marine environment. Their current focus is on locomotor and thermoregulatory energetics. Ann mentors

graduate and undergraduate research students, and teaches comparative vertebrate anatomy, biomechanics, and marine mammal biology.

7:30 Government

Douglas P. DeMaster

Director, National Marine Mammal Laboratory, and Affiliate Associate Professor, University of Washington, Bld. 4, 7600 Sand Point Way, NE, Seattle, WA 98115, douglas.demaster@noaa.gov

Doug's main interest and activity is in the application of research on population dynamics of pinnipeds and cetaceans towards their conservation and management. Towards this end, he has tried to maintain quantitative skills, as well as trying to become better versed in population genetics, acoustics, and fishery interactions. As part of the research community that directly services managers, he spends a great deal of time meeting and trying to understand the position of a wide variety of advocacy groups (e.g., commercial fishing industry, environmental groups, and Alaska Native organizations).

7:40 Conservation and other Non-Government Organizations

Hanna Bernard

Executive Director, Hawai'i Wildlife Fund, P.O. Box 637, Paia, HI 96779, wild@aloha.net

Hanna's research interests are focused in the field of endangered species recovery. Her organization conducts research on the hawksbill sea turtle (*Eretmochelys imbricata*), (Hawaiian name - honu'ea), the monk seal (*Monachus schauinslandsi*) (ilio holo kai), and the coral reef ecosystem.

7:50 Research Facilities/Aquaria

Daniel K. Odell

Research Biologist, Corporate Zoological Operations, SeaWorld, Inc., Adjunct Professor, Department of Biology, University of Central Florida, Research Associate, Hubbs-SeaWorld Research Institute, 7007 Sea World Drive, Orlando, FL 32821-8097, Dan.Odell@Anheuser-Busch.com

Dan's primary research interests and activities include: biology of small cetaceans, especially bottlenose dolphins and members of the genus *Kogia*, collection of biological data through stranding networks, biology of sirenians, and aspects of the biology of marine mammals in captivity (details of growth and development). His job might be described as 'cephalopodic' because of all the tentacles and different directions that he goes in at the same time. Dan oversees all research and technical publishing activities of

SeaWorld and Busch Gardens parks. He is involved in the review of all other park materials that involve animal information: in-park graphics, show scripts, web pages, Shamu TV, books and other animal information items sold in gift shops. He serves on various state, federal and NGO committees. He also serves professional scientific societies (SMM, ASM) and is an editor for the journal *Zoo Biology*.

8:00 — 8:15 * BREAK *****

IV 8:15 — 9:30 SPECIALTY DISCUSSIONS

Acoustics

Dave Mellinger

Consultant to the National Marine Fisheries Service, and (soon to be) Assistant Professor, Hatfield Marine Science Center, Oregon State University, 3330 SW Knollbrook Ave., Corvallis, OR 97333, mellinger@pmel.noaa.gov

Dave's research involves developing acoustic methods for censusing and studying marine mammals.

Jeanette Thomas

Professor, Biology Department and Director of Laboratory of Sensory Biology, Western Illinois University Regional Center, and Marine Mammal Department, Shedd Aquarium, Chicago, IL, 3561 60th St., Moline, IL 61265, Jeanette_Thomas@ccmail.wiu.edu

Jeanette's primary research interests are sensory abilities of marine mammals, especially hearing and sound communication. She directs a master's level program related to marine mammal science, with emphasis on studies of bioacoustics. Jeanette also teaches courses and research taught in the marine mammal department of the Shedd Aquarium in Chicago.

Peter Tyack

Senior Scientist , Biology Department, Woods Hole Oceanographic Institution, MS #34 WHOI, Woods Hole, MA 02543, ptyack@whoi.edu

Peter's primary research interests include the following:

- Social behavior and acoustic communication in cetaceans.
- Vocal learning and mimicry in the natural communication systems of cetaceans.
- Individually distinctive signature signals, vocal learning, and mimicry in the bottlenose dolphin and the sperm whale.
- Acoustic structure and social functions of the songs of baleen whales.
- Responses of cetaceans to man-made noise.

