

Heather L. Spalding

College of Charleston, Department of Biology
66 George Street, Charleston, SC 29424
Office: (843) 953-1461; Email: spaldinghl@cofc.edu

EDUCATION

- 2012 DOCTOR OF PHILOSOPHY IN BOTANY:** University of Hawaii, Manoa (UHM)
Specialization in Ecology, Evolution, and Conservation Biology
Dissertation: *Ecology of mesophotic macroalgae and Halimeda kanaloana meadows in the Main Hawaiian Islands*
Advisor: Dr. Celia Smith
- 2002 MASTER OF SCIENCE IN MARINE SCIENCE:** Moss Landing Marine Laboratories (MLML), San Francisco State University
Thesis: *Distribution and abundance of deep water macroalgae in central California*
Advisor: Dr. Michael Foster
- 1997 BACHELOR OF SCIENCE IN MARINE SCIENCE:** Southampton College, Long Island University
Magna cum laude
Advisor: Dr. Larry Liddle

POSITIONS within the past 5 years

- 2019–present ASSISTANT PROFESSOR:** Department of Biology, College of Charleston, SC
- 2018 POSTDOCTORAL RESEARCH FELLOW:** NFWF, Department of Botany, UHM
- 2017–present AFFILIATE FACULTY:** Ecology, Evolution, and Conservation Biology Program, UHM
- 2014–2017 INSTRUCTOR:** Departments of Biology and Botany, UHM
- 2012–present ENVIRONMENTAL CONSULTANT:** Aquatic Research Consultants LLC, Honolulu, HI
- 2012–2017 POSTDOCTORAL RESEARCH FELLOW:** Papahānaumokuākea Marine National Monument

PUBLICATIONS

27. Veazey L*, Williams O, Wade R, Toonen RJ, **Spalding HL** (2019) Present-day distribution and potential spread of invasive green alga *Avrainvillea amadelpha*. *Frontiers in Marine Science*. doi: 10.3389/fmars.2019.00402, *Graduate student mentee
26. Sherwood AR, Showe-Mei L, Wade RM, **Spalding HL**, Smith CM, Kosakdi RK (2019) Characterization of *Martensia* (Delesseriaceae; Rhodophyta) from shallow and mesophotic habitats in the Hawaiian Islands: description of four new species. *European Journal of Phycology*, doi:10.1080/09670262.2019.1668062
25. Padilla-Gamiño JL, Roth MS, Rodrigues LJ, Bradley CJ, Bidigare RR, Gates RD, Smith CM, **Spalding HL**. (2019) Ecophysiology of mesophotic reef building corals in Hawai'i is influenced by symbiont-host associations, photoacclimatization, trophic plasticity, and adaption. *Limnology and Oceanography* doi:10.1002/lno.11164

