

Christopher Bassett

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Education

2013 **Ph.D.** Mechanical Engineering, University of Washington
2010 **M.S.** Mechanical Engineering, University of Washington
2007 **B.S.** Mechanical Engineering, University of Minnesota

Professional Experience

2013-pres. Postdoctoral Scholar, Department of Applied Ocean Physics & Engineering,
Woods Hole Oceanographic Institution
2009-2013 Graduate Research Assistant, Mechanical Engineering/Applied Physics Laboratory,
University of Washington
2008-2009 Teaching Assistant, Department of Physics, University of Minnesota

Research Interests

Passive acoustics

- Measurements and modeling of vessel noise
- Mapping and modeling coarse-grained sediment transport

Broadband acoustic scattering

- Scattering from rough surfaces
- Discrimination and quantification of targets near interfaces
- Acoustic remote sensing of sea ice and oil spills in/under sea ice
- Scattering from marine organisms
- Broadband scattering from suspended sediment

Marine hydrokinetic energy (MHK)

- Radiated noise measurements and acoustic impacts modeling of MHK devices
- Instrumentation for environmental impacts monitoring around MHK devices

Peer-Reviewed Publications

- J.1 Polayge, B., **C. Bassett**, M. Holt, J. Wood, and S. Barr (under revision). Estimated detection of tidal turbine operating noise in Admiralty Inlet, Puget Sound, Washington, *Journal of Oceanic Engineering*.
- J.2 **Bassett, C.**, A.C. Lavery, T. Maksym, and J. Wilkinson (2015). Laboratory measurements of high-frequency, acoustic broadband backscattering from sea ice and crude oil, *Journal of the Acoustical Society of America*, 137(1), EL32-EL38.
- J.3 **Bassett, C.**, J. Thomson, P. Dahl and B. Polayge (2014). Flow-noise and turbulence in two tidal channels, *Journal of the Acoustical Society of America*, 135(4), 1764-1774.

- J.4 **Bassett, C.**, J. Thomson, and B. Polayge (2013). Ambient noise and bed stress in a tidal channel, *Journal Geophysical Research – Oceans*, 118, 1-17.
- J.5 **Bassett, C.**, B. Polayge, J. Thomson, and M. Holt (2012). A vessel noise budget for Admiralty Inlet, Puget Sound, WA (USA), *Journal of the Acoustical Society of America*, 132(6), 3706-3719.

Conference Proceedings

- C.1 Wilkinson, J. T. Maksym, **C. Bassett**, A.C. Lavery, H. Singh, D. Chayes, P. Elosegui, P. Wadhams, K. Ulrich-Evers, and P. Jochmann. Experiments on the detection and movement of oil spilled under sea ice. *Proceedings of the HYDRALAB IV Joint User Meeting*. Lisbon, Portugal. July 2-4, 2014.
- C.2 **Bassett, C.**, A.C. Lavery, and T. Maksym. Laboratory measurements of high-frequency, broadband acoustic scattering of growing sea ice and oil beneath sea ice. *Proceedings of Meetings on Acoustics*. Providence, RI. May 5-9, 2014.
- C.3 **Bassett, C.**, B. Polayge, and J. Thomson, and K. Rhinefrank. Underwater noise measurements of a 1/7th scale wave energy converter. *MTS/IEEE Oceans*. Kona, HI. September 18-22, 2011.
- C.4 **Bassett, C.**, J. Thomson, and B. Polayge. Characteristics of underwater ambient noise at a proposed tidal energy site in Puget Sound. *MTS/IEEE Oceans*. Seattle, WA. September 21-23, 2010.

Technical Reports

- T.1 Cagua, E.F., **C. Bassett**, R. Kayanda, J. Rubens, and H. Machano (2014). Acoustic Monitoring of Blast Fishing: Pilot Study - Dar es Salaam. Report CN 94 to WWF Tanzania Country Office: Marine Programme.