- Playback to cetaceans of their own and conspecific vocalizations.
- Development of methods to identify which cetacean produces a sound within a social group.

Anatomy and Physiology

Darlene Ketten

Associate Scientist, Biology Department, Woods Hole Oceanographic Institution, and Assistant Professor, Department of Otology and Laryngology, Harvard Medical School, Woods Hole Oceanographic Institution, Room 201-203 Shiverick/ MS #36, Woods Hole, MA 02543, dketten@whoi.edu

Darlene's research focuses on: 1) Hearing mechanisms of aquatic organisms, 2) Evolution of marine mammals, and 3) Three-dimensional modeling and biomedical imaging of inner ears.

Her work is divided between underwater hearing mechanisms and developing functional imaging techniques for assessing ear trauma and disease. In addition to basic research training in marine biology and hearing sciences, she completed specialty accreditation courses in Otopathology, Neuroradiology, and Forensic Pathology. She is a lecturer on inner ear imaging and anatomy for specialty training courses for the Amer. Med. Assoc.-Head and Neck Surgery division. She is an active member of the ASA Bioacoustics Technical Committee and serves on advisory panels on hearing, bioacoustics, acoustic trauma, and marine mammal legislation for the National Institutes of Health, National Institutes of Deafness and Communication Disorders, NIH Consensus Development Conferences, the National Academy of Sciences Committee on Hearing and Bioacoustics, the Marine Mammal Commission, Minerals Management Service, Office of Naval Research, NATO, and NMFS.

D. Ann Pabst

See biosketch above.

Tracy Romano

Associate Research Scientist, Texas A&M University, Scripps Research Institute, and The Navy Marine Mammal Program (SPAWAR Systems Center), Scripps Research Institute, SBR-12, Dept. of Cell Biology, 10550 N. Torrey Pines Road, La Jolla, CA 92037, tromano@scripps.edu

Tracy investigates the nervous and immune systems of cetaceans. One of the major goals of her research is to determine how stress affects cetacean health.

Behavior

Peter Corkeron

Lecturer in Environmental Science, School of Tropical Environment Studies & Geography, TESAG, James Cook University, Townsville, QLD 4811, Australia, peter.corkeron@jcu.edu.au

"My research interests are quite varied, but the general thrust of my work has been to understand the way in which environmental (including anthropogenic) factors influence the behaviour of marine mammals. I also teach undergraduate & graduate students at James Cook University."

Paul Forestell

Associate Professor of Psychology, and Coordinator, Psychobiology Program, Southampton College of Long Island University, Southampton, New York, and Pacific Whale Foundation, Kihei, Hawaii, Social Science Division, Southampton College of Long Island University, Southampton, NY 11968, pforestell@southampton.liunet.edu

"My research involves social behavior of spinner dolphins in Hawaii; migratory patterns of southern hemisphere humpback whales; social interactions between tucuxi and bottlenose dolphins in Costa Rica; changes in seal populations near Long Island, New York; as well as the nature of human attraction to marine mammals."

Roger L. Gentry

Acoustic Team Coordinator, National Marine Fisheries Service, NOAA, NMFS Office of Protected Resources, 1315 East-West Hwy, SSMC3, Silver Spring, MD 20910

"My early research was in hearing, vision, and learning in captive pinnipeds. However, most of my subsequent research was on social behavior and foraging ecology in otariids (I helped pioneer the Time Depth recorder and edited a book on maternal strategies). My behavioral work involves long-term observation of undisturbed animals, field experiments on behavior, and behavioral experiments using captives (summarized in a recent book on northern fur seals). I am presently building a program on acoustics and the effects of noise on marine mammals. This is mostly policy, but it includes a program of research."

