

Amy L. Kukulya

Senior Oceanographic Engineering Assistant I, Applied Ocean Physics and Engineering Department
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Education:

B.S.: Rutgers University, 1999, Environmental Policy.
American University, 1998, Summer Semester, Seville, Spain.

Research Interests:

Underwater vehicle system architecture for docking, navigation, communications, underwater archaeology, three-dimensional tracking of animals and under-ice capabilities; Development of science applications for underwater vehicles.

Professional Experience:

Woods Hole Oceanographic Institution, Woods Hole, MA (June 2001-present)
Research Assistant II, Biology Department (June 2001-Nov. 2004, transferred to AOP&E in June 2003)
Research Assistant III, AOP&E (November 2004-February 2006)
Engineering Assistant III reclassification, AOP&E (February 2006-July 2008)
Senior Engineering Assistant I, AOP&E (August 2008-present)

Professional Activities:

WHOI:

- Woman's Committee elected member, Webmaster, September 2007 (two year)
- Retirement Task Force- Member, May 2009-June 2010

OUTSIDE:

- Wowster Mentor and Outreach Professional, Appointed by MA Governor's Office, 2012- ongoing

Professional Affiliations:

ASLO, American Society for Limnology and Oceanography, 2004-2006
IEEE Ocean Engineering Society, 2006 and current

Participation in Education and Outreach Programs:

- Children School of Science faculty member (2001-2007).
- EngineerYourLife.org outreach brochure and featured engineer- ongoing.
- Design Squad PBS outreach profile video for kids.
- Engineergirl.org profile outreach program-featured engineer- ongoing.
- Falmouth Academy Summer Faculty for Underwater Robotics Class, July 2008.
- DotDiva.org, mentor for college bound women, Microsoft/WGBH, 2010-ongoing.
- Girls, Math & Science Partnership, mentor, Braincake.org, 2010-ongoing.
- WOWSTER Program, Highlighted Mentor for Governor's STEM Program, 2011-ongoing.
- Developed ten-week outreach program in Morse Pond Elementary School -Robotics for 5th and 6th graders, Winter 2013

Supervision at WHOI:

CO-Supervised Summer Student Fellow, Jennifer Batryn, 2012

Cruise/Field Work Participation:

April 2001	F/V Odessa; Boston Harbor, yellowtail outfall pipe sampling.
May 2001	R/V Hatteras; Gulf of Maine <i>Alexandrium</i> studies.
September 2001	R/V Connecticut; Mass Bay, VPR/AVPPO.
April 2002	RVIB Palmer; Antarctica, BIOMAPER/SeaRover-Two months.
September 2002	R/V Connecticut; Mass Bay, VPR/AVPPO.
2001-2003	8 VPR mooring deployment cruises in New England waters.
April 2003	R/V Oceanus; Mass Bay., Scallop Sled
May 2003	Field ops in Carmel NY; AUV Tunnel Project.
June 2003	Field ops in Newport RI; NUWC REMUS trials.
August 2003	Field ops in Keyport WA; AUV Fest.
August 2003	R/V Asterias and F/V Patricia Lynn: MVCO REMUS Trials.
October 2003	Field ops in San Diego CA; NCEX REMUS-two months.
June 2004	Field ops in Camp Lejuene NC; REMUS.
September 2004	REMUS acoustic testing field ops, Dodge Pond, CT.
Sept. & Nov. 2004	R/V Pelican, REMUS ops, Panama City, FL.
2005	R/V Tioga, AWACS Field work participation
July 2005	Sublaunch Demonstration, Hawaii
November 2005	REMUS-600 Demonstration, La Spezia, Italy
February 2006	Docking Demonstration, Panama City, FL
April 2006	REMUS 600 Demonstration, Panama City, FL
Jan 22- Feb 8, 2007	CNAV 50 vehicle support, Keyport WA
Feb 20-March 2, 2007	CNAV support, Keyport, WA
March 14-24 2007	REMUS 600 support, Panama City, FL
May 30-June 15 2007	AUVFEST 2007, Panama City, FL
August 21-24 2007	Hull Harbor Demo, San Diego, CA
February 2008	REMUS 600 Panama City, FL
March 2008	14 day REMUS ARL UT Training, Austin, TX
April 2008	10 day cruise, Towed Array Experiment, Andros Island, Bahamas
May 2008	10 days AUVFEST, Hull & Harbor Demo, Newport, RI
May/June 2008	10 day cruise, Towed Array, NJ shelf break
*August 2008	R/V Annika Marie, Beaufort Sea, Alaska- REMUS 100 Arctic
August 2008	Kiel Germany. Hull & Harbor Demo with REMUS 100
*February 2009	Honolulu, Hawaii, PO REMUS Operations, Gawarkiewicz.
April 16-May 2009	AUTEC Bahamas, Plus-INP, Argos Maine.
May 27-June 4 2009	NYC Tunnel Inspection, Carmel NY.
July 24-Aug 12 2009	R/V KNORR in Kauai Hawaii, PLUS-INP.
Oct 1 -8 2009	AUTEC, Sublaunch.
*February 2-5 2010	Seller's AUV Under-ice work, New Hampshire.
February 7-21 2010	Field Operations, Kauai, Hawaii.
*March 14-27 2010	Under Ice Arctic Expedition, Barrow, Alaska.
*April 4-9 2010	Lake Seneca Sublaunch training exercise (Navy), NY.
May-Sept 2010	PLUS-INP Local testing

