

**KAITLYN TRADD (McCARTNEY)**  
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**EDUCATION:**

*B.S. Mechanical and Ocean Engineering, Massachusetts Institute of Technology, June 2009*

**PROFESSIONAL EXPERIENCE:**

*2018-present: Research Engineer, WHOI, AOP&E Department*  
*2012-2018: Engineer II, WHOI, AOP&E Department*  
*2011-2012: Engineer I, WHOI, AOP&E Department*  
*2009-2011: Coastal Engineer, Woods Hole Group, Falmouth, MA*  
*Summer 2008: Summer Student Fellow, WHOI, AOP&E Department*  
*Summer 2006: Undergraduate Researcher, MIT Sea Grant*

**TRAINING, CERTIFICATIONS, AND LICENSES:**

*Machine Shop Safety Training, Driver Safety Training, Personal Protective Equipment Training, Fall Protection, Ladder & Scaffold Safety Training, Hoisting and Rigging Safety Training, Personal Protective Equipment Training, Forklift Certification*

**AWARDS:**

*Society of Naval Architects and Marine Engineers – Undergraduate Excellence Award, 2009*  
*NCAA Division III – NEWMAC Softball Academic All-Conference Team, 2009*

**PROFESSIONAL AFFILIATIONS:**

*Member – Society of Women Engineers, 2006 - present*  
*Member – Society of Naval Architects and Marine Engineers, 2008 - present*  
*Member – IEEE, 2017 - present*

**RESEARCH INTERESTS:**

*Design, fabrication, testing, and operation of ocean-based mechanical systems and support equipment including moorings, submersibles, sensors, sampling equipment and field support technologies.*

**PROFESSIONAL ACTIVITIES:**

*WHOI Women's Committee, 2017 – 2021*  
*WHOI Technical Staff Committee, 2022 – present*

## **SUPERVISION/MENTORING AT WHOI:**

*Molly Curran – delegated work assignments and design of Twilight Zone EXplorer neutrally buoyant sediment sampler (TZEX), 2019-2021.*

*Rachel Kahn – supervised her work with the EK80 acoustic system aboard R/V Catapult, and trained her to assist with the preparation, troubleshooting, and deployment of TZEX at Station B, Bermuda, March 2021.*

*Jessica Kozik – trained her to operate (prepare, configure, launch and recover) the TZEX for cruise aboard R/V Sarmiento de Gamboa in April/May 2021.*

*Eric Hayden – delegated assembly and testing of subcomponents of Long Range AUV (LRAUV) for Scibotics Lab (A. Kukulya).*

*Noa Yoder – mechanical engineering mentor and advisor for work within Scibotics Lab on LRAUV.*

*Aidan Kenny, Northeastern University Co-op Student. Co-advised with A. Kukulya, Jan-June 2022.*

*Owen Cesarano – hired with A. Kukulya for Scibotics Lab and mentoring as new mechanical engineer.*

## **CRUISE PARTICIPATION:**

*July-August 2008: R/V Roger Revelle; Woods Hole, MA to Miami, FL; Mid-Atlantic Ridge; Anna-Louise Reysenbach*

*June 2010: R/V Connecticut; New London, CT to New London, CT; ADCP Survey of Long Island Sound; NOAA Tides and Currents*

*August 2010: R/V Connecticut; New London, CT to New London, CT; ADCP Survey of Long Island Sound; NOAA Tides and Currents*

*October 2011: R/V Atlantis; San Diego, CA to Balboa, Panama; 9° North with ROV Jason; Scott Nooner and Spahr Webb*

*September-October 2013: R/V Atlantis, San Francisco, CA to San Diego, CA; Santa Barbara Oil Seeps with ROV Jason; Dave Valentine*

*May-June 2014: R/V Atlantis, Gulfport, MS to Gulfport, MS; Deep Sea Seeps and the Florida Escarpment with HOV Alvin and AUV Sentry; Cindy Van Dover*

*January 2015: M/V Alucia, Majuro, RMI to Majuro, RMI; Quantifying Radionuclides in the Ocean at the Marshall Islands; Kenneth Buesseler, John Breier, and Matthew Charette*

*June-July 2016: R/V Sikuliaq, Victoria, B.C. to Seattle, WA; Cascadia ACORK with ROV Jason; Jeff McGuire*

*July 2017: R/V Armstrong, Woods Hole, MA to Woods Hole, MA; Clio AUV Sea Trials; M. Sato, J. Breier, and M. Jakuba*

*January 2018: R/V Atlantic Explorer, BIOS, Bermuda to BIOS, Bermuda; BATS; M. Estapa and K. Buesseler*

April 2018: R/V Atlantic Explorer, BIOS, Bermuda to BIOS, Bermuda; BATS and Clio AUV; M. Saito, J. Breier, and M. Jakuba

August 2018: R/V Henry B. Bigelow, Newport, RI to Newport, RI; Deep-See Sea Trials and Mesopelaic Exploration; A. Lavery and J. M. Jech

August 2019: R/V Henry B. Bigelow, Newport, RI to Newport, RI; Mesopelaic Exploration with Deep-See; A. Lavery and J. M. Jech

February-March 2021: R/V Catapult and Station B, Bermuda; Ocean Twilight Zone field work with Mesobot and Twilight Zone Explorer (TZEX); D. Yoerger and K. Buesseler

August 2022: R/V Endeavor, Woods Hole, MA to Woods Hole, MA; Ocean Twilight Zone; H. Sosik, K. Buesseler, D. Yoerger