Bruce Mate

Professor, Oregon State University, Mark O. Hatfield Marine Science Center, 2030 S. Marine Science Drive, Newport, OR, bruce.mate@hmsc.orst.edu

Bruce's projects and specialties include whale and dolphin migration, habitats, and behavior. He is also involved with the development of U.S. and international marine mammal protection laws.

Douglas P Nowacek

Post-doctoral researcher, Mote Marine Laboratory and Woods Hole Oceanographic Institution, 1600 Ken Thompson Parkway, Sarasota, FL 34236, dnowacek@whoi.edu

Doug did his PhD research on the detailed foraging behavior, sound use and ecology of *Tursiops truncatus*. He pioneered the use of a tethered airship for video observations and recording of dolphin behavior, and in collaboration with Woods Hole Oceanographic Institution Applied Ocean Physics and Engineering department has developed an acoustic data logger to record biosonar and other sounds from free-ranging animals.

Cognition and Psychophysics

Dave Kastak

Post-doctoral researcher, Institute of Marine Sciences, University of California, Santa Cruz, Long Marine Lab, 100 Shaffer Road, Santa Cruz, CA 95060, kastak@cats.ucsc.edu

Dave's research interests include pinniped sensory systems, behavior, learning and cognition.

Ron Shusterman

Research Marine Biologist in the Institute of Marine Sciences, and Adjunct Professor of Ocean Sciences, at the University of California at Santa Cruz, Long Marine Lab, 100 Shaffer Road, Santa Cruz, CA 95064, rjschust@cats.ucsc.edu

For the past 35 years, Ron's major research interests have been in sensory systems, perception, cognition and communication of marine mammals. Ron's field work has been done on the communicative behavior of California sea lions and harbor seals off the coast of California. In the lab, he has used behavioral techniques to study perception and cognition, and he is currently researching the effects of noise on hearing in pinnipeds.

Conservation

Leah Gerber

Postdoctoral Fellow, National Center for Ecological Analysis and Synthesis, UCSB, 735 State St., Ste. 300, Santa Barbara, CA 93101

Leah is broadly interested in conservation biology and her particular research focus is on marine mammal population biology and marine protected areas. Her current position at

NCEAS/UCSB has involved research and teaching related to Endangered Species Recovery Plans and marine reserve design.

William G. Gilmartin

Director or Research, Hawaii Wildlife Fund and Chair, Hawaiian Monk Seal Recovery Team, jarman@aloha.net

Bill is currently conducting research and population monitoring of the Hawaiian monk seal at Midway Islands. Bill has worked on Hawaiian monk seal recovery since 1978.

Christina Lockyer

Senior scientist, Danish Institute for Fisheries Research, Charlottenlund Slot, Denmark, 2920 Charlottenlund, Denmark, chl@dfu.min.dk

Christina's main research area is cetacean ecology and life history. Specialist interests include age determination, and bioenergetics of feeding and growth. Her current research focuses on the investigation of harbour porpoise interactions with fisheries (bottom-set gillnet bycatches) in the North Sea and Inner Danish Waters, and cetacean tooth studies.

Nina Young

Director of Marine Wildlife Conservation, Center for Marine Conservation, 1725 DeSales St. NW, Washington, DC 20036, nyoung@dccmc.org

Ms. Young is Director of Marine Wildlife Conservation at the Center for Marine Conservation where she leads the Center's efforts to conserve marine mammals. She has been instrumental in negotiating and drafting amendments to the Marine Mammal Protection Act and international treaties to eliminate the accidental entanglement and death of dolphins, whales, and other marine mammals in commercial fishing operations. Ms. Young has participated in government research cruises to assess marine mammal populations along the Atlantic coast, develop field protocols and techniques to autopsy dead marine mammals and rescue live stranded marine mammals. Recently, she participated in efforts to remove six tons of submerged derelict fishing gear from coral reefs habitats of the endangered Hawaiian monk seal.. Her work in marine mammalogy includes population assessment and physiological, anatomical, and behavioral studies. Her publications include papers on whales, dolphins, and sea lions, and reports on organic and trace element contaminants found in bivalves in U.S. coastal areas. Ms. Young is a member of the Society for Marine Mammalogy and the International Association for Aquatic Animal Medicine, and she holds an M.S. degree (Major: Physiology; Minor: Zoology and Veterinary Science) from the University of Florida.

