

## Lori Polasek

University of Alaska Fairbanks and Alaska Sealife Center  
School of Fisheries and Ocean Sciences

### EDUCATION

- 2003 Ph.D.: Wildlife and Fisheries Sciences. Dissertation: Spatial heterogeneity of aerobic and glycolytic enzyme activities and myoglobin concentration in the swimming muscles of harbor seals (*Phoca vitulina*). Texas A&M University, College Station, TX 77843.
- 1999 B.S.: Marine Biology. Texas A&M University, Galveston, TX 77551.
- 1990 High School Diploma, with Honors. Principia. St Luis, MO 63131-1099

### RESEARCH

- Current **Research assistant professor** for the University of Alaska Fairbanks. Research position at the Alaska SeaLife Center reviewing research proposals, updating permits and conducting and managing studies on the captive harbor seals maintained at the SeaLife center. Alaska SeaLife Center, Seward, AK.
- 2002-2004 **Bowhead whale aging studies** in Barrow, AK. Post-doctorate position working with native subsistence hunters to collect tissue samples for aging studies. Goals of this project include determining variations in muscle metabolic status, enzyme activity, lipid storage, and myoglobin concentration among age groups and sexes of whales. These data will provide a new understanding of how this mammal has been able to achieve ages in excess of 200 years, and suggest new directions in the study of mammalian aging in general. University of Alaska, Fairbanks, AK.
- 1999-2002 **Harbor seal research** in Prince Williams Sound, AK. Worked with native subsistence hunters to collect muscle samples for metabolic analysis. Used enzyme analysis and spectrophotometric techniques to analyze tissue samples for a doctoral thesis. Texas A&M University, Galveston, TX.
- 2002 **Marine Biology Coordinator for Talented and Gifted camp.** Coordinated and lead a two-week camp on Marine Biology. Lectured, coordinated visiting lecturers, conducted beach surveys, diversity studies, and other research in Marine Biology. Community Outreach, Texas A&M University, Galveston, TX.
- 2000-2002 **Laboratory Manager.** Maintained freezer, water purifier, MSDS and lab safety. Also taught equipment use and protocol to new students. Laboratory for Aquatic Animal Performance, Texas A&M University, Galveston, TX.
- 2001 **Field guide for “Sea Otters of Alaska,”** an Earthwatch Institute project based in Cordova, AK. Conducted surveys, photo identification, collected feeding ecology data, operated small boats, and maintained and supervised a field camp. Analyzed data and photo identification from August to May. Earthwatch Institute, Maynard, MA.
- 1998 **Field Assistant.** Participated in a Grey whale research project in Baja. Aided in visual and acoustic recordings, and recorded theodolite data to assess tourist interactions with the whales. Texas A&M University, Galveston, TX.
- 1996-1997 **Assistant Marine Instrumentation Specialist.** Confirmed inventory for annual audit, maintained department’s small boat collection, documented and logged department field trips. Texas A&M University, Galveston, TX.

- 1997 **Graduate Research.** Collected and analyzed muscle tissue samples as part of a population study on harp seals in Quebec, Canada. Texas A&M University, Galveston, TX.
- 1996 **Research Technician.** Analyzed Weddell seal muscle tissue for enzyme and myoglobin content. Texas A&M University, Galveston, TX.
- 1996 **Graduate Research.** Gathered tissue samples from cetaceans and pinnipeds in South Africa for myoglobin analysis. Utilized a spectrophotometer for tissue analysis. Texas A&M University, Galveston, TX.
- 1995-1996 **Assistant Museum Curator.** Aided in the recovery of specimens damaged from a flood. Preserved reptile specimens, catalogued rodents, and organized fish collections. Texas A&M University, College Station, TX.
- 1995 **Field Assistant.** Assisted with a Steller Sea Lion project in Prince Williams Sound, AK full time. Aided in blood and milk collection, morphometrics, and behavioral observations. Texas A&M University, Galveston, TX.
- 1994-1995 **Independent Research.** Studied the reproductivity of Medaka. Texas A&M University, Galveston, TX.
- 1993-1994 **Undergraduate Research Assistant.** Utilized GIS software and MAPIX to analyze satellite recorded migratory movement of spotted seals. Digitized seal positions and related environmental features. Texas A&M University, Galveston, TX.
- 1993-1994 **Undergraduate Research Assistant.** Assisted with bottlenose dolphin studies in the Gulf of Mexico. Performed necropsies and studies skull morphology. Texas A&M University, Galveston, TX.