## **PUBLICATIONS:**

Breier, J. A., C. R. Rauch, K. McCartney, B. M. Toner, S. Fakra, S. N. White, and C. R. German. A suspended-particle rosette multi-sampler for discrete biogeochemical sampling in low-particle-density waters. *Deep Sea. Research Part I, Volume 56 Issue 9*, pp 1579-1589, September 2009

Breier, C.F., S. M Pike., F. Sebesta., K. Tradd, J. A. Breier, K. O. Buesseler. New applications of KNiFC-PAN resin for broad scale monitoring of radiocesium following the Fukushima Dai-ichi nuclear disaster. *Journal of Radioanalytical and Nuclear Chemistry, Volume 307 Issue 3*, pp 2193-2200, March 2016

Estapa, M., J. Valdes, K. Tradd, J. Sugar, M. Omand, K. Buesseler. The Neutrally Buoyant Sediment Trap: Two Decades of Progress. *Journal of Atmospheric and Oceanic Technology, Volume 37, Issue 6*, pp 957-973, June 2020

Govindarajan, A.F., L. McCartin, A. Adams, E. Allan, A. Belani, R. Francolini, J. Fujii, D. Gomez-Ibañez, A. Kukulya, F. Marin, K. Tradd, D. R. Yoerger, J. McDermott, S. Herrera. Improved biodiversity detection using a large-volume environmental DNA sampler with in situ filtration and implications for marine eDNA sampling strategies. *Deep Sea Research Part I. September 2022.*

## **PUBLISHED ABSTRACTS:**

Govindarajan, A. F., J. Pineda, M. Purcell, K. Tradd, G. Packard, A. Girard, M. Dennett, J. A. Breier. Development of Autonomous Sampling Capability for Small Marine Organisms, Northeast Robotics Colloquium 2014.

Govindarajan, A. F., J. Pineda, M. Purcell, K. Tradd, G. Packard, A. Girard, M. Dennett, J. A. Breier. Cross-shore and Vertical Distributions of Invertebrate Larvae using Autonomous Sampling Coupled with Genetic Analysis, *Ocean Sciences 2016.*

Jakuba, M., J. A. Breier, D. Gómez-Ibañez, K. Tradd, M. Saito. Clio: A Vertical Profiling Vehicle for Global Ocean Biogeochemical Mapping, *IEEE AUV 2018.*

Lavery, A., P. H. Wiebe, T. K. Stanton, J. M. Jech, C. Davis, A. F. Govindarajan, A. Bucklin, J. A. Breier, D. Yoerger, R. Petitt, C. Pontbriand, K. Tradd. Deep-See: An Instrument Platform for Sampling the Twilight Zone, *ICES CIEM 2018.*

Govindarajan, A. F., J. A. Breier, A. Bucklin, A. Lavery, K. Tradd, P. H. Wiebe, D. Yoerger. *Integrative metabarcoding analysis of mesopelagic biodiversity based on new sampling and sensing technologies, ICES CIEM 2018.*

Govindarajan, A. F., D. Yoerger, A. Adams, S. Herrera, J. McDermott, E. Allen, A. Belani, R. Francolini, J. Fujii, D. Gomez-Ibanez, J. Jang, A. Kukulya, F. Marin, L. McCartin, K. Tradd, C. Xia. *An autonomous Edna sampler for the ocean's midwater. WCMB PISCES 2020*

Ceballos-Romero, E. K. O. Buesseler, C. Durkin, R. Kiko, L. Drago, W. Bam, S. Clevenger, K. Tradd, M. Picheral. *Imaging ocean sinkers in the North Atlantic: seasonal insights into particle distribution and carbon export in the twilight zone. OSM 2022.*

#### **INTERNAL REPORTS:**

K. McCartney, *Heavy Lifting Winch Deck Interface Assembly Analysis, OOI Technical Document, September 2011*

K. McCartney and D. Peters, *Reaction Load Analysis of Sphere Attachment Tabs for DSV ALVIN, NAVSEA Certification Document, 2012*

L. O'Hara and K. McCartney, *A-6500 Frame System Design Document, NAVSEA Certification Document, 2012*

K. McCartney, *A-6500 Service Release Subsystem Design Document, NAVSEA Certification Document, 2012*

M. Carroll and K. McCartney, *A-6500 Fixed Buoyancy System Design Document, NAVSEA Certification Document, 2012*

C. Taylor and K. Tradd, *A-6500 Implodable Analysis of Alvin Magnetometer Assembly, NAVSEA Certification Document, 2019*

C. Taylor, D. Peters, and K. Tradd, *A-6500 Implodable Analysis of Alvin Laser, NAVSEA Certification Document, 2020*

#### **PRESENTED TALKS:**

*WHOI Robotic Arm Demonstration, Museum of Science - Robotics Week, April 2011*

*Guest Presenter, "Cape and Islands Engineering Challenge", May 2014*

*"Two Underwater Vehicles Can Be Better than One", Science Made Public Lecture Series, July 2014*

*Guest Presenter and Student Mentor, "Introduce a Girl to Engineering Day", June 2015*

*"The Technical Evolution and Scientific Applications of a Suspended Particulate Rosette Sampler:2008 - Present", AOP&E Department Seminar, March 2015*

*Keynote Speaker, "Underwater Vehicles – Human Occupied, Remotely Operated, and Autonomous", STEM Journey III, April 2016*

*Guest Speaker, Chapin School 6<sup>th</sup> Grade visit c/o WHOI Academic Programs, 2014 – 2019*

*Keynote Speaker and Panelist, "Introduce a Girl to Engineering Day", March 2019.*