

ALEXANDER CONRAD

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EDUCATION

- Florida Atlantic University**, MS Ocean Engineering, 2010
Woods Hole Oceanographic Institution, Advisor: Dr. George V. Frisk
Thesis: "Determination of sea bottom properties from spectral acoustic data"
Developed theoretical method algebraically, modeled fields, then compared to data.
- Northeastern University**, BS Physics, Minor: Marine Studies, *Summa Cum Laude* 2007
Experimented with and modeled microwave propagation through metamaterials with negative refraction indices, working for Dr. Srinivas Sridhar
- ESIC Business & Marketing School**, International MBA, Madrid, Spain 2011

WORK & RESEARCH EXPERIENCE

- Greeneridge Sciences Inc.**, Santa Barbara, CA 2011-Present
Research Engineer

Working largely independently for a small company requires discipline, self-motivation, and the flexibility to perform many rolls including:

- Modeler:
 - Aided in the development and testing in Greeneridge's three dimensional acoustic propagation modeling software estimating transmission loss, and exposure level on simulated animats based on the latest NOAA Guidelines.
 - Developed simple SPL vs. Range models based on acoustic recordings of vessels in the Canadian Arctic.
- Acoustic analyst:
 - Worked closely with biologist, Dr. Susanna Blackwell, to design and implement Matlab software to automatically detect narwhal clicks/buzzes from tag data.
 - Wrote and maintained custom Matlab software used by manual analysts to detect, identify, and localize whale calls.
 - Performed comprehensive frequency and level analysis of underwater acoustic data from vessels and seismic airguns for the purposes of mitigating effects on narwhals, beluga, and bowhead whales.
- Field technician:
 - Prepared, deployed, calibrated and retrieved a multitude of acoustic recorders in varied locations such as the Beaufort Sea, Milne Inlet, Barkley Sound, and Hawaii for purposes including the assessment of effects of industrial noise on fish, bowhead whales, narwhals, and coral reefs.
 - Developed and enacted QA/QC system for the preparation, testing, and deployment of field equipment.
 - Improved firmware of a field calibration embedded microcontroller in C.
- Technical Communicator:
 - Managed the manual analysis team, articulating the project goals and relevance while addressing the analysts' concerns and preferences on the software operation for improved workflow.
 - Frequently presented data in innovative ways, plotting in Matlab including mapping with the `m_map` toolbox.
 - Presented at 8th International DCLDE Workshop 2018 in Paris, France.
 - Wrote and reviewed internal and client focused reports and journal articles.
 - Updated and maintained company website.

- Santa Barbara Bicycle Coalition**, Santa Barbara, CA 2011-Present
Website Front End Engineer (2020)
- Overhauled the Coalition’s website for usability and the addition of special pandemic related programs.
- League Certified Instructor (2017–2020)*
- Taught bicycle skills and safety at local elementary schools and camps.
- Volunteer (2011-Present)*
- Co-organized and participated in various volunteer events such as a special rides, light distributions and bike builds for donations.

- Crew Aboard Tallships**, Vessels: HMS Bounty, Lady Washington, 2007-2008
 Kalmar Nyckel, Shenandoah, and Alabama
- Engineer*
- Responsible for repair and maintenance of shipboard electrical, mechanical, and plumbing systems
 - Monitored and maintained logs of all shipboard systems
- Deckhand*
- Taught celestial navigation to passengers and crew
 - Instructed children about navigation and the lives of 18th century sailors
 - Sailed the waters surrounding North and Central America, and Galapagos Islands.

- Student Conservation Association**, Sioux City, IA 2006
Americorps Intern
- Fire Effects Monitoring for the Bureau of Indian Affairs in the Great Plains Region

- SEA Semester**, Woods Hole, MA, SSV Corwith Cramer 2006
Student
- Studied and reported on current through the Caribbean Sea using ADCP as well as calculations of Geostrophic Current with CTD
 - Participated in CTD casts, net tows, species identification, titration, and hydrocasts for the research of other students

- EnSCO Inc.**, Springfield, VA 2005
6-Month Co-op Intern
- Assisted in the design and execution of testing of a magnetometer
 - Organized and presented data collected

SKILLS

Programing: Expert: Matlab Proficient: Python, Joomla Practiced: CSS, html, C, C++
Acoustic Modeling & Analysis: Acoustics Toolbox (Kraken & Bellhop), Ishmael, Triton
Languages: English: Native Spanish: Upper Intermediate

PROFESSIONAL SOCIETIES

Acoustical Society of America, Society for Marine Mammalogy

PUBLICATIONS

Thode, A.M., S.B. Blackwell, **A.S. Conrad**, K.H. Kim, T. Marques, L. Thomas, C.S. Oedekoven, D. Harris and K. Broker. “Roaring and repetition: How bowhead whales adjust their call density and source level (Lombard effect) in the presence of natural and seismic airgun survey noise. **J. Acoust. Soc. Am.** 147: 2061-2080. (2020)

Blackwell, S.B., O.M. Tervo, **A.S. Conrad**, M.H.S. Sinding, R.G. Hansen, S. Ditlevsen and M.P. Heide-Jørgensen. “Spatial and temporal patterns of sound production in East Greenland narwhals.” **PLOS One** 13(6):e0198295. (2018)

Blackwell, S.B., C.S. Nations, A.M. Thode, M.E. Kauffman, **A.S. Conrad**, R.G. Norman and K.H. Kim. “Effects of tones associated with drilling activities on bowhead whale calling rates.” **PLOS One** 12(11): e0188459. (2017)

Thode, A.M., S.B. Blackwell, **A.S. Conrad**, K.H. Kim, A.M. Macrander. "Decadal-scale frequency shift of migrating bowhead whale calls in the shallow Beaufort Sea." **J. Acoust. Soc. Am.** 142:1482–1502. (2017)

Thode, A.M., S.B. Blackwell, K.D. Seger, **A.S. Conrad**, K.H. Kim and A.M. Macrander. "Source level and calling depth distributions of migrating bowhead whale calls in the shallow Beaufort Sea," **J. Acoust. Soc. Am.** 140, 4288-4297. (2016)

OUTSIDE ACTIVITIES

- Participate in the local ultimate Frisbee™ community 2011-Present
 - Played on the local competitive club team, Santa Barbara Sundowners
 - Produced the Beach Century Game event, a yearly all-day ultimate game to 100 pts
 - Organized a twice-weekly pick-up game