Sept 23- Oct 7 2010 PLUS-INP cruise, R/V Moana Wava, San Clemente Island, CA.
 *Jan 17-Feb 7 2011 Pink and White Terraces Discovery, New Zealand.
 *February 14 - 18 2011 Acoustic Testing, Lake Seneca NY.
 June 11 - 24 2011 AUV FEST, Panama City FL.
 July 21-August 5 2011 PLUS INP, control center, Naval Undersea Warfare Center.
 *Sept 7 - 15 2011 Fish Acoustics Cruise, R/V Sharp, Outerbanks, NC.
 January 2012 USS Revenge Survey, Watchill, RI
 **May-July 2012 Sharkcam, Provincetown and Chatham, MA
 *May 11-29, 2012 Fish Acoustics Cruise, R/V Sharp, Outer Banks, RI
 *July 13-29 2012 Greenland, Glacier and Fjord Survey, Camping
 *April 2013 REMUS-100 mini magnetometer testing, Panama City, FL
 *August 2013 Katama Bay Surveys, MV
 July/Aug 2013 Pilgrim Nuclear Power Plant multi vehicle surveys, Plymouth, MA
 October 2013 Night Operations REMUS-100 laser docking, Local, Lincoln Labs, Woods Hole, MA
 **Oct 26 –Nov 12 2013 SharkCam II Expedition, R/V Horizon, Guadalupe Isle, Mexico
 April 2014 Radon sensor and range finder integration and field testing, Knoxville TN
 March 15-22 2014 Delivery of NPS docking station and training @ NPS, Monterey, CA
 **July/August 2014 Turtle tagging and tracking fieldwork, Vineyard Sound, MA
 **July 12-16 2014 Scallop Enhancements Expedition@ CA I George's Bank
 **Sept 8-12 2014 Scallop Mortality II Expedition south of Block Island
 July-Oct 2014 ~40 days total, (2) REMUS-6000 FSM manganese nodules Expeditions, Hawaii

** Denotes Technical Leader/Expedition Leader*

*** Denotes Technical Leader/Expedition Leader and Principal Investigator*

Publications:

J. D. Holmes, W. M. Carey, J. F. Lynch, A. E. Newhall and **A. Kukulya**, "An Autonomous Underwater Vehicle Towed Array for Ocean Acoustic Measurements and Inversions", ASA Vancouver, 2005.

R. Stokey, A. Roup, C. von Alt, B. Allen, N. Forrester, T. Austin, R. Goldsborough, M. Purcell, F. Jaffre, G. Packard, **A. Kukulya**, "Development of the REMUS 600 Autonomous Underwater Vehicle", Oceans 2005.

