Jan Witting

Curriculum Vitae

Professor of Oceanography
Sea Education Association
171 Woods Hole Road
Falmouth, MA 02540

Tel: 781.363.3602
Email: jwitting@sea.edu

Education

Ph.D. Biology, Northeastern University, June 2000
B.S. Biology, Northeastern University, 1989

Professional Experience

Professor of Oceanography, Sea Education Association (2012–present)
Adjunct Professor, Department of Oceans, Doerr School, Stanford University (2024)
Visiting Lecturer, University of Chicago (April 2021)
Program Director, SEA's Protecting the Phoenix Islands program (2014–2023)
Visiting Scientist, Stanford University (2018)
Faculty Oceanographer, Sea Education Association (2001–2012)
Post-Doctoral Research Associate, Northeastern Univ. (2000–2001)

Honors/Awards

Blue Nature Alliance research grant: "Collecting Bluewater Time Capsules to Establish Ocean Baselines." Principal investigator, $149,586, 2022–2025.

National Science Foundation Grant no. 1916029 "Instrument Calibration for Sea Education Association". Principal Investigator, $39,300, 2019-2022.

Waitt Foundation research grant: "Larval tuna research in the Phoenix Islands Protected Area." Co-principal investigator (with Dr. Randi Rotjan, New England Aquarium), $108,000, 2015–2016.

Armin E. Elsaesser Fellowship: "Traditional and subsistence fisheries of Tuamotu, Marquesas, Society and Austral Islands." Principal Investigator, $10,000, 2008–2009.

Horner Education Trust development grant: "Developing a curriculum for Oceans and Climate Semester." Co-principal investigator, $71,000, 2006–2007.

Professional Affiliations

American Geophysical Union, American Society of Limnology and Oceanography

Research Interests

Physical and biological coupling of the Equatorial Pacific upwelling system.
Interannual variability of the Equatorial Pacific circulation.
The effects of the ENSO cycle on the ecosystem dynamics of the Tropical Pacific Ocean.
Climate impacts on the abundance and diversity patterns of tropical pelagic ecosystems.

Selected Teaching Experience and Courses Developed

Stanford at SEA, 2003–present. In Sea Education collaboration with Stanford Prof. Barbara Block and Prof. Rob Dunbar, developed and jointly taught a bi-annual 12-credit upper-level oceanography curriculum at Stanford University's Hopkins Marine Lab, including a five-week Equatorial Pacific research cruise on SEA's sailing research vessel.

Oceans and Climate, 2007–present. At SEA, led the development of this semester-program on ocean-climate interactions. Developed and taught 4-credit Ocean in the Global Caron Cycle (Boston Univ. CAS NS 321) and taught Directed Oceanographic Research (BU XAS 325) on campus in Woods Hole, MA, and on SEA vessel in the Pacific.

Oceans and Global Change, 2013–present. At SEA, led the development of this 4-credit course, examining various aspects of Ocean ecosystem change in the anthropocene (Boston Univ. CAS NS 321). Taught on campus in Woods Hole, MA, and on SEA ships in the Atlantic and the Pacific.

Protecting the Phoenix Islands, 2014–2023. At SEA, in collaboration with Dr. Randi Rotjan, New England Aquarium, developed a 300- and 400-level undergraduate semester program on the intersection of the oceanography and conservation policy of the Phoenix Islands, Republic of Kiribati. Taught on campus in Woods Hole and during research cruises to the Phoenix Islands Protected Area.

Sustainability in Pacific Island Cultures and Ecosystems, 2011–2022. At SEA, in collaboration with Dr. Mary Malloy, Dr. Keitapu Maamaatuaiahutapu, and Moohono Niva (MS), developed a 300-level 17-credit program examining the long-term relationship between island cultures and the surrounding ocean environment. Included seven-week research cruises on location in French Polynesia, Samoa, Wallis and Futuna, and Fiji.

Biological Oceanography, 2021. (Univ. of Chicago BIOS 27751). At SEA, developed and taught this 3-week course in collaboration with the University of Chicago, delivered at the Marine Biological Laboratories and at sea during University of Chicago's MBL Spring Quarter.

Alison Rieser, Dr. Cindy Hunter and Dr. David Hyrenbach to develop syllabus and lectures for this co-taught University of Hawaii course in class and the waters around Hawaii on SEA's sailing research vessel.

Ocean and Coastal Processes, 2001–2002. Northeastern University, East/West Program, BIO1481/3371. Instructor in this undergraduate- and graduate-level course on location in Jamaica, W.I.

Selected Publications and Reports

von Ammon, UX, Pochon, P, Casanovas, B, Trochel, M, Zirngibl, A, Thomas, **Witting, J**, Joyce, P, and Zaiko, A. 2022. Net overboard: comparing marine eDNA sampling methodologies at sea to unravel marine biodiversity. *Mol. Ecol. Resources*, 13 October doi.org/10.1111/1755-0998.13722.