Ecology

Bud Antonelis

Chief, Protected Species Investigation, NOAA, National Marine Fisheries Service, SWFSC, Honolulu Laboratory, 2570 Dole Street, Honolulu, HI 96822, bud.antonelis@noaa.gov

"My primary research interests have involved the investigation of pinniped foraging ecology in arctic, subarctic, temperate and tropical environments. My most recent work has focused on the leadership of a program which is dedicated to the conservation and protection of critically endangered Hawaiian monk seal."

Sascha Hooker

Research fellow, Pacific Whale Foundation, 101 N. Kihei Rd, Kihei, HI 96753, USA shooker@is2.dal.ca, Dept Biology, Dalhousie University, Halifax, NS B3H 4J1, Canada

"My PhD research focused on habitat use of northern bottlenose whales in the Gully on the east coast of Canada, incorporating studies of diet, distribution, diving behaviour, ranging behaviour, and acoustics. I am currently working with Pacific Whale Foundation on studies of diving behaviour, population assessment and behaviour of several odontocete species around Hawaii."

Charles "Stormy" Mayo

Senior Scientist, Center for Coastal Studies, Box 1036 Provincetown, MA 02657, stormym33@pobox.com

I have an M.S. in the physiology of the man-of-war fish, *Nomeus gronovii* and a Ph.D. on the larval development of 7 species of scombrid (tunas and mackerels) fishes reared in captivity. My interests are centered on midwater ecology with emphasis on the zooplankton. For the past 15 years I have been studying the North Atlantic right whale in the waters off Cape Cod, MA. Recently I have focused on understanding the relationship between the foraging activities of the right whales and their calanoid copepod prey. Studies have produced information on the caloric intake, feeding thresholds, filtration efficiency, small-scale foraging strategies, definition of suitable habitat, and formation of the copepod patches. Given the bleak condition of the right whale population in the North Atlantic I have been particularly interested in the management and policy implications of our work and have directed our studies toward developing information directly useful in the conservation of the critical habitats on which the whales depend. I also am part of the Center for Coastal Studies disentanglement team that works to free large whales from fishing gear along the east coast of North America.

Dan Odell

See biosketch above

Glenn VanBlaricom

Professor, University of Washington, and Washington Cooperative Fish and Wildlife Research Unit, Biological Resources Division, U.S. Geological Survey, School of Fisheries, Box 357980, University of Washington, Seattle, WA 98195, glennvb@fish.washington.edu

Glenn received B.S. degrees in Zoology and Oceanography from the University of Washington and a Ph.D in Biological Oceanography from the Scripps Institution of Oceanography. He did undergraduate research on the efficiency of zooplankton sampling devices before becoming interested in coastal benthic ecosystem dynamics as a graduate student. Glenn's primary research interests are the community ecology of sea otters, the population ecology of marine mammals, marine mammal-fishery interactions and the effects of disturbances, both natural and anthropogenic, on marine wildlife and their ecosystems.

Molecular Genetics/Ecology

Edward O. Keith

Associate Professor, Oceanographic Center and Farquhar Center for Undergraduate Education, Nova Southeastern University, 8000 N. Ocean Drive, Dania Beach, FL 33004, edwardok@ocean.nova.edu

Ed's research interests include the physiological ecology of marine mammals, evolution and systematics of marine mammals, and the computer simulation of complex biological systems.

Policy and management

Gene Nitta

Marine Resource Management Specialist, National Marine Fisheries Service, Office of Protected Resources, Permits Division, 1315 East West Hwy, Room 13805, Silver Spring, MD 20910, Gene.Nitta@noaa.gov

"My primary responsibilities include marine mammal and endangered species management through the permitting and regulatory processes of the MMPA and ESA. I am also involved in public outreach and development of educational and informational materials focusing on public interactions with marine mammals."