***Kukulya, A.**, Stokey, R., von Alt, C., Packard, G., Purcell, M., Forrester, N., Austin, T., Goldsborough, R., Allen, B., "Recent Science Applications for the REMUS AUV", Presented ASLO 2004, Hawaii. *Presented B. Allen, T. Austin, N. Forrester, R. Goldsborough, **A. Kukulya**, G. Packard, M. Purcell and R. Stokey, "Autonomous Docking Demonstrations with Enhanced REMUS Technology", September 2006. Presented at Oceans 2006, Boston.

J. D. Holmes, **A. Kukulya**, "Characteristics of an autonomous underwater vehicle with a towed hydrophone array", September 2006. Presented at Oceans 2006, Boston.

***A. Kukulya**, A. Plueddemann, et. al, "Under-ice Operations with a REMUS-100 AUV in the Arctic," *Proceedings: IEEE Autonomous Underwater Vehicle Conference 2010*, Mapping the World's Oceans, Naval Postgraduate School, Monterey, California 1–3 September 2010. *Presented

S. L Walker, C. E J de Ronde, D. J Fornari, M. I Leybourne, V. Ferrini, **A. Kukulya**, et. al. "Hydrothermal

Venting at Lake Rotomahana, New Zealand, 125 Years After the Tarawera Eruption of 1886," AGU SESSION: EP19. Post-Eruptive Processes Operating on Volcanic Landscapes.

Cornel E J de Ronde, D. Fornari, V. L Ferrini, F. Caratori Tontini, S. L Walker, B. J Scott, M. Leybourne, A. Pittari, R. F Keam, J. E Lupton, A. Mazot, **A. L. Kukulya**, et. al. "Rediscovery of the 8th Natural Wonder of the World: The Pink and White Terraces' survival of the 1886 Tarawera Rift eruption," AGU 2011 SESSION: EP19: Post-Eruptive Processes Operating on Volcanic Landscapes.

G.E. Packard, **A. L. Kukulya**, et. al. "Continuous Autonomous Tracking and Imaging of White Sharks and Basking Sharks Using a REMUS-100 AUV". Presented IEEE MTS Oceans, San Diego October 2013.

Published Abstracts:

* **Kukulya, A.**, Stokey, R., von Alt, C., Packard, G., Purcell, M., Forrester, N., Austin, T., Goldsborough, R., Allen, B., "Recent Science Applications for the REMUS AUV", *Presented ASLO 2004, Hawaii.

G. Gawarkiewicz, F. Bahr, **A. Kukulya**, C. Marquette, C. Linder, T. Grothues and J.Dobarro, "Impact of recent flooding on the continental shelf north of Cape Hatteras: Results from Scanfish and AUV surveys," AGU Session 2011.

Gawarkiewicz, G., F. Bahr, **A. Kukulya**, C. Marquette, C. Linder, T. Grothues, and J. Dobarro (2012). "Cross-shelf structure on the continental shelf north of Cape Hatteras: impact from recent flooding." Poster presentation, AGU Ocean Sciences Meeting, Salt Lake City, UT.

Papers In Referred Journals:

A. Plueddemann, **A. Kukulya**, R. Stokey, L. Freitag, "Autonomous Underwater Vehicle Operations Beneath Coastal Sea Ice," TMECH-04-2011-1580, Transactions on MECHATRONICS pgs. 54-64 (Peer-Reviewed 2011).

Participation in Documentaries/Science Programming/Publications:

- 2002, *Plankton* radio interview, NPR
- 2009 October, National Geographic Adventure Magazine, The Big, Record-Breaking, Green, Disease-Busting, Deep-Sea, Crime-Fighting IDEAS for 2009
- 2010, Design Squad, PBS
- 2010, WHOI Oceanus Video, *The Icebot: flying blind under the Arctic Ice*
- 2013, WHOI Oceanus Video, *The Ocean's Hidden Predators: Revealed*
- 2013 Documentary, *Return of Jaws*, Discovery Channel
- 2014 Documentary, *Jaws Strikes Back*, Discovery Channel

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United States Coast Guard Captains License- 50 Ton, Current