

SANTIAGO HERRERA

Lehigh University
 Department of Biological Sciences
 111 Research Drive
 Bethlehem, PA 18015

Phone: +1 484-456-0902
sherrera@alum.mit.edu
santiagoherrera.github.io
[Google Scholar Profile](#)

EDUCATION

- 2014 Ph.D. Biological Oceanography. **Massachusetts Institute of Technology (MIT) & Woods Hole Oceanographic Institution (WHOI)**, MA, USA.
- 2009 M.Sc. Biological Sciences. **Universidad de los Andes**, Bogotá, Colombia.
- 2007 B.Sc. Microbiology. **Universidad de los Andes**, Bogotá, Colombia
- 2007 B.Sc. Biology. **Universidad de los Andes**, Bogotá, Colombia

ACADEMIC & RESEARCH APPOINTMENTS

- 2016- **Visiting Assistant Professor**. Biological Sciences. Lehigh University, Bethlehem, PA, USA
- 2016- **Guest Investigator**. Temple University, Philadelphia, PA, USA
- 2015-16 **CIHR Postdoctoral Fellow**. Centre for Environmental Epigenetics and Development. Biological Sciences Department. University of Toronto, Toronto, ON, Canada.
- 2015- **Guest Investigator**. WHOI, Woods Hole, MA.
- 2009-14 **Graduate Research Assistant**. Molecular Ecology and Evolution Laboratory. Biology Department. WHOI, Woods Hole, MA.
- 2008-9 **Smithsonian Graduate Fellow**. Invertebrate Zoology Department & Laboratories of Analytical Biology, National Museum of Natural History. Smithsonian Institution, Washington, DC, USA.
- 2008 **United States Antarctic Program Intern**. Invertebrate Zoology Department, National Museum of Natural History. Smithsonian Institution, Washington, DC, USA.
- 2007 **Research Training Program Intern**. Invertebrate Zoology Department & Laboratories of Analytical Biology, National Museum of Natural History. Smithsonian Institution, Washington, DC.
- 2006-9 **Research Assistant**. Marine Molecular Biology Laboratory. Department of Biological Sciences. Universidad de los Andes. Bogotá, Colombia.

PUBLICATIONS IN PEER-REVIEWED JOURNALS (* indicates equal contributions)

1. De Vega W.C., **S. Herrera**, S.O. Vernon & P.O. McGowan (2017) Epigenetic modifications and glucocorticoid sensitivity in Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS). *BMC Medical Genomics* 10(1):11 <http://doi.org/10.1186/s12920-017-0248-3>
2. Cordes E.E., D.O. Jones, T.A. Schlacher, D.J. Amon, A.F. Bernadino, B.J. Bett, S. Brooke, R. Carney, D.M. DeLeo, K.M. Dunlop, Elva G. Escobar-Briones, A.R. Gates, L. Genio, J. Gobin, Lea-A. Henry, **S. Herrera**, S. Hoyt, S. Joye, S. Kark, N.C. Mestre, A. Metaxas, S. Pfeifer, K. Sink, A.K. Sweetman, U.F.