John Reynolds

See biosketch above

Population Dynamics

Phil Clapham

Research Biologist, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543, phillip.clapham@noaa.gov

"Direct studies of large whales in the North Atlantic and elsewhere for the purpose of providing information relating to the management and conservation of populations. Primary species studied are humpback and northern right whales. Involved in population dynamics, genetics, risk assessment and behavioral ecology."

Doug DeMaster

See biosketch above

Ian Stirling

Senior Research Scientist, Canadian Wildlife Service, Adjunct Professor, University of Alberta, Edmonton, 5320 122nd Street, Edmonton, AB, Canada T6H3S5, Ian.Stirling@ec.gc.ca

Ian's research is on the ecology, behavior, and population dynamics of polar bears and their role in the arctic marine ecosystem- particularly in relation to seals, sea ice, and importance of polygnas. He also examines the behavior and ecology of polar (arctic and antarctic) breeding ice seals and southern fur seals.

Toxicology and Pathology

Michael Moore

Research Specialist, Biology Dept Woods Hole Oceanographic Institution, MS 33 WHOI Woods Hole, MA 02543, mmoore@whoi.edu

Michael is examining marine vertebrate health and disease, with a focus on the issues impacting the conservation of large whale species in terms of nutrition and contaminants.

Peter Ross

Research Scientist (wildlife toxicologist), Institute of Ocean Sciences, P.O. Box 6000, Sidney BC, V8L 4B2, Canada, rosspe@pac.dfo-mpo.gc.ca

Peter's research involves measuring the levels and patterns of toxic chemicals in marine mammals, and assessing the effects of these on immune and endocrine function. He is using harbour seals as sentinels of ecosystem health, and measures levels of toxic chemicals in harbour seals, harbour porpoises, and killer whales.

Veterinary Medicine

Frances Gulland

Director of Veterinary Science, The Marine Mammal Center, 1065 Fort Cronkhite, Marin Headlands, Sausalito, CA 94965, gullandf@tmmc.org

Frances studies the impact of diseases on marine mammal populations, currently focusing on pinnipeds of California. Her work is a combination of clinical veterinary medicine, pathology and research into the pathogenesis and epidemiology of diseases in marine mammals.

V. 9:30-10:00 STUDENT AFFAIRS

SMM and YOU

Ed Keith

SMM Education Committee

Brenda Jensen

Student Member-at-Large

VI. 10:00 Adjourn

The following questions are provided to you as a guideline for the discussion issues you might raise during specialty discussion sessions. These professionals are here to talk with you and answer your questions, so be prepared to ask questions and take advantage of their willingness to help!

- 1) Aside from the degree, what are some of the the basic skills and qualities that students should have in order to be successful in your job, either in the office or in the field?
- 2) What general advice can you give for students and young professionals looking to get their start in this field?
- 3) What percent of your time do you spend in field? in the lab? writing papers? writing proposals?
- 4) How did you first get involved in marine mammalogy?
- 5) How interdisciplinary is your field?
- 6) What is the role of collaboration with other scientists in your day-to-day science?
- 7) How important is publishing?
- 8) Is there a common misconception about jobs in your field?

- 9) Based on where you see this field heading, where should one look for employment in this field?
- 10) If you could go back and take one more course in graduate school, what would it be?
- 11) In biology, there is always more exploration to be done. Assuming unlimited resources, toward what would you like to see more effort focused in the future?
- 12) Were there any scientific publications (or work done by an individual) that you have found particularly influential in your career?
- 13) How would you prefer to be approached by a potential graduate student or post-doc?
- 14) To what other professional societies do you belong/scientific meetings do you attend?
- 15) Is there currently a "hot issue" in your field that you could explain?
- 16) Is there a common misconception about your job you would like to set straight?
- 17) Can you describe a "typical" day in your job (if there is such a thing?)