

# SAMUEL STETSON URMY

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## Education

- 2012 – Present: PhD, Marine and Atmospheric Sciences, SUNY Stony Brook, Stony Brook, NY  
Advisor: Dr. Joseph D. Warren
- 2009 – 2012: MS, Aquatic and Fishery Sciences, University of Washington, Seattle, WA  
*Temporal variability and bio-physical coupling in the pelagic fauna of Monterey Bay.*  
Advisor: Dr. John K. Horne
- 2004 – 2008: BS, Earth Systems, Oceans Track, Stanford University, Stanford, CA  
Advisor: Dr. Fiorenza Micheli
- 2000 – 2004: Brookline High School, Brookline, MA

## Publications

- Urmy, S.S.** and J.D. Warren. *Indirect calibration of hull-mounted ADCPs to measure Antarctic krill biomass: procedures, limitations, and potential benefits.* Submitted, Methods in Oceanography.
- Parker-Stetter, S.L., J.K. Horne, **S.S. Urmy**, R.A. Heintz, L.B. Eisner, E.V. Farley. *Vertical distribution of age-0 pollock during late summer: biophysical coupling or ontogenic shift?* Submitted, Marine and Coastal Fisheries.
- Parker-Stetter, S.L., **S.S. Urmy**, J.K. Horne, L. Eisner, E. Farley. *Factors affecting summer distributions of Bering Sea forage fish species: assessing competing hypotheses.* Submitted, Deep Sea Research II.
- Urmy, S.S.**, J.K. Horne, D.H. Barbee (2012). *Measuring the vertical distributional variability of pelagic fauna in Monterey Bay.* ICES Journal of Marine Science 69 (2), 184-196.
- Horne, J.K., **S.S. Urmy**, D.H. Barbee (2010). *Using sonar to describe temporal patterns of oceanic organisms from the MARS Observatory.* IEEE Oceans2010.

## Presentations (\* indicates speaker)

- Urmy, S.S.** \* *Animal movement in the field of desire: Theory and measurements for population-level movement models.* Workshop on movement ecology, Smithsonian Conservation Biology Institute, Front Royal, Virginia, September 2014.
- Urmy, S.S.**\* and J.D. Warren. *Indirect calibration of backscatter measurements from acoustic Doppler current profilers, with application to Antarctic krill biomass estimation.* ICES Working Group on Fisheries Acoustics Science and Technology, New Bedford, MA, May 2014.
- Urmy, S.S.**\* and J.D. Warren. *Model-based and in-situ observations of high-frequency (10s-100s kHz) acoustic scattering from multiple targets.* Acoustical Society of America,

Providence, RI, May 2014.

**Urmy, S.S.\*** *Deterministic behavior in a stochastic environment can yield animal trajectories with Lévy flight properties.* Stony Brook University School of Marine and Atmospheric Sciences Graduate Student Symposium, January 2012.

Parker-Stetter, S.L.,\* J.K. Horne, E. Farley, **S.S. Urmy**, L. Eisner. *Evolving perceptions of forage fish distributions in the SE Bering Sea.* Alaska Marine Science Symposium, Anchorage, AK, January 2012.

**Urmy, S.S.,\*** J.K. Horne, and D.H. Barbee. *Metrics to characterize vertical distributions of aquatic animals in large acoustic datasets.* Acoustical Society of America, Workshop on Acoustic Challenges in Aquatic Ecosystem Assessment, Seattle, WA, May 2011.

**Urmy, S.S.,\*** J.K. Horne, and D.H. Barbee. *Pelagic bio-physical coupling in Monterey Bay.* ICES Working Group on Fisheries Acoustics Science and Technology, Reykjavik, Iceland, May 2011.

**Urmy, S.S.,\*** J.K. Horne, and D.H. Barbee. *Temporal variability in the vertical distribution of pelagic animals in Monterey Bay.* School of Aquatic and Fishery Sciences Graduate Student Symposium, Seattle, WA, November 2010.

Horne, J.K., **S.S. Urmy,\*** and D.H. Barbee. *Using sonar to describe temporal patterns of oceanic organisms from the MARS Observatory,* IEEE Oceans 2010, Seattle, WA, September 2010.

**Urmy, S.S.,\*** J.K. Horne, and D.H. Barbee. *Temporally-indexed patterns of pelagic fauna in Monterey Bay.* ICES Working Group on Fisheries Acoustics Science and Technology, San Diego, CA, April 2010.