Kennedy, B, Hakam, L, **Witting, J**, Milani, R, Taei, S, Smith, T, Taylor, E, Temari, T, and Rotjan, RD. 2021. Historical Trends of Sperm Whale (*Physeter macrocephalus*) Distribution in the Phoenix Archipelago. *Front. Mar. Sci.*, 12 January https://doi.org/10.3389/fmars.2020.583326

Hernandez, C, **Witting, J**, Willis, C, Thorrold, S, Llopiz, J, and Rotjan, RD. 2019. Evidence and patterns of tuna spawning inside a large no-take Marine Protected Area. *Scientific Reports* 9 (10772) https://doi.org/10.1038/s41598-019-47161-0

Witting, J. 2019. Final Report for S.E.A. cruise S-281, Honolulu, Hawaii–Phoenix Islands Protected Area, Kiribati-Pago Pago, American Samoa. Sea Education Association, P.O. Box 6, Woods Hole, MA 02543, USA.

Witting, J. 2017. Final Report for S.E.A. cruise S-273, Stanford at SEA, Tahiti–American Samoa. Sea Education Association, P.O. Box 6, Woods Hole, MA 02543, USA.

Leslie, WR, Karnauskas, KB, and **Witting**, **JH**. 2015: The Equatorial Undercurrent and TAO sampling bias from a decade at SEA. *J. Atmos. Oceanic Technol.*, **31**(9), 2015–2025, doi:10.1175/JTECH-D-13-00262.1.

Leichter, JJ, Stokes, DM, Hench, J, **Witting, J**, and Washburn, L. 2012. The island-scale internal wave climate of Moorea, French Polynesia. *J. Geophys. Res*, 117(C6), p.C06008.

McCliment E, Nelson C, Carlson C, Alldredge A, **Witting J**, Amaral-Zettler L. 2012. An all-taxon

microbial inventory of the Moorea coral reef ecosystem. *ISME J.* 2012 Feb;6(2):309–19.

Chan Y. and **Witting J.** 2012 The Impact of Microplastics on Salp Feeding in the Tropical Pacific. *The ANU Undergraduate Research Journal*, 4: 129-142

Ayers J, Witting J, Ryder S, Olcott C. 2010. US Patent, Aug. 3, No. US 7,769,487 B2, Process and architecture of robotic system to mimic animal behavior in the natural environment.

Ayers J, **Witting J.** 2007. Biomimetic approaches to the control of underwater walking machines. *Phil. Trans. R. Soc. A* 365, 273–295.

Stevenson C, Katz L, Micheli F, Block B, Heiman K, Perle C, Weng K, Dunbar R, **Witting J.** 2007. High apex predator biomass on remote Pacific islands. *Coral Reefs* 26: 47–51

Joyce P., **Witting J**., Zettler E. 2003. Advanced instrumentation in an undergraduate program in oceanography. Oceans 2003: Celebrating the Past... Teaming Toward the Future (IEEE Cat. No. 03CH37492), vol. 4, pp. 2274.

Ferrier-Pages, C, **Witting, J**, Tambutte, E, Sebens, KP. 2003. Effect of natural zooplankton feeding on the tissue and skeletal growth of the scleractinian coral *Stylophora pistillata*. *Coral Reefs* 22: 229–240.

Sebens, KP, **Witting, JH,** and Helmuth, B. 1997. Effects of water flow and branch spacing on particle capture by the reef coral *Madracis mirabilis* (Duchassaing and Michelotti). *J. Exp. Mar. Biol. Ecol.* 211: 1–28

University of Hawaii @ SEA – a field course in ocean conservation, 2010. Collaborated with Dr. Alison Rieser, Dr. Cindy Hunter and Dr. David Hyrenbach to develop syllabus and lectures for this co-taught University of Hawaii course in class and the waters around Hawaii on SEA's sailing research vessel.

Ocean and Coastal Processes, 2001–2002. Northeastern University, East/West Program, BIO1481/3371. Instructor in this undergraduate- and graduate-level course on location in Jamaica, W.I.

Synergistic Activities

Co-investigator, "Voyage to the White Shark Café" cruise on board R/V Falkor, April–May 2018, together with teams from Stanford University, University of Delaware, NOAA office of Exploration, MBARI, and Monterey Bay Aquarium.

Member of the Phoenix Islands Protected Area Science Advisory Committee.

Chief Scientist on 19 research cruises in the past 10 years in the region encompassing Hawaii, French Polynesia, American Samoa, and Howland and Baker PRIMNM, Tonga, and New Zealand.

Currently advise 38–42 twelve-week undergraduate oceanographic research projects.

Ph.D. dissertation committee member, Jacob Jaskiel, Boston University.