24. Foster A*, **Spalding HL**, Cox TE, La Valle F, Philippoff J. (2019) The invasive green alga *Avrainvillea* sp. transforms native epifauna and algal communities on a hard substrate reef. *Phycological Research* 67: 164-169. <http://dx.doi.org/10.1111/pre.12359> *Undergraduate mentee
23. Wade R, **Spalding H**, Peyton K, Foster K, Sauvage T, Ross M, Sherwood A (2018) A new record of *Avrainvillea* cf. *erecta* (Berkeley) A. Gepp & E. S. Gepp (Bryopsidales, Chlorophyta) from urbanized estuaries in the Hawaiian Islands. *Biodiversity Data Journal* 6: e21617
22. Wainwright BJ, Zahn LZ, **Spalding HL**, Sherwood AR, Smith CM, Amend AS (2017) Fungi associated with mesophotic macroalgae from the 'Au'au Channel, west Maui are differentiated by host and overlap with terrestrial communities. *PeerJ* 5: e3532 ***Top 5 most viewed article in subject area for 2017**
21. Cox TE, **Spalding HL**, Foster MS (2017) Spatial and temporal variation of diverse intertidal algal assemblages in Southwest O'ahu. *Marine Ecology* 38: e12429
20. Langston R, **Spalding HL** (2017) A survey of fishes associated with Hawaiian deep-water *Halimeda kanaloana* (Bryopsidales: Halimedaceae) and *Avrainvillea* sp. (Bryopsidales: Udoteaceae) meadows. *PeerJ* 5: e3307.
19. Sansone FJ, **Spalding HL**, Smith CM (2017) Sediment biogeochemistry in mesophotic meadows of calcifying macroalgae. *Aquatic Biogeochemistry*: 1-24. doi:10.1007/s10498-017-9315-9
18. **Spalding HL**, O'Kelly CJ, Smith CM, Sherwood AR (2016) New Ulvaceae (Ulvophyceae, Chlorophyta) from mesophotic ecosystems across the Hawaiian Archipelago. *Journal of Phycology*. 52: 40-53 ***Nominated for Provasoli Award for Best Paper**
17. Pyle RL, Boland R, Bolick H, Bowen BW, Bradley CJ, Kane C, Kosaki RK, Langston R, Longenecker K, Montgomery AD, Parrish FA, Popp BN, Rooney J, Smith CM, Wagner D, **Spalding HL** (2016) A comprehensive investigation of mesophotic coral ecosystems in the Hawaiian Archipelago. *PeerJ* 4:e2475
16. Wagner D, Barkman A, **Spalding HL**, Calcinaï B, Godwin SL (2016) A photographic guide to the benthic flora and fauna from mesophotic coral ecosystems in the Papahānaumokuākea Marine National Monument. *Marine Sanctuaries Conservation Series ONMS-16-04*
15. Tsuda RT, **Spalding HL**, Sherwood AR (2015) New species records of marine benthic algae in the Papahānaumokuākea Marine National Monument (Northwestern Hawaiian Islands). *Bishop Museum Occasional Papers*. 116: 41-47
14. Costa B, Kendall M, Parrish F, Rooney J, Boland R, Chow M, Lecky J, Montgomery A, and **Spalding H** (2015) Identifying suitable locations for mesophotic hard corals offshore of Maui, Hawai'i. *PLoS one* 10(7): e0130285
13. Ainsworth TD, Bridge T, Torda G, Raina JB, Gates R, Padilla-Gamiño J, **Spalding HL**, Smith C, Woosley ES, Krause L, Bourne D G, Bongaerts P, Hoegh-Guldberg O, and Leggat W (2015) The coral core microbiome identifies rare bacterial taxa as ubiquitous endosymbionts. *ISME*. 17 April 2015; doi:10.1038/ismej.2015.39
12. Pochon X, Forsman ZH, **Spalding HL**, Padilla-Gamino J, Smith CM, Gates RD (2015) Depth specialization in mesophotic corals (*Leptoseris* spp.) and associated algal symbionts in Hawai'i. *Royal Society Open Science*. 2:140351
11. Roth MS, Padilla-Gamiño J, Pochon X, Bidigare RR, Gates RD, Smith CS, **Spalding HL** (2015) Fluorescent protein expression in mesophotic reef-building corals. *Marine Ecology Progress Series*. 521: 63-79
10. Wagner D, Kosaki RK, **Spalding HL**, Whitton R, Pyle RL, Sherwood AR, Tsuda RT, Calcinaï B (2014) Mesophotic surveys of the flora and fauna at Johnston Atoll, Central Pacific Ocean. *Marine Biodiversity Records* 7:1-10

9. Zechman FW, Verbruggen H, Leliaert F, Ashworth M, Buccheim MA, Fawley MW, **Spalding H**, Pueschel CM, Buccheim JA, Verghese B, Hanisak MD (2010) An unrecognized lineage of green plants persists in deep marine waters. *Journal of Phycology* 46: 1288-1295. ***Provasoli Award for Best Paper**
8. Rooney J, Donham E, Montgomery A, **Spalding HL**, Parrish FA, Boland R, Fenner D, Gove J, Vetter O (2010) Mesophotic coral ecosystems in the Hawaiian Archipelago. *Coral Reefs* 29: 361-367
7. Kahng SE, Garcia-Sais JR, **Spalding HL**, Brokovich E, Wagner D, Weil E, Hinderstein L, Toonen RJ (2010) Community ecology of mesophotic coral reef ecosystems. *Coral Reefs* 29: 255-275
6. **Spalding HL**, Gupta A, Barshis D, Knope ML, Tice KA (2010) K-12 science education and “broader impacts”. *Frontiers in Ecology and the Environment* 8: 217-218
5. **Spalding HL**, Duncan KM, Norcross-Nu’u Z (2009). Sorting out sediment grain size and plastic pollution. *Oceanography* 22: 244-250
4. Sansone FJ, **Spalding H**, Smith CM (2008) Submersible-operated porewater sampler for permeable sediments. *Limnol. Oceanogr: Methods* 6: 119-125
3. Verbruggen H, De Clerck O, N'Yeurt ADR, **Spalding H**, Vroom PS (2006) Phylogeny and taxonomy of *Halimeda incrassata*, including the description of *H. kanaloana* and *H. heteromorpha* spp. nov. (Bryopsidales, Chlorophyta). *European Journal of Phycology* 41: 337-362
2. Webster JM, Clague DA, Braga JC, **Spalding H**, Renema W, Kelley C, Applegate B, Smith J, Paull CK, Moore JG, Potts D (2006) Drowned coralline algal dominated deposits off Lāna‘i, Hawai‘i: carbon accretion and vertical tectonics over the last 30 ka. *Marine Geology* 225: 223-246
1. **Spalding H**, Foster MS, Heine J (2003) Composition, distribution, and abundance of deepwater (> 30 m) macroalgae in central California. *Journal of Phycology* 39: 273-284