**Urmy, S.S.\*** *Monterey Bay midwater ecology: Long-term observations of the mesopelagic from the DEIMOS sonar observatory.* School of Aquatic and Fishery Sciences Graduate Student Symposium, Seattle, WA, November 2009.

#### Posters

**Urmy, S.S.,** J.K. Horne, D.H. Barbee, and R.B. Kreisberg. *A year in the life of Monterey Bay.* School of Aquatic and Fishery Sciences Graduate Student Symposium, Seattle, WA, November 2010.

**Urmy, S.S.,** J. McNally, J. Bartz, and R. Dubar. *The role of intra-island temperature variability at Palmyra Atoll in mass coral bleaching events.* American Geophysical Union Fall Meeting, San Francisco, CA, December 2008.

#### Teaching

**Field trip and computer lab on internal waves, for undergraduate Physical Oceanography class.** Planned and supervised field trip on R/V *Paumanok* to collect hydrographic data in Long Island Sound. Wrote and graded lab assignment based on analysis of this data. Stony Brook University, November 2014.

**Lecture on dimensional analysis.** Substitute lecture for undergraduate Physical Oceanography class. Stony Brook University, Fall 2013.

**Teaching Assistant, undergraduate Physical Oceanography.** Grading, office hours, supervised laboratory and field trips on university research vessel. Stony Brook University, Fall 2012.

**Lecture on Good Coding Style and Practice.** University of Washington graduate student R

seminar, May 2011.

**Lecture on Time Series Analysis.** University of Washington graduate student R seminar, April 2011.

#### At-Sea Experience

**Midwater Ecology Expedition, Monterey Bay, CA, August 2010**

One week midwater ecology and respirometry cruise aboard Monterey Bay Aquarium Research Institute ship R/V Western Flyer. Diagnostic troubleshooting of ship's scientific echosounder. Chief Scientist: Bruce Robison, <[robr@mbari.org](mailto:robr@mbari.org)>

**Gulf of the Farallones/Cordell Bank National Marine Sanctuary Survey, April 2008**

At-sea technician for Point Reyes Bird Observatory. Nine days aboard NOAA Ship McArthur II, mapping distribution of euphausiids with acoustics and Tucker trawls. Co-Chief Scientist: Jaime Jahnke, <[jjahncke@prbo.org](mailto:jjahncke@prbo.org)>

**Sea Education Association Cruise S-211, Honolulu to Line Islands, May-June 2007**

Research project relating coral health to water circulation at Christmas Island and Palmyra Atoll, using temperature loggers and visual surveys. Sail- handling, steering, basic navigation, and deployment of oceanographic instruments. Co-Chief Scientist: Rob Dunbar, <[dunbar@stanford.edu](mailto:dunbar@stanford.edu)>

#### Other Research Experience

**Radar Ornithology on Great Gull Island, NY, May-August 2014**

Designed and executed summer-long program of visual and radar observations of common tern foraging behavior. Also designed hydroacoustic surveys for forage fish. Ad-hoc radar engineering, avoidance of bird attacks.

**Responses of Lakes to the Rim Wildfire, Tuolumne Co., CA, September 2013-October 2014**

Acoustic and net sampling of zooplankton from Zodiac in alpine lakes in the wildfire burn zone, near and inside Yosemite National Park. Field Leader: Brant Allen, <[bcallen@ucdavis.edu](mailto:bcallen@ucdavis.edu)>

**Observations of Zooplankton Vertical Migration, Pocono Mts., PA, May 2013**

Acoustic and net sampling of zooplankton in small lakes. Co-PI: Joe Warren, <[joe.warren@stonybrook.edu](mailto:joe.warren@stonybrook.edu)>

**Research Assistant/Analyst, University of Washington, September 2011- June 2012**

Statistical modeling of juvenile pollock and forage fish distributions with respect to oceanography in the Eastern Bering Sea, as part of the North Pacific Research Board's Bering Sea Integrated Ecological Research Program. Supervisor: Sandra Parker-Stetter, <[slps@u.washington.edu](mailto:slps@u.washington.edu)>

**Hydroacoustic Data Processing, Stanford University, December 2007- June 2008**

Undergraduate research assistantship in Kevin Arrigo's Ocean Biogeochemistry Lab, Department of Geophysics. Organization and quality control of 5 years of northern California krill surveys using Echoview. Supervisor: Ben Saenz, <[blsaenz@stanford.edu](mailto:blsaenz@stanford.edu)>