## TEACHING

- 2006 **Graduate Seminar.** Taught the Elocution of Science. Discussed current topics in marine science and formulated questions for an upcoming Science Bowl.
- 2004-Current **Elderhostel.** Presented current research on marine mammals to Elderhostel groups visiting the Alaska SeaLife Center. Seward, AK
- 1998-2001 **Field Guide.** Guided marsh tours in the Galveston area, conducted seines for collection and identification of local fishes and invertebrates. Guided boat tours for Galveston Bay, conducted trawls for collection and identification of local fishes and invertebrates. Texas A&M University, Galveston, TX.
- 1996-2001 **Teaching Assistant for the laboratory portion of Comparative Physiology.** Laboratory topics included microcirculation, action potentials, blood glucose, and vectocardiology. Texas A&M University, Galveston, TX.
- 1998-2001 **Lectured to visiting Elderhostel groups** on both cetacean and pinniped identification and ecology. Elder Hostel, Galveston, TX.
- 1998 **Teaching Assistant for the laboratory portion of Cellular Biology.** Laboratory topics included cell fractionation, enzyme assays, and membrane permeability. Texas A&M University, Galveston, TX.
- 1996-1998 **Teaching Assistant for the laboratory portion of Marine Ecology.** Laboratory topics included oceanography, population ecology, and community ecology. Texas A&M University, Galveston, TX 77551.
- 1997-1998 **Developed and implemented a Marine Ecology Class** available for Continuing Education credit and for groups outside of the Texas A&M System. Class provided students with field experience and hands on laboratory exercises in a Texas marine environment. Community Outreach, Texas A&M University, Galveston.

1997-1998 **Teaching Assistant for the laboratory portion of Developmental Biology.**  
Laboratory topics included gametogenesis, embryology, and early development. Texas A&M University, TX.

## HONORS AND AWARDS

2006 University of Alaska Foundation, Biochemistry Equipment, \$25,000  
2006 One of Top 5 Cited Articles in 2005 for Comparative Biochemistry and Physiology  
2006 Nominated for Marquis Who's who  
2004 BRIN Seed Grant, Aging in bowhead whales, \$20,000  
2003 EPSCOR Seed Grant, Aging in bowhead whales, \$20,000  
2003 EPSCOR Equipment Grant, \$16,000  
2001 NOAA-NMFS, Harbor seal recovery and health, \$18,900 (with R. Davis)  
2001 Research Advisory Committee Presentation Travel Award, \$400  
2000 NOAA-NMFS, Harbor seal recovery and health, \$87,400 (with R. Davis)  
2000 Texas A&M University Office of Graduate Studies Mini-Grant, \$500  
2000 Research Management Office Presentation Travel Award, \$550  
1999 Graduate Student Association Research Award, \$500  
1998 Best pre-doctoral poster at the World Marine Mammal Science conference, \$150  
1997 Graduate Program Enhancement Award, \$800  
1997 Department of Marine Biology Travel Award, \$500  
1996 Department of Marine Biology Research Award, \$500

## HONOR SOCIETY

1998-Present Awarded membership in the Gamma Sigma Delta society in recognition of high scholarship and outstanding achievement.

## PUBLICATIONS

2006 **Polasek, L.**, Dickson, K. and Davis, R.W. 2006. Metabolic indicators in the muscle tissue of harbor seals (*Phoca vitulina*). *Am J Physiol Regul Integr Comp Physiol.* 290(6), R1720-1727.  
2004 Davis, R.W., **Polasek, L.**, Watson, R., Fuson, A., Williams, T.M. and Kanatous, S.B. The diving paradox: New insights into the role of the dive response in air-breathing vertebrates. *Comp Biochem and Physiol. A Mol Integr Physiol.* 138(3), 263-268.  
2003 Fuson, A., Kanatous, S., **Polasek, L.**, and Davis, R. Aerobic and glycolic enzyme activities and mitochondrial densities in the splenic organs of harbor seals (*Phoca vitulina*). *J. Exp. Biol.* 206, 4139-4154.  
2003 **Polasek, L.** Spatial heterogeneity of aerobic and glycolytic enzyme activities and myoglobin concentration in the swimming muscles of harbor seals (*Phoca vitulina*). Ph.D. Dissertation, Texas A&M University, College Station, TX.  
2002 Kanatous, S.B., R.W. Davis, R. Watson, **L. Polasek**, T.M. Williams, X. Fu and O. Mathieu Costello. 2002. Aerobic capacities in the skeletal muscles of Weddell seals: key to longer dive durations? *J. Exp. Biol.* 250, 3601-3608.  
2001 **Polasek, L** and Davis, R. 2001. Heterogeneity of myoglobin distribution in the locomotory muscles of five cetacean species. *J. Exp. Biol.* 204, 209-215.