BOOK CHAPTERS & CONTRIBUTIONS

10. **Spalding HL**, Copus JM, Bowen BW, Kosaki RK, Longenecker K, Montgomery AD, Padilla-Gamiño JL, Parrish FA, Roth MS, Rowley SJ, Toonen RJ, Pyle RL (2019) The Hawaiian Archipelago. In: Loya Y, Puglise KA, Bridge TCL (eds) Mesophotic coral ecosystems. Springer, New York
9. **Spalding HL**, Amando-Filho G, Ballantine D, Frederiq S, Leichter J, Nelson W, Slattery M, Tsuda R (2019) Distribution and diversity of mesophotic macroalgae. In: Loya Y, Puglise KA, Bridge TCL (eds) Mesophotic coral ecosystems. Springer, New York
8. Easton EE, Gorny M, Mecho A, Sellanes J, Gaymer C, **Spalding HL**, Aburto J. (2019) Chilean mesophotic coral ecosystems of the Salas y Gómez Ridge. In: Loya Y, Puglise KA, Bridge TCL (eds) Mesophotic coral ecosystems. Springer, New York
7. Rowley SJ, **Spalding HL** (2019). Mesophotic Coral Ecosystems in Pohnpei. In: Loya Y, Puglise KA, Bridge TCL (eds) Mesophotic coral ecosystems. Springer, New York
6. Baker E, Puglise K, Colin PL, Harris PT, Kahng SE, Rooney J, Sherman C, Slattery M, **Spalding HL** (2016) Chapter 2. What are mesophotic coral ecosystems? in Baker, E.K., Puglise, K.A. and Harris, P.T. (eds.) *Mesophotic Reefs – A Life Boat For Coral Reefs?* The United Nations Environment Programme and GRID-Arendal, Nairobi and Arendal.
5. Andradi-Brown D, Laverick J, Bejarano I, Bridge T, Colin PL, Eyal G, Jones R, Kahng S, Reed J, Smith T, **Spalding HL**, Weil E, Wood E (2016) Chapter 6. Threats to mesophotic coral ecosystems and management options. in Baker, E.K., Puglise, K.A. and Harris, P.T. (eds.) *Mesophotic Reefs – A Life Boat For Coral Reefs?* The United Nations Environment Programme and GRID-Arendal, Nairobi and Arendal.
4. Sinniger F, Ballantine DL, Bejarano I, Colin PL, Pochon X, Pomponi SA, Puglise KA, Pyle RL, Reaka ML, **Spalding HL**, Weil E (2016) Chapter 4. Biodiversity of mesophotic coral ecosystems. in Baker, E.K., Puglise, K.A. and Harris, P.T. (eds.) *Mesophotic Reefs – A Life Boat For Coral Reefs?* The United Nations Environment Programme and GRID-Arendal, Nairobi and Arendal.

3. Costa BM, Kendall MS, Rooney J, Parrish FA, Boland RC, Chow M, Lecky J, Montgomery A, **Spalding H** (2012) Prediction of mesophotic coral distributions in the 'Au'au Channel, Hawai'i. NOAA Technical Memorandum NOS NCCOS 149. 44 pp.
2. **Spalding H** (2008) *Halimeda* meadows in Hawai'i. in Vermeij M. (ed) *Coral Reefs of Maui: status, stressors and suggestions*. 60 pp.
1. Smith J, **Spalding H**, Okano R, Smith CM (2008) The Seaweed and Seagrass Communities of Moloka'i. pp. 59-66. in Field, M.E., Cochran, S.A., Logan, J.B., and Storlazzi, C.D., (eds.), *The Coral Reef of South Moloka'i, Hawai'i – Portrait of a Sediment-threatened Fringing Reef*. USGS Scientific Investigations Report, 2007-5101. 180 pp.