**Intern, Penobscot East Resource Center, Stonington, ME, July-September 2007**

Researched history of commercial groundfishing in Maine. Compilation of National Marine Fisheries Service landings data, interviews of fishermen, and literature review. Preparation of written report. Supervisor: Aaron Dority, <[aaron@penobscoteast.org](mailto:aaron@penobscoteast.org)>

#### Volunteer Field Work

### **Effects of Geoduck Aquaculture, South Puget Sound, WA, 2010-2011**

Helped measure ecological impact of geoduck farming on benthic infauna and nearshore fish communities with core samples and beach seines. Kate McPeck, <[katemcpeek@gmail.com](mailto:katemcpeek@gmail.com)>

### **Acoustic and seabird surveys, San Juan Islands, WA, August 2011**

Aided labmate in 4-frequency acoustic survey of Cattle Pass in San Juan Is. from 13-foot Boston Whaler. Researcher: Emily Runnells, <[esr4@u.washington.edu](mailto:esr4@u.washington.edu)>

### **NOPP Tidal Energy Site Survey, Puget Sound, WA, June 2011**

One day aboard R/V Centennial, acoustic/trawl survey of proposed tidal turbine site at Admiralty Inlet in Puget Sound. PI: John Horne, <[jhorne@u.washington.edu](mailto:jhorne@u.washington.edu)>

### Public Outreach

Quoted in *The Innermost Orbit*, by Carmen Winant. Article on Rossby waves in urban surf-culture magazine *WAX*, Issue 2, Fall 2012.

Oceanographer's Choice. General-interest blog on ocean science and research, maintained since May 2009. Three posts selected as "Editor's Choices" by Seed Media Group's ResearchBlogging.org. <http://www.oceanographerschoice.com/>

Seeing ecosystems: pattern, chaos, and scale. November 2010. General-audience talk at Salon Fremont, Seattle, WA (<http://www.kaschaandjohn.com/salon/>).

### Open-Source Software

**StateSpace.jl**: Julia package implementing state-space models (i.e. Kalman, extended Kalman, and particle filters) for time series and dynamic systems. <https://github.com/EIOceanografo/StateSpace.jl>

**Echometrics**: Python package implementing a set of metrics to concisely describe the vertical distribution of acoustic backscatter in the water column. <https://github.com/EIOceanografo/EchoMetrics>

**PyCWT**: Python module for continuous wavelet and cross-wavelet transforms, with significance testing. <https://github.com/EIOceanografo/PyCWT>

### Awards and Honors

American Museum of Natural History Frank M. Chapman Memorial Grant (\$2,000)

Stony Brook University Graduate Council Fellowship (\$50,000)

Fisheries Interdisciplinary Network of Students Travel Award (\$150)

University of Washington Graduate School Fund for Excellence and Innovation Travel Award (\$1,000)

University of Washington Graduate and Professional Student Senate Travel Award (\$525)

Victor and Tamara Loosanof Endowed Fellowship (\$11,704)

Claire L. and Evelyn S. Egtvedt Fellowship (\$4,293)

H. Mason Keeler Endowment for Excellence (\$6,652)

Stanford School of Earth Sciences Dean's Award for Outstanding Academic Achievement

### Professional Groups and Societies

Acoustical Society of America  
American Fisheries Society  
Association for the Sciences of Limnology and Oceanography  
ICES Working Group on Fisheries Acoustics Science and Technology

#### Skills

Computing: Macintosh, Windows, Linux/Unix  
Programming: Python, R, and Julia, some Fortran, Matlab, and Java  
Statistics: Classical statistics, regression, spatio-temporal statistics, Bayesian analysis  
Myriax Echoview Fisheries Acoustics Software  
PADI Open-Water Diver certification  
Small-craft seamanship, piloting and navigation

#### Birth and Citizenship

January 3, 1986, Boston, MA, USA  
Languages: English, conversational French

#### Other Work Experience

Line Cook, Vutera New York, NY, 2009  
Line Cook, Little Giant New York, NY, 2008  
Technical Intern, Opera House Arts Stonington, ME, 2003 and 2007  
Line Cook/Caterer, Cachagua Store/A Moveable Feast Carmel Valley, CA, 2006-2007  
Camp counselor, Camp Timanous Raymond, ME, 2001-2006.