- Witte (2016) Environmental impacts of the deep-water oil and gas industry: a review to guide management strategies. *Frontiers in Environmental Science*, 24:58 <http://doi.org/10.3389/fenvs.2016.00058>
3. **Herrera S.** & Shank T.M. (2016) RAD sequencing enables unprecedented phylogenetic resolution and objective species delimitation in recalcitrant divergent taxa. *Molecular Phylogenetics and Evolution*, 100:70-79 <http://dx.doi.org/10.1016/j.ympev.2016.03.010>.
 4. **Herrera S.**, P.H. Reyes-Herrera & T.M. Shank (2015) Predicting RAD-seq marker numbers across the eukaryotic tree of life. *Genome Biology and Evolution*, 7(12): 3207-3225. <http://dx.doi.org/10.1093/gbe/evv210>. Git code repository: <https://github.com/phrh/PredRAD>
 5. Reyes-Herrera P.H., C.A. Speck-Hernandez, C.A. Sierra & **S. Herrera** (2015) BackCLIP: a tool to identify common background presence in PAR-CLIP datasets. *Bioinformatics*, 31(22): 3703-3705. <http://doi.org/10.1093/bioinformatics/btv442>.
 6. **Herrera S.**, H. Watanabe & T.M. Shank (2015) Evolutionary history and biogeographical patterns of barnacles from deep-sea hydrothermal vents. *Molecular Ecology*, 24(3): 673-689. <http://doi.org/10.1111/mec.13054>
 7. Reitzel A.M.*, **S. Herrera***, M.J. Layden, M.Q. Martindale & T.M. Shank (2013) Going where traditional markers have not gone before: utility and promise for RAD-sequencing in marine invertebrate phylogeography and population genomics. *Molecular Ecology*, 22(11): 2953-2970. Special Issue: Genotyping by Sequencing. <http://doi.org/10.1111/mec.12228>.
 8. **Herrera S.** T.M. Shank & J.A. Sánchez (2012) Spatial and temporal patterns of genetic variation in the widespread antitropical deep-sea coral *Paragorgia arborea*. *Molecular Ecology*, 21(24): 6053-6067. <http://doi.org/10.1111/mec.12074>.
 9. Shank T.M., E.T Baker, R.W. Embley, S. Hammond, J.F. Holden, S. White, S.L. Walker, M. Calderón, **S. Herrera**, *et al.* (2012) Exploration of the deepwater galápagos region. *Oceanography* 25: 50-51. <http://dx.doi.org/10.5670/oceanog.2011.supplement.01>.
 10. Shank T.M., **S. Herrera**, W. Cho, C.N. Roman, K.L.C. Bell (2011) Exploration of the Anaximander mud volcanoes. *Oceanography* 24 Suppl.: 22-23. <http://dx.doi.org/10.5670/oceanog.24.1.supplement>.
 11. Sánchez J.A., **S. Herrera**, R. Navas-Camacho, A. Rodríguez-Ramírez, P. Herron, V. Pizarro, A.R. Acosta, P.A. Castillo, P. Montoya & C. Orozco (2010) White plague-like coral disease in remote reefs of the Western Caribbean. *International Journal of Tropical Biology and Conservation*, 58(Suppl. 1): 145-154. <http://doi.org/10.15517/rbt.v58i1.20031>.
 12. **Herrera S.**, A. Baco & J.A. Sánchez (2010) Molecular systematics of the bubblegum coral genera (Paragorgiidae, Octocorallia) and description of a new deep-sea species. *Molecular Phylogenetics and Evolution*, 55(1): 123-135. <http://dx.doi.org/10.1016/j.ympev.2009.12.007>.

PUBLICATIONS IN NON-REFEREED JOURNALS

1. Mills S., D. Leduc, J. C. Drazen, P. Yancey, A.J. Jamieson, M.R. Clark, A.A. Rowden, D. J. Mayor, S. Piertney, T. Heyl, D. Bartlett, J. Bourque, W. Cho, A. Demopoulos, P. Fryer, M. Geringer, E. Grammatopoulou, **S. Herrera**, M. Ichino, B. Lecroq, T.D. Linley, K. Meyer, C. Nunnally, H. Ruhl, G. Wallace, C. Young and T.M. Shank (2016). 10,000 m under the sea: an overview of the HADES expedition to Kermadec Trench. In B. Golder and A. Connell (Eds.) Proceedings of Kermadec – Discoveries and Connections. Paper presented at Kermadec – Discoveries and Connections, Wellington, New Zealand (Pp 36–38). The Pew Charitable Trusts.
2. **Herrera S.** & Sánchez J.A. (2013) Un coral a la conquista de los océanos profundos (A coral conquering the deep oceans). *Revista Hipótesis: apuntes científicos uniandinos*. Universidad de los Andes. Bogotá. (Special Anniversary Number): 76-79. <http://hipotesis.uniandes.edu.co/hipotesis/ediciones/especial-2013/>