## PRESENTATIONS and POSTERS

- 2007 **Marine Science Symposium.** Growth and body condition of captive harbor seals on a low lipid diet. Poster presentation. Anchorage, AK
- 2006 **Honors Thesis Project.** Allard MK, JR Carpenter, S Atkinson and **L Polasek**. 2006. A comparison of the impact of environmental stressors on blood parameters of captive harbor seals (*Phoca vitulina*). Honor's Thesis project with the Dept. of Animal Sciences, University of Rhode Island, Kingston.
- 2006 **Student Research Symposium.** Fiack C, JR Carpenter, S Atkinson and **L Polasek**. 2006. Growth and dry matter intake patterns of captive harbor seals from weaning to 18 months of age. Abstract # 74, In: Proceedings 2006 College of Tropical Agriculture and Human Resources (CTAHR) Student Research Symposium, Univ. of Hawaii at Manoa, Honolulu, p. 48.
- 2006 **Student Research Symposium.** Sasaki KS, JR Carpenter, S Atkinson and **L Polasek**. 2006. Variations in nutrient intake and blood parameters in growing harbor seals during the winter and summer seasons. Abstract # 73, In: Proceedings 2006 College of Tropical Agriculture and Human Resources (CTAHR) Student Research Symposium, Univ. of HI at Manoa, Honolulu, p. 47.
- 2006 **Alaska Sealife Center Colloquium**, Seward, AK. Oral presentation "Captive harbor seal research."
- 2005 **Marine Mammal Society** Biannual Meeting, San Diego, CA. Poster presentation "Health and condition of captive harbor seal pups on high and low fat diets."
- 2005 **Alaska Sealife Center Colloquium**, Seward, AK. Oral presentation "Captive harbor seal research."
- 2004 **Alaska SeaLife Center Colloquium**, Seward, AK. Spoken presentation "Health and Condition of Resident Harbor Seals."
- 2001 **Marine Mammal Society** Biannual Meeting, Vancouver, BC. Poster presentation "Harbor seal muscle tissue is geared for aerobic lipid metabolism."
- 1998 **Marine Mammal Society** Biannual Meeting, Monaco. Poster presentation "Myoglobin concentrations in marine mammals."
- 1997 **Experimental Biology meeting**, New Orleans. Poster presentation "Heterogeneity of myoglobin in marine mammals."

## PUBLIC OUTREACH

- 2006 **51% and National Public Radio** Audio Diary. Three part series on women in science.
- 2005-2006 **Ocean Science Bowl.** Provided questions and judging for the regional Ocean Science Bowl.
- 2005-2006 **Sea Train.** Participated in a program that promotes marine awareness and education by bringing fifth graders from Anchorage to the Alaska SeaLife Center via the train.

## COMMITTEES

- 2006-Current **PARKS.** One of the founding members of PARKS (Parents Advocating Recreational Kids Stuff). The committee raises money for community enrichment for children in Seward.
- 2005-Current **Graduate Committee Member.** Committee member for five master's students studying a variety of topics in marine science.

- 1999-2002 **President of the Graduate Student Association.** Duties included leading monthly meetings, attending faculty meetings, coordinating graduate student activities, and facilitating communication between graduate students and faculty. Texas A&M University, Galveston, TX.
- 2001-2002 **Participated on several Search Committees** to determine new hires for the Marine Biology Department. Texas A&M University, Galveston, TX.
- 2000-2001 **Group Visit Coordinator.** Coordinated a graduate student program for visiting Texas schools. The visiting schools participated in ecological tours of the marsh and bay. Texas A&M University, Galveston, TX.
- 1998-1999 **Participated on the Awards Committee** to allocate awards for research and teaching excellence. Texas A&M University, Galveston, TX.
- 1998-1999 **Vice President of the Graduate Student Association.** Duties included attending the Academic and Faculty meetings, fund raising, and coordinating intramural sports. Texas A&M University, Galveston, TX.

## **REFEREE**

- 2001- Current Medical Science Monitor  
 2005 - Current North Pacific Research Board Proposal Peer Review  
 2005 - Current Exxon Valdez Oil Spill Trustee Council Peer Review

## **CERTIFICATES/TRAINING**

- 2006- Current Hazardous Material Transportation Certified  
 2006 - Current First Aid and CPR Certified  
 2005 - Current AMSEA Water Wise and Boat Safety Certified

## **VOLUNTEER WORK**

- 2006-Current PARKS. Parents Advocating Recreational Kids Stuff volunteer  
 2003-2004 Big sister for Big Brothers and Big Sisters  
 1999-2001 Science Fair Judge for local schools.  
 1997-1998 Lectured at local schools. Presented half-day interactive lectures on marine mammals to local middle and high school.  
 1993-1994 Texas Marine Mammal Stranding Network volunteer. Aided in dolphin rescue and research in the Gulf of Mexico.