Conference Abstracts

- A.1 **Bassett, C.**, A. Lavery, T. C. Weber, G. Lawson, and M. Jech. Application of broadband echosounders for detection and characterization of targets near boundaries. *ICES Symposium on Marine Ecosystem Acoustics*, Nantes, France, May 25-28, 2014.
- A.2 M. Jech, A. Lavery, G. Lawson, and **C. Bassett**. Acoustic observations of fish and zooplankton over a wide frequency band (15-400 kHz). *ICES Symposium on Marine Ecosystem Acoustics*, Nantes, France, May 25-28, 2014.
- A.3 **Bassett, C.**, A. Lavery, and T. Maksym. Laboratory measurements of high-frequency, broadband acoustic scattering of growing sea ice and oil beneath sea ice. *Meeting of the Acoustical Society of America*, Providence, RI, May 5-9, 2014.
- A.4 **Bassett, C.**, J. Thomson, B. Polayge, and J. Wood. Shifting gravel and the acoustic detection range of killer whales. *American Geophysical Union Fall Meeting*, San Francisco, CA, December 3-7, 2012.
- A.5 **Bassett, C.**, J. Thomson, and B. Polayge. Course-grained sediment mobilization as a source of ambient noise. *American Geophysical Union Ocean Sciences Meeting*. Salt Lake City, UT. February 20-24, 2012.

- A.6 **Bassett, C.**, B. Polagye, and J. Thomson, and K. Rhinefrank. Underwater noise measurements of a 1/7th scale wave energy converter. *MTS/IEEE Oceans*. Kona, HI. September 18-22, 2011.
- A.7 **Bassett, C.**, B. Polagye. and J. Thomson. Approaches to ambient noise characterization at tidal energy sites. *Meeting of the American Fisheries Society*, Seattle, WA, September 23-27, 2011.
- A.8 **Bassett, C.**, J. Thomson, and B. Polagye. Estimating the acoustic impact of a tidal energy project, *Meeting of the Acoustical Society of America*, Seattle, WA, May 23-27, 2011.
- A.9 Polagye, B., J. Wood, **C. Bassett**, D. Tollit, and J. Thomson, Behavioral response of harbor porpoises to vessel noise in a tidal strait, *Meeting of the Acoustical Society of America* Seattle, WA, May 23-27, 2011.
- A.10 (invited) Polagye, B., J. Thomson, **C. Bassett**, and J. Epler. Comprehensive characterization of a tidal energy site. *American Geophysical Union Fall Meeting*. San Francisco, CA. December 13-17, 2010.
- A.11 (invited) **Bassett, C.**, B. Polagye and, J. Thomson. Passive acoustics. *Renewable Ocean Energy and the Marine Environment*. Palm Beach Gardens, FL. November 4-6, 2010.

Other Presentations

- P.1 Polagye, B. and **C. Bassett** (joint presentation). Underwater Sound from Marine Hydrokinetic Converters: Primer and Synthesis. *DOE Marine and Hydrokinetic Workshop for State and Federal Regulators*. Portland, OR. Sept., 2014.
- P.2 **Bassett, C.** Sediment-generated noise. *Coastal & Ocean Fluid Dynamics Laboratory Seminar, Woods Hole Oceanographic Institution*. Woods Hole, MA. Jan., 2014.
- P.3 **Bassett, C.** Ambient Noise in an Urbanized Tidal Channel. *Departmental Seminar, Applied Physics Lab., University of Washington*. Seattle, WA. July., 2014.
- P.4 Polagye, B. and **C. Bassett** (joint presentation). Underwater Sound: Tidal Turbines and Marine Mammals. *Marine Renewables Seminar, Mechanical Engineering, University of Washington* Seattle, WA. Sept., 2013.
- P.5 **Bassett, C.** . Sediment-Generated Noise in a Tidal Channel. *Departmental Seminar, Applied Physics Lab., University of Washington*. Seattle, WA. Oct., 2012.
- P.6 **Bassett, C.**, J. Thomson, and B. Polagye. Characterizing a Tidal Energy Site. *Departmental Seminar, Civil Engineering, Universidad Catolica de Chile*. Santiago, Chile. Aug., 2013.
- P.7 **Bassett, C.**, J. Thomson, B. Polagye, and K. Rhinefrank. Underwater noise measurements of a 1/7th scale wave energy converter. *DOE MHK Environmental Webinar Series*. Dec., 2011.
- P.8 Polagye, B. and **C. Bassett** (joint presentation). Ambient and Turbine Noise. *Northwest Fisheries Science Center*. Seattle, WA. Apr., 2011.

- P.9 (invited) **Bassett, C.**, B. Polagye and, J. Thomson. Passive acoustic monitoring for tidal energy projects. *Advanced Marine Renewable Energy Instrumentation Experts Workshop*, Broomfield, CO, Apr., 2011.