3. **Herrera S.**, C.A. Hernandez & E. Bahamón (2008) Guerreros fantasmales: comportamiento competitivo en el cangrejo *Ocypode gaudicaudii* de la isla Gorgona (Ghostly warriors: competitive behavior of the crab *Ocypode gaudicaudii* in the Gorgona island). *Revista Hipótesis: apuntes científicos uniandinos*. Universidad de los Andes. Bogotá. (9): 34-35. http://issuu.com/revistahipotesis/docs/hipotesis_9/39?e=5734754/2477767

RESEARCH FUNDING

- 2017-18 **Co-Principal Investigator**. Faculty Innovation Grant, Lehigh University, USA. Investigating role of epigenetic changes and differential gene regulation in animal regeneration.
- 2017-18 **Co-Principal Investigator**. Ray Dalio Foundation, USA. COLDEX Exploration of the Unknown Deep Caribbean of Colombia.
- 2017 **Principal Investigator**. National Oceanic and Atmospheric Administration, Office of Ocean Exploration and Research, University Corporation for Atmospheric Research Subaward Z17-28063, Climate Adaptation and Mitigation Program, USA. EX1702 American Samoa Expedition.
- 2015-17 **Principal Investigator**. Canadian Institutes of Health Research, Ottawa, Canada. Research allowance.
- 2013-14 **Principal Investigator**. National Geographic Society / Waitt Foundation. Washington, DC, USA.
- 2011-13 **Co-principal Investigator**. Ocean Life Institute and Deep Ocean Exploration Institute. WHOI, Woods Hole, MA, USA.
- 2011-12 **Principal Investigator**. Ocean Ventures Fund. WHOI, Woods Hole, MA, USA.
- 2008 **Principal Investigator**. Systematics Research Fund of the Systematics Association & the Linnean Society of London. London, United Kingdom.
- 2007-8 **Co-principal Investigator**. CenSeam Grant (Global Census of Marine Life on Seamounts CenSeam – part of the worldwide Census of Marine Life CoML project).
- 2007 **Principal Investigator**. Sigma Xi Grant-In-Aid of Research.

AWARDS & HONORS

- 2015 Postdoctoral Fellowship. Canadian Institutes of Health Research (CIHR), Canada.
- 2014 Banting Postdoctoral Fellowship institutional nomination. University of Toronto, Canada.
- 2014 Graduate Student Fellowship. Deep Ocean Exploration Institute, WHOI, Woods Hole, MA.
- 2012-14 MIT Student Assistance Fund award (three times). MIT, Cambridge, MA.
- 2012 Outstanding Student Presentation Award, 2012 Ocean Sciences Meeting, Salt Lake City, UT, USA.
- 2010 Outstanding Student Paper Award, American Geophysical Union, Fall Meeting, San Francisco, CA, USA.
- 2009-14 Graduate Research Fellowship, WHOI, Woods Hole, MA.
- 2008 Smithsonian Graduate Fellowship. Smithsonian Institution, Washington, DC.
- 2008 Foundation for the Promotion of Research and Technology award, Bank of the Republic of Colombia, Bogotá, Colombia.

ACADEMIC JOURNAL REVIEWER

Molecular Ecology
 Molecular Phylogenetics and Evolution
 Bioinformatics
 Symbiosis

PLoS ONE
 Deep-Sea Research Part I
 Deep-Sea Research Part II
 Evolutionary Applications

ACADEMIC GRANT PROPOSAL REVIEWER

- Division of Ocean Sciences, Biological Oceanography, U.S. National Science Foundation.
- Office of Exploration and Research, U.S. National Oceanographic and Atmospheric Administration.

SELECT CONFERENCE PRESENTATIONS

- 2016 Talk. 6th International Deep-Sea Coral Symposium, Boston, MA, USA.
- 2015 Two talks and poster. 14th Deep-Sea Biology Symposium, Aveiro, Portugal.
- 2014 Talk. Evolution Meeting 2014, Raleigh, NC, USA.
- 2013 Poster. Evolution Meeting 2013, Snowbird, UT, USA.
- 2013 Poster. Society for Molecular Biology and Evolution, Chicago, IL, USA.
- 2012 Talk and poster. 13th Deep-Sea Biology Symposium, Wellington, New Zealand.
- 2012 Two talks. 5th International Deep-Sea Coral Symposium, Amsterdam, Netherlands.
- 2012 Talk. 2012 Ocean Sciences Meeting, Salt Lake City, UT, USA. **Outstanding Student Presentation Award**
- 2010 Talk and poster. AGU Fall Meeting, American Geophysical Union, San Francisco, CA, USA. **Outstanding Student Paper Award**
- 2008 Talk. 4th International Deep-Sea Coral Symposium, Wellington, New Zealand.
- 2008 Poster. 11th International Coral Reef Symposium, Ft. Lauderdale, FL, USA.
- 2008 Talk. Evolution Meeting 2008, Minneapolis, MN, USA.

INVITED SEMINARS & PRESENTATIONS

- 2016 Lehigh University, Department of Earth and Environmental Sciences, Bethlehem, PA., USA
- 2016 Lehigh University, Department of Biological Sciences, Bethlehem, PA., USA
- 2015 University of Toronto Scarborough, Department of Biological Sciences, Toronto, Canada.
- 2015 Norwegian University of Science and Technology, Department of Biology and Natural History Museum, Trondheim, Norway.
- 2015 Pontificia Universidad Javeriana, Biology Department, Bogotá, Colombia.
- 2015 Universidad de los Andes, Department of Biological Sciences, Bogotá, Colombia.
- 2014 Brown University, Dunn Lab, Providence, RI, USA.
- 2014 Northwest Fisheries Science Center, National Oceanic and Atmospheric Administration, Seattle,

- WA, USA.
- 2013 National Institute of Water and Atmospheric Research, Wellington, New Zealand.
- 2013 WHOI, Biology Department, Woods Hole, MA, USA.
- 2013 WHOI, Challenger Expeditions Biology Forum, Woods Hole, MA, USA.
- 2013 WHOI, Institutional visit of the Admiral Guillermo E. Barrera CNO Distinguished International Fellow at the U.S Naval War College, Woods Hole, MA, USA.
- 2012 WHOI, Institutional visit of the Harbor Branch Oceanographic Institution, Woods Hole, MA, USA.
- 2011 Universidad de los Andes, Department of Biological Sciences, Bogotá, Colombia.
- 2011 WHOI, Institutional visit of British Petroleum plc., Woods Hole, MA, USA.
- 2010 Sam Ratulangi University, Manado, North Sulawesi, Indonesia.
- 2010 Indonesia-US Science Team Workshop, Deep-Sea Exploration in Sangihe-Talaud 2010 (INDEX-SATAL 2010), Manado, North Sulawesi, Indonesia.

SYNERGISTIC ACTIVITIES & PROFESSIONAL SERVICE

- 2016-19 **Organizer**, 7th International Symposium on Deep-Sea Corals, Cartagena, Colombia. (forthcoming)
- 2016- **Invited Steering Scientific Committee member**, Colombian Network of Evolutionary Biology (ColEvol)
- 2015- **Contributing member**, Deep-Ocean Stewardship Initiative (DOSI) Oil & Gas, and Climate Change working groups
- 2015-18 **Elected Governing Board officer**, Membership Secretary of the Deep-Sea Biology Society.
- 2015-16 **Invited Steering Scientific Committee member**, 6th International Symposium on Deep-Sea Corals, Boston, MA.
- 2015 **Invited participant**, Deep Submergence Science Committee (DeSSC) New Users Program, U.S. University-National Oceanographic Laboratory System (UNOLS), San Francisco, California.
- 2014 **Invited participant**, Next Generation Sequencing of Deep Sea Corals Workshop, National Oceanic and Atmospheric Administration (NOAA), Seattle, Washington.
- 2013-14 **Co-founder/convener**. Monthly Challenger Expeditions Biology Forum. WHOI, Woods Hole, MA.
- 2013-14 **Contributing participant**. Bioinformatics Seminar. WHOI, Woods Hole, MA.
- 2013 **Invited emerging taxonomist**, Deep-Sea Coral Taxonomy Workshop, National Institute of Water and Atmospheric Research, Wellington, New Zealand.
- 2013 **Invited participant**, Ocean Exploration 2020: A National Forum, National Oceanic and Atmospheric Administration (NOAA), Aquarium of the Pacific, Long Beach, California.
- 2011 **Invited participant**, Northeast Atlantic Deep-Sea Coral Research Priorities Workshop, National Oceanic and Atmospheric Administration (NOAA) Coral Reef Conservation Program (CRCP), James J. Howard Marine Sciences Lab, Sandy Hook, New Jersey.
- 2011 **Elected student representative and president** of the MIT/WHOI Joint Program Student Organization for the MIT Association of Student Activities. MIT, MA.
- 2010- **Web manager and co-developer**, WHOI, Woods Hole, MA. <http://sba.whoiedu>, Barcoding

Seamount Life: Advancing the capacity to discover, conserve, and manage biodiversity on seamounts, Seamount Barcoding Association.

PROFESSIONAL SOCIETIES MEMBERSHIP

Sigma Xi, The Scientific Research Society; Society of Systematic Biologists (SSB); American Association for the Advancement of Science (AAAS); The Oceanography Society (TOS); American Geophysical Union (AGU); American Society of Limnology and Oceanography (ASLO), American Academy of Underwater Sciences (AAUS), Society for the Study of Evolution (SSE), Society for Molecular Biology and Evolution (SMBE), American Genetic Association (AGA), Deep-Sea Biology Society.

TEACHING EXPERIENCE

- 2017 **Instructor.** *Oceanography*. Lehigh University, Bethlehem, PA.
- 2016 **Instructor.** *Epigenetics*. Lehigh University, Bethlehem, PA.
- 2016 **Instructor.** *Biodiversity in a Changing Planet*. Lehigh University, Bethlehem, PA.
- 2016 **Instructor.** *Epigenetics in Health and Disease*. University of Toronto, ON, Canada.
- 2014 **Instructor.** *Introduction to Oceanography*. WHOI, Woods Hole, MA.
- 2013 **Guest Lecturer.** *Bioinformatics Seminar*. WHOI, Woods Hole, MA. With Dr. Ann Tarrant.
- 2013 **Guest Lecturer.** *Environment Sustainability*. Bunker Hill Community College, Boston, MA.
- 2011 **Guest Lecturer.** *Introduction to Ocean Sciences*. Gordon University, Wenham, MA.
- 2009 **Guest Lecturer.** *Bioinformatics*. Universidad de los Andes, Bogotá, Colombia.
- 2009 **Instructor.** *Phylogenetic Systematics Laboratory*. Universidad de los Andes, Bogotá, Colombia.
- 2007 **Teaching Assistant.** *Marine Ecology*. Universidad de los Andes, Bogotá, Colombia.
- 2007 **Teaching Assistant.** *Phylogenetic Systematics*. Universidad de los Andes, Bogotá, Colombia.
- 2006 **Teaching Assistant.** *Cell Biology*. Universidad de los Andes, Bogotá, Colombia.
- 2006 **Private Tutor.** Biology for high-school seniors (2).

MENTORING

- PhD dissertation committee member for Daniel De Leo (2016 Temple University)
- Mentoring eight Lehigh University undergrads in Computational Biology, and ROV image analyzes, deep-sea oceanographic field work.
- STEM: Science, Technology, Engineering and Mathematics Lehigh Community HHMI Faculty Fellow.
- Training of WHOI undergraduate summer fellows (4) and visiting students (8) in molecular techniques (e.g., DNA extraction, PCR, sequencing), bioinformatic data analysis, results interpretation, scientific presentations and writing.
- Training of undergraduate (6) and high school (2) students at WHOI in faunal identifications and sample processing, ROV operations, and oceanographic fieldwork techniques.

OUTREACH

WEBLOGS

[Discovery of the *Tempus fugit* Vent Field](#), Heyl T., S. Herrera, C. Munro & T.M. Shank (2011) Signature

Exploration: Galápagos Rift Expedition 2011, GALREX 2011, NOAA, Office of Ocean Exploration and Research.

[Exploring the Paramount Seamounts](#), Munro C., **S. Herrera** & T. Heyl (2011) Signature Exploration: Galápagos Rift Expedition 2011, GALREX 2011, NOAA, Office of Ocean Exploration and Research.

[High Biodiversity in the Deep-Sea](#), **Herrera S.** (2010) Signature Exploration: Indonesia-USA Deep-Sea Exploration of the Sangihe Talaud Regions, NOAA, Office of Ocean Exploration and Research.

[Coral reefs in the deep sea](#), **Herrera S.** (2010) KARMA Cruise: Kermadec ARc MinerAls, CenSeam, Census of Marine Life on Seamounts, Census of Marine Life.

[Seeing it First Hand!](#) **Herrera S.** (2009) Signature Exploration: Lophelia II 2009: Deepwater Coral Expedition: Reefs, Rigs and Wrecks, NOAA, Office of Ocean Exploration and Research.

PUBLIC SEMINARS

Herrera S. (2012) Are There True Cosmopolitan Deep-Sea Coral Species? The Case of the Bubblegum Coral *Paragorgia arborea*, Ocean Science Journalism Fellowship, WHOI, Woods Hole, MA.

Herrera S. (2011) Deep-sea Coral Biogeography and Evolution in the Age of Genomics, WHOI Fall Annual Meeting of the Board of Trustees and Corporation, WHOI, Woods Hole, MA.

Herrera S. (2011) Recent Discoveries of Benthic Biodiversity via Telepresence in the Deep-Sea, Ocean Science Journalism Fellowship, WHOI, Woods Hole, MA.

Herrera S., T.M. Shank, L. Madin & D. Fornari (2011) A Journey into Inner Space with WHOI – Galapagos Rift Live Event, NOAA Signature Exploration GALREX 2011, event with prospective donors, WHOI, Woods Hole, MA.

Herrera S. & Shank T.M. (2011) Live from the Galapagos Rift, NOAA Signature Explorations: INDEX-SATAL 2010 and GALREX 2011, Peanut Butter Club, WHOI, Woods Hole, MA.

Herrera S. (2010) Deep Water Corals: Importance, Diversity & Relevance, WHOI Fall Annual Meeting of the Board of Trustees and Corporation, Ocean Life Institute, WHOI, Woods Hole, MA.

K-12 ACTIVITIES

Interactive exploration tours of the R/V Okeanos Explorer. How do we Explore the Deep Ocean. More than 300 students from Samoan and American Samoa middle and high schools. 2017.

Guest Teacher. Marine invertebrate anatomy summer class. The Children's School of Science. Woods Hole, MA. 2012.

Associate Teacher. Science grade 8. Madawaska Middle/High School, Madawaska, Maine. 2010-2012.

Judge. Falmouth Public Schools Science Fair 2011, Falmouth, MA.

NEWS COVERAGE

Lehigh University News (online), [A Journey to the Unexplored Depths of the Pacific Ocean](#), Feb 2017.

Gizmodo (online), [Here Are the Most Incredible Life Forms NOAA Found on Its Latest Deep Sea Dive](#), Feb 2017.

Radio New Zealand International (radio and online), [Scientists find living fossil in American Samoa deep dive](#), Feb 2017.

MIT News (online), [DNA markers tell the story of deep sea adaptation](#), March 2016.

Deep Sea News (online), [Deep-Sea Barnacle Genomics](#), Feb. 2016.

Astrobiology Magazine (online), [Barnacles Explain Life at the Extreme](#), featured by [phys.org](#), Jul. 2015.

Dinero (magazine, printed and online), featured as one of the [‘101 Most Creative and Innovative People in](#)

[Colombia](#)’, Dec. 2013.

CNN in Spanish (television), live interview at the *Encuentro* news show, Aug. 28 2013.

Agencia EFE (online), [Un Colombiano en el grupo del programa de exploración del océano en EEUU](#), (A Colombian in the group of ocean exploration program of the U.S.) featured by [Univision](#), [El Espectador](#), [El Nuevo Herald](#), [CM&](#), [El Colombiano](#), 2013.

El Tiempo (newspaper, front page printed and online editions), [Colombianos dan cátedra sobre un coral gigante](#) (Colombians authorities in giant coral), Feb. 2 2013.

Live Science (online), [How a Bubblegum Coral Conquered the Globe](#), featured by [YAHOO News](#), [MSNBC News](#), [CBS News](#), [Discovery News](#), [Consortium for Ocean Leadership](#), 2012.

WHOI News Release (online), [Genetic Patterns of Deep-Sea Coral Provide Insights into Evolution of Marine Life](#), featured by [Science Daily](#), [Science Codex](#), [e! Science News](#), [phys.org](#), 2012.

Scientific American (online), [Indonesia expedition maps rich undersea life](#), 2010.

Liv Science (online), [Possible New Species Found in Ocean Crossroads](#), featured by [MSNBC News](#), 2010.

U.S. National Oceanographic and Atmospheric Administration News (online), [U.S. and Indonesian Scientists Find Biodiversity Runs Deep in Sulawesi Sea](#), 2010.

SCIENTIFIC FIELD EXPEDITIONS (*TELEPRESENCE)

- 2017 R/V *Okeanos Explorer*, ROV Deep Discoverer, EX1702, American Samoa. **Lead scientist.**
- 2015 *R/V *Okeanos Explorer*, ROV Deep Discoverer, EX1502, Caribbean Sea.
- 2014 R/V *Thomas G. Thompson*, HROV Nereus, TN309, Kermadec Trench, New Zealand.
- 2014 R/V *Tangaroa*, TAN1402, Louisville Seamounts, New Zealand.
- 2013 *R/V *Okeanos Explorer*, ROV Deep Discoverer, EX1304 Northeast U.S. Canyons.
- 2013 Technical scuba diving, British Columbia Fjords, Canada. **Chief Scientist.**
- 2012 R/V *Falkor*, ROV Global Explorer MK3, Gulf of Mexico.
- 2012 *R/V *Okeanos Explorer*, ROV Little Hercules, EX1202 Gulf of Mexico.
- 2011 M/V *Holiday Chouest*, ROV UHD-34, Gulf of Mexico.
- 2011 *R/V *Okeanos Explorer*, ROV Little Hercules, EX1103, Galápagos Rift.
- 2011 RSS *James Cook*, ROV Isis, JC055, Bransfield strait & East Scotia Ridge.
- 2010 *E/V *Nautilus*, ROV Hercules, NA010, Anaximander Seamounts, Turkey. **Dive lead**
- 2010 R/V *Okeanos Explorer*, ROV Little Herc, EX1004L3, Sangihe Talaud, Indonesia. **Lead scientist**
- 2010 *R/V *Okeanos Explorer*, ROV Little Herc, EX1004L2, Sangihe Talaud, Indonesia.
- 2010 R/V *Tangaroa*, KARMA TAN1007, Kermadec arc, New Zealand.
- 2009 R/V *Ronald H. Brown*, ROV *Jason II*, *Lophelia II*, Gulf of Mexico.
- 2009 SSV *Corwith Cramer*, Atlantis Canyon, North Atlantic Ocean.

ADDITIONAL TRAINING

Early Career Investigators Workshop, Deep Submergence Science Committee (DeSSC) of the University-

National Oceanographic Laboratory System (UNOLS), San Francisco, California, USA, 2015.

Ontario Summer School on High Performance Computing, SciNet, Toronto, 2015.

Workshop Deep-Sea Coral Taxonomy, National Institute of Water and Atmospheric Research, Wellington, New Zealand, 2013.

AAUS Scientific Diver, WHOI, since 2012 (dry suit, cold-water, technical diving).

Workshop Identification of Deep-Sea Corals from Imagery Data, Amsterdam, Netherlands. 2012.