In Review/In Revision/In Preparation

Krueger-Hadfield SA, Lees LE, **Spalding HL**, Coons S, Davis D, Griffin S, Merritt K, Priester K, Ray A, Watson R, Widener T, Sotka EE, and CJ Murren. As the mudflat turns: phenological and genetic structure of a non-native alga in a soft-sediment estuary. In preparation. Submitting to *Journal of Phycology*

Spalding HL, Kosaki RK, Wagner D, Tsuda RT, Smith CM, Sherwood AR. Distinct and abundant mesophotic macroalgal assemblages in the Hawaiian Archipelago. Invited to submit to *Frontiers in Marine Science*

Spalding HL, Tsuda R, Sherwood A. Three new species of mesophotic *Distromium* (Dictyotales, Phaeophyceae) from the Hawaiian Archipelago. Submitting to *Journal of Phycology*

Spalding HL, Cox TE, La Valle F, Philippoff J. Recent and long-term shifts in tropical nearshore algal communities identify agents of change. Submitting to *Limnology and Oceanography*

Spalding HL, Smith C. Recovery from disturbance in deep water *Halimeda kanaloana* meadows off Maui, Hawaii. Submitting to *Coral Reefs*

Kane CN, **Spalding HL**, Tissot BN. Reductions in herbivorous coral reef fishes with depth are not limited by availability or nutrient content of algae. Submitting to *Ecology Letters*

RESEARCH GRANTS

Awarded Support

**Chief Scientist includes a significant portion of conception, grant-writing, field work, and data analyses*

2019–2021	PI: NFWF, Hawaii Conservation Program: Papahānaumokuākea
2018–2021	Post-doc and Co-PI: NSF, DEB grant: Mesophotic macroalgae
2018–2020	PI: Haseko Development, Inc.: <i>Chara</i> bioremediation and biogeochemistry
2018–2020	Co-PI: NFWF, Hawaii Conservation Program: Papahānaumokuākea
2017–2020	Co-PI: Seagrant, OPIHI: Examining intertidal change over time
2016–2017	Senior Science Advisor: Seagrant, OPIHI: Our Project In Hawaii's Intertidal
2015–2018	PI: Hilton Hawaiian Village Lagoon contract on biological monitoring
2014–2020	PI: Haseko Development, Inc. contracts on biological monitoring
2014	PI: Haseko Development, Inc. contract on tilapia diet and food preference
2014	PI: Contract to UHM on identification of red alga <i>Limu kohu</i>
2013–2015	PI: Planning Solutions, Inc. contract on ecological characterization of <i>Chara</i> , plankton, & irradiance in Wai Kai Lagoon
2013–2014	PI: Contract to Bishop Museum on taxonomic research for holistic management of coastal ecosystems
2013	PI: Planning Solutions, Inc. contract on growth of <i>Chara</i> and inventory of flora, fauna, & plankton in Wai Kai Lagoon
2012–2017	Post-doc and Chief Scientist*: NOAA Papahānaumokuākea Nat'l Mon.

2007–2012 **Co-PI:** NOAA award NA07NOS4780188 Mesophotic Coral Eco. Div.
 2007–2009 **PI:** UHM NSF GK-12 Ecol., Evol., and Cons. Biology Research Award
 2006–2007 **Co-PI** NOAA award NA05NOS4261157, Hawai'i Coral Reef Initiative
 2004–2006 **Co-PI:** NOAA award NA04OAR4300143, Nat'l Undersea Research Center
 2004–2006 **Co-PI:** NOAA award NA04OAR4600100, Ocean Exploration
 2004–2006 **Co-PI:** NOAA Hawai'i Undersea Research Lab.; 20 days of submersible ops.
 2003–2004 **Chief Scientist*:** UHM Ecology, Evolution and Conservation Biology Award
 1999–2000 **Chief Scientist*:** Monterey Bay Aquarium Research Institute; estimate for 10 days of ROV Ventana and R/V Point Lobos ops.

SCHOLARSHIPS AND AWARDS

2018 Invitee, Gordon Research Conference, Mesophotic Coral Ecosystems
 2017 Invitee, National Academy of Sciences Indonesian-American Kavli Frontiers in Sci. Symp.
 2017 Finalist, Hilda-Canter Lund Annual Photography Award, British Phycological Society
 2010 Provasoli Award, Outstanding paper in the *Journal of Phycology*
 2009 UHM Dai Ho Chun Dissertation Award (\$2,000)
 2009 Runner-up, Best Student Presentation, Hawaii Conservation Conference
 2008–2010 NSF GK-12 Teaching Fellowship
 2004 Best Student Presentation, 29th Annual Albert L. Tester Memorial Symp. (\$1000)
 2002 Outstanding Teaching Assistant, UHM Biology Department
 2000 Best Student Presentation, Western Society of Naturalists Conference (\$500)
 2000 John H. Martin Memorial Scholarship, MLML (\$3000)
 1999 Kim Peppard Memorial Scholarship, MLML (\$1000)
 1993–1997 Academic and Volleyball Scholarships, Southampton College, LIU (\$80,000)
 1993 Boone County Forestry Scholarship Award (\$500)

TEACHING EXPERIENCE

2019–present **ASSISTANT PROFESSOR:** College of Charleston, Department of Biology
 -Biology 112: Evolution, Form and Function of Organisms
 -Biology 305: Phycology
 2017 **INSTRUCTOR:** University of Hawaii Manoa, Departments of Botany and Biology
 -Marine Biology 603: Career Skills for Marine Biologists
 -Botany 350: Conservation Biology and Resource Management in Hawaii
 2017 **GUEST LECTURER:** University of Hawaii Manoa
 -Zoology 450: Natural History of the Hawaiian Islands
 -Botany 682: Plant Adaptions to the Marine Environment
 2016 **INSTRUCTOR:** University of Hawaii Manoa
 -Marine Biology 604: Marine Biology Graduate Seminar
 2016 **GUEST LECTURER:** Chaminade University
 -Education Division on STEM Education
 2016 **GUEST LECTURER:** University of Hawaii Manoa
 - Botany 612, Advanced Botanical Problems
 - Biology 404, Adv. Topics in Marine Biology
 - Botany 350, Resource Management and Conserv. Biol
 - Zoology 450, Natural History of the Hawaiian Islands
 2015 **INSTRUCTOR:** University of Hawaii Manoa

- 2014 - Botany 350: Conservation Biology and Resource Management in Hawaii
INSTRUCTOR: University of Hawaii Manoa
- 2014 - Botany 350: Conservation Biology and Resource Management in Hawaii
GUEST LECTURER: University of Hawaii Manoa
- Botany 202: Plant Ecology
- Field Botany: Exploring Hawaii's Wetlands
- Botany 404: Marine Biology Seminar
- 2013 **GUEST LECTURER:** University of Hawaii Manoa
- Botany 100: General Botany
- Botany 682: Plant Adaptions to the Marine Environment
- 2010 **GUEST LECTURER:** University of Hawaii Manoa
- Botany 682: Plant Adaptions to the Marine Environment
- Botany 380: Plant Life in the Sea
- 2009 **GUEST LECTURER:** Hawaii Pacific University
- Current Topics in Marine Science
- 2008 **GUEST LECTURER:** University of Hawaii Manoa
- Marine Ecology and Evolution
- Botany 480: Algal Diversity and Evolution
- 2008 **GUEST LECTURER:** Maui Community College
- Marine Biology Marine Option Program
- 2007 **GUEST LECTURER:** University of Hawaii Manoa
- Botany 480: Algal Diversity and Evolution
- Advanced Topics in Marine Biology
- 2007 **TEACHING ASSISTANT:** University of Hawaii Manoa
- Botany 480: Algal Diversity and Evolution
- 2003 **TEACHING ASSISTANT:** University of Hawaii Manoa
- Plant Physiology
- 2002 **TEACHING ASSISTANT:** University of Hawaii Manoa
- Biology 101: General Biology
- 1998 **TEACHING ASSISTANT:** Moss Landing Marine Laboratories
- Subtidal Ecology
- 1997 **TEACHING ASSISTANT:** Moss Landing Marine Laboratories
- Phycology
- 1997 **TEACHING ASSISTANT:** Southampton College, Long Island University
- Biochemistry
- 1996 **TEACHING ASSISTANT:** Southampton College, Long Island University
- Phycology

RESEARCH EXPERIENCE

- 2007–2012 **GRADUATE RESEARCH ASSISTANT:** University of Hawaii at Manoa
- Mesophotic Coral Ecosystems in Hawaii
- 2006–2007 **GRADUATE RESEARCH ASSISTANT:** University of Hawaii at Manoa
- Physiology and growth of invasive algal species
- 2004–2006 **GRADUATE RESEARCH ASSISTANT:** University of Hawaii at Manoa
- Growth, production, and ecology of calcified algal meadows
- 2003–2004 **GRADUATE RESEARCH ASSISTANT:** University of Hawaii at Manoa (UHM)
- Ecological and physiological characteristics of algal blooms

- 2000–2001 **RESEARCH TECHNICIAN:** Hydro-optics and Biological Instrumentation
-Physiology of seagrass anti-fouling derivatives
- 1999–2001 **RESEARCH ASSISTANT:** Moss Landing Marine Laboratories (MLML)
-Abundance and distribution of deep water macroalgae
- 1999–2000 **RESEARCH TECHNICIAN:** California State Water Quality Control Board
-Water quality monitoring of the Pajaro River watershed
- 1996 **RESEARCH ASSISTANT:** Plum Island Animal Disease Center, NY
-Isolation of Hoof and Mouth disease virus from bovine macrophages
- 1994 **RESEARCH ASSISTANT:** Portobello Marine Laboratories, New Zealand
-Stereo-video measurements of fish
- 1994 **RESEARCH ASSISTANT:** Leigh Marine Laboratories, New Zealand
-Abalone reproduction and lobster growth

PROFESSIONAL ASSOCIATIONS

American Society of Limnology and Oceanography, International Coral Reef Society, Phycological Society of America, Western Society of Naturalists

PROFESSIONAL EXPERIENCE & SERVICE

Journal Reviewing: PLoS ONE, Marine Ecology Progress Series, Coral Reefs, Marine Biodiv. Records, PeerJ
Grant Reviewing: NOAA National Undersea Research Program, NSF Biological Oceanography

- 2020–present **EDITORIAL BOARD:** *Journal of Phycology*
- 2018–present **VICE CO-CHAIR:** Gordon Research Conference, Mesophotic Coral Ecosystems
- 2017–present **COMMITTEE CHAIR:** Phycological Soc. of Am. Student Awards Committee
- 2014–2016 **ORGANIZING COMMITTEE:** Phycological Soc. of Am. Student Awards Committee
- 2016–2017 **SESSION MODERATOR:** Phycological Society of America
- 2016 **REVIEWER:** UHM Undergraduate Research Opportunities Program
- 2016 **SESSION CO-CHAIR:** Mesophotic Ecosystems, International Coral Reef Symposium
- 2015 **WORKSHOP PARTICIPANT:** Closing the Loop: Practical Applications for CORE Competencies Assessment, UHM
- 2010 **GRADUATE STUDENT REPRESENTATIVE:** Ecology, Evol. and Conservation Biol. Program
- 2008 **FACILITATOR:** NOAA Nuisance Algal Blooms EcoHAB Workshop
- 2002–2009 **ORGANIZING COMMITTEE:** UHM Diving Safety Control Board
- 2001 **SESSION CHAIR:** Western Society of Naturalists Meeting
- 1998–2002 **ORGANIZING COMMITTEE:** MLML Diving Safety Control Board

MENTORING, EDUCATION & OUTREACH

- 2016–2019 **MENTOR:** OPIHI (Our Project In Hawaii's Intertidal) program, UHM
- 30 undergraduate interns (7 intensively)
- Guest Lecturer/Scientific Advisor for 76 High school teachers
- OPIHI program has reached over 1000 students G5-12 statewide over the last two years through mentored interns/teachers
- 2016 **MENTOR:** NOAA NCCOS Environmental Sci. and Policy undergrad. internship program
- 1 undergraduate student from Middlebury College
- 2015–present **OUTREACH COORDINATOR:** Invasive algae clean-ups, outreach, and education
- 120 preschoolers at University of Hawaii Children's Center
- 80 kindergarteners at Mid-Pacific Institute

- 250 community members from Ewa, Oahu
- 2015 **WORKSHOP PRESENTER:** AAUW Tech Savvy Conf. for Young Women
 - 15 middle school female students
- 2014 **WORKSHOP PRESENTER:** Expanding Your Horizons Conference for Young Women
 - 20 middle school female students
- 2013–2014 **WORKSHOP PRESENTER:** Sacred Hearts Academy Annual Science Symposium for Girls
 - 40 middle school female students
- 2011 **MENTOR:** Hawaii State Science Fair Projects
 - 2 high school female students
- 2009 **MENTOR:** NSF Undergraduate Mentoring in Environmental Biology
 - 1 undergraduate student from UHM
- 2008–2010 **NSF GK-12 TEACHING FELLOW:** Seabury Hall, Hui Malama Learning Center, and UHM
 - Mentored 5 high school and middle school teachers with ~150 students
- 2008–2010 **OUTREACH COORDINATOR:** NOAA Teacher-at-Sea and Ask-a-Scientist-at-Sea programs
 - Coordinated outreach for 3 high school teachers and 15 scientists to engage with >5000 students in authentic research onboard cruises via blogs and presentations

INVITED SPEAKING ENGAGEMENTS

- 2019 **INVITED SPEAKER:** Fort Johnson Marine Science Seminar Series, CofC, SC
- 2019 **PLENARY SPEAKER:** Southeastern Phycological Colloquy, Birmingham, AL
- 2017 **INVITED SPEAKER:** SEEQS: School for Examining Essential Questions of Sustainability
- 2017 **GUEST SPEAKER:** Ecology, Evol., and Conservation Biology, UHM, Seminar Series
- 2016 **GUEST SPEAKER:** Department of Oceanography, UHM, Seminar Series
- 2016 **GUEST SPEAKER:** Department of Botany, UHM, Seminar Series
- 2016 **INVITED SPEAKER:** Our Project In Hawaii's Intertidal Program, UHM
- 2015 **INVITED SPEAKER:** Science Alive! Bishop Museum
- 2014 **GUEST SPEAKER:** Ecology, Evol., and Conservation Biology, UHM, Seminar Series
- 2012 **GUEST SPEAKER:** Sigma Xi Science Café
- 2008 **GUEST SPEAKER:** Hanauma Bay Education Program Lecture Series
- 2008 **GUEST SPEAKER:** Maui Ocean Center, Sea Talk Series
- 2004 **GUEST SPEAKER:** Hopkins Marine Station, Stanford University
- 2004 **GUEST SPEAKER:** Moss Landing Marine Laboratories, Seminar Series

ORAL and/or POSTER PRESENTATIONS (as primary author)

- 35. (2019) Losing large brown algae: dramatic shifts in macroalgal assemblages over 50 years in Waikiki, Oahu. Phycological Society of America Conference, Fort Lauderdale, FL, June 23-27.
- 34. (2018) Distinct and abundant mesophotic macroalgal assemblages in the Hawaiian Archipelago. Symposium on Science in Support of Archipelago Management, Honolulu, HI, Nov 19-20.
- 33. (2018) Dramatic shifts in macroalgal assemblages over 50 years in Waikiki, south O'ahu. Hawaii Conservation Conference, Honolulu, HI, July 24-26.
- 32. (2018) Distinct and abundant mesophotic macroalgal assemblages in the Hawaiian Archipelago. Phycological Society of America Conference, Vancouver, B.C., July 29-Aug 2.
- 31. (2018) Mesophotic macroalgae: Perspectives from the Hawaiian Archipelago. Gordon Research Conference on Mesophotic Coral Ecosystems, Portland, Maine, June 18-22
- 30. (2017) Mesophotic coral ecosystems in the Hawaiian Archipelago: Hidden gardens of the deep. Indonesian-American Kavli Frontiers in Science Symposium, Ambon, Indonesia, July 18-21.

29. (2017) Seeing the forest for the trees: Recent and long-term shifts in tropical nearshore algal communities identify agents of change. Phycological Soc. of America, Monterey, CA, June 4-8.
28. (2017) A 25 year perspective reveals past and recent shifts in tropical nearshore algal assemblages; Biodiversity of mesophotic macroalgae across the Hawaiian Archipelago. American Society of Limnology and Oceanography meeting, Honolulu, HI, Feb 26-Mar 3.
27. (2016) A tale of kiwis, kangaroos, and limu: resolving mesophotic Sporochytriales (Phaeophyceae) from the Hawaiian Archipelago. Phycological Society of America, Cleveland, OH, July 24-28.
26. (2016) Mesophotic macroalgae across the Hawaiian Archipelago: deciphering the diversity and distribution of deep limu. International Coral Reef Symposium, Honolulu, HI, June 19-24.
25. (2015) Deciphering *Distromium* diversity from the deep: unique mesophotic species from the Hawaiian Archipelago; Colonization and abundance of *Chara zeylanica* in a tropical lagoon. Phycological Society of America meeting, Philadelphia, PA, Aug 9-13.
24. (2014) New mesophotic Ulvales (Ulvophyceae, Chlorophyta) from across the Hawaiian Archipelago reveal unique communities and biogeographic patterns. Joint Aquatic Sciences Meeting, Portland, OR, May 18-23.
23. (2014) Ecological significance of dominant mesophotic macroalgal assemblages across the Hawaiian Archipelago, 17th Ocean Sciences meeting, Honolulu, HI, Feb 23-28.
22. (2013) Biodiversity of mesophotic macroalgae in the Papahānaumokuākea Marine National Monument, Northwestern Hawaiian Islands, Joint meeting of the Phycological Society of America and 10th International Phycological Congress, Orlando, FL, Aug 4-10.
21. (2012) Ecophysiology of mesophotic coral and macroalgae in Hawai'i: High primary production in low light conditions. American Society of Limnology and Oceanography Aquatic Sciences meeting, San Juan, Puerto Rico, Feb 13-18.
20. (2012) Mesophotic macroalgal assemblages in the Main and Northwestern Hawaiian Islands. 5th Annual Hawaiian Islands Symposium, Honolulu, HI, May 2.
19. (2011) Mesophotic corals and associated *Symbiodinium* genetics. NOAA CRES Program Meeting, HI, Aug 19.
18. (2010) Physiology of mesophotic coral and algae in Hawai'i; NOAA CRES Prog. Mtg, HI, Aug 27.
17. (2009) Adventures of a teacher-at-sea: integrating research with environmental education. OCEANIA Marine Educators Conference, Honolulu, HI, Oct 3.
16. (2009) Deepwater *Halimeda* meadows in Hawai'i: The *Ohia* of the ocean, Hawai'i Conservation Conference, Honolulu, HI, July 28-30. **Runner-up, Best Student Presentation**
15. (2009) The University of Hawai'i at Mānoa Graduate K-12 Program: Integrating research with environmental education through student-scientist-teacher partnerships. Hawai'i Conservation Conference, Honolulu, HI, July 28-30.
14. (2009) Discovering deepwater algal meadows in Hawai'i: Home is where the *Halimeda* is. American Soc. of Plant Biologists and the Phycological Soc. of America, Honolulu, HI, July 18-22.
13. (2009) Discovering deepwater algal meadows in Hawai'i: Home is where the *Halimeda* is. NSF GK-12 Annual Meeting, Washington, D.C., Mar 22-25.
12. (2009) Discovering mesophotic macroalgae in Hawai'i: A surprisingly diverse assemblage from the deep. 11th Pacific Science Inter-Congress, Papeete, Tahiti, March 2-6.
11. (2008) Ecological processes in *Halimeda kanaloana* meadows in Hawai'i from 10 to 90 m depths. International Coral Reef Symposium, Fort Lauderdale, FL, July 7-11.
10. (2006) Distribution of deep-water algal assemblages in Hawai'i using current and archived submersible and ROV video. AGU/ASLO Ocean Sciences meeting, Honolulu, HI, Feb 20-24.
9. (2005) Demography and growth of *Halimeda* meadows in Hawai'i: Making sand in paradise. Western Society of Naturalists meeting, Monterey Bay, CA, Nov 17-20.

8. (2004) Deep thoughts in muddy waters: Deep water macroalgae as water clarity bioindicators? UHM Albert L. Tester Memorial Symposium, Honolulu, HI, Mar 11-12. **Best Student Presentation**
7. (2004) Algae on ancient volcanoes: deep water macroalgal communities in Hawai'i. Western Society of Naturalists meeting, Rhonert Park, CA, Nov 11-14.
6. (2004) Macroalgal and nutrient dynamics across a depth gradient in a coral reef community in West Maui, Hawai'i. ASLO/TOS Ocean Research Conference, Honolulu, HI, Feb 15-20.
5. (2003) Deep-water macroalgae, light, and the space-time continuum: temporal and spatial patterns in central California. Int'l Temperate Reef Symposium, Christchurch, NZ, Jan 13-17.
4. (2003) Deep thoughts in muddy waters: Testing the use of deep-water (> 30 m) macroalgae as water clarity bioindicators using a natural turbidity gradient from the Carmel River. Western Society of Naturalists meeting, Long Beach, CA, Nov 7-10.
3. (2001) To dive or not to dive: SCUBA versus ROV sampling of macroalgae at 30 m depth. Western Society of Naturalists meeting, Ventura, CA, Nov 10-12.
2. (2001) To dive or not to dive: SCUBA versus ROV sampling of macroalgae at 30 m depth. Phycological Society of America meeting, Estes Park, CO, June 23-28.
1. (2000) Deep water macroalgae in central California: how low can they go? Western Society of Naturalists meeting, Portland, OR, Dec 26-30. **Best Student Presentation**

ELECTRONIC RESOURCES:

<http://seagrant.soest.hawaii.edu/deep-sea-algae/>
<http://seagrant.soest.hawaii.edu/deep-sea-algae/>
<http://oceanexplorer.noaa.gov/explorations/04algae/welcome.html>
https://www.researchgate.net/profile/Heather_Spalding

DIVING EXPERIENCE (24 years)

PADI Basic SCUBA	TDI Inspiration Rebreather	IANTD Technical Diver
NAUI Divemaster	IANTD Advanced EANx Diver	IANTD Closed Circuit Rebreather
AAUS, UH Scientific Diver	IANTD EANx Blender	

UNDERGRADUATE AND GRADUATE STUDENTS SUPERVISED

Lindsay Veazy (Ph.D.)	University of Hawaii at Manoa
Nicholas Strait (MS)	College of Charleston
Taylor Williams (MS)	College of Charleston
Cassandra Evanchuck (MS)	College of Charleston
Karli Hollister (MS)	University of the Virgin Islands
Jaidyn Zehner (BS)	College of Charleston
Liesel Robbins (BA)	Middlebury College
Alexa Foster (BS)	University of Hawaii at Manoa
Laura Colgan (BS)	University of Hawaii at Manoa
Catherine Cyr (BS)	University of Hawaii at Manoa