Honors and Awards

Woods Hole Oceanographic Institution Postdoctoral Scholar Fellowship (2013)
University of Washington Graduate School Medal (2013)
National Science Foundation Graduate Research Fellowship Program (2010)
University of Minnesota Institute of Technology Dean's List (2006-2007)
S & V Jacobsen Scholarship (2006-2007)

Workshops and Courses Attended

University of Washington, Friday Harbor Labs "Marine Bioacoustics" course (2011)
Acoustical Society of America - ASA School (2014)

Service

Journal Peer Reviews

- *Journal of the Acoustical Society of America*
- *Aquaculture*
- *Journal of Great Lakes Research*

U.S. Shadow Committee Chair

- IEC TC 114 PT 62600-40. Technical committee to establish a standardized approach for measuring, analyzing, and reporting the sound produced by the operation of marine renewable energy devices (2014 –)

Acoustical Oceanography Technical Committee Member

- Acoustical Society of America (2014 –)

U.S. Dept. of Energy Review Panels

- Environmental Stewardship for Renewable Energy Technologies: MHK Environmental and Resource Characterization Instrumentation (2014)
- Instrumentation for Monitoring Around Marine Renewable Energy Devices (2013)

Student Paper Judge

- 167th Meeting of the Acoustical Society of America, Providence, RI (2014)

Workshop Participant

- Instrumentation for Monitoring around Marine Renewable Energy Devices (2013)

Peer Reviewer

- "Marine Renewable Energy Resource Characterization and Environmental Monitoring: Review and Gap Analysis of Technologies and Capabilities" for Natural Resources Canada's CanmetENERGY (2012)

Professional Affiliations

Acoustical Society of American
American Geophysical Union

Outreach

Invited Speaker:

- American Cetacean Society Speaker Series, Puget Sound Chapter (2013)
- Emerald Sea Diving Club (2013)
- Marker Buoy Dive Club (2013)

Exhibitor: Seattle Science EXPO (2012-2013)

Presenter: UW College of Engineering Discovery Days (2010-2013)

Volunteer: National Ocean Science Bowl - Orca Bowl (2012)

Guest Instructor: Robinson Center Summer Challenge (2013)

Volunteer/Instructor: Ocean Inquiry Project (2010-2011)

Exhibit Design/Exhibitor: Windustry at the Minnesota State Fair (2008)

Organizer/Instructor: Building Resources and Innovative Designs for Global Energy (BRIDGE) student organization at the University of Minnesota (2007-2008)

Assistant Director/Tutor: Santo Rosario Grupo de Jovenes, Minneapolis, MN (2005)

Oceanographic Cruises and Experiments

WHOI Cold Room, Woods Hole, MA: (Jan., 2015)

- Broadband sonar deployment to measure crude oil sound speed versus temperature

CRREL, Hannover, NH: (Oct., 2014 - Jan., 2015)

- Experimental design and deployment of two broadband sonar systems
- Rewired internal power electronics to prepare "field" system for tank studies
- Design of apparatuses for under ice scattering studies
- Sonar system calibrations

HSVA, Hamburg, Germany: (Dec., 2013)

- Deployment broadband sonars and visual cameras under different ice morphologies to monitor ice growth and crude oil injections
- Sonar system calibrations

Connecticut River, CT: R/V Tioga (Nov., 2014)

- Deploy/monitor 6-channel broadband sonar system backscatter data

Columbia River Mouth, OR: R/V Oceanus (May, 2013)

- Deploy and recover SWIFT drifters in river/river plume

Admiralty Inlet, Puget Sound, WA: R/V Jack Robertson (10+ cruises, 2009-2013)

- Experimental design and preparation of all passive acoustic deployments
- Deploy/recover instrumented tripods

Chacao Channel, Chile: R/V Jurgen Winter (11-14 Feb. 2013)

- Recover/deploy a mooring with an ADCP, ADVs, and hydrophones to measure currents, turbulence, and ambient noise

New River Inlet, NC (May, 2013)

- Deploy and recover SWIFT drifters

Gulf of Maine: R/V Oceanus (2-18 Sept. 2010)

- Monitor HT 244 Multi-Frequency Echo Sounder

Whidbey Island, WA: R/V Henderson (Nov. 2009)

- Development and deployment of Python-based data acquisition and storage system for real-time recording and archiving of AIS ship traffic data (VHF)
- System ran autonomously for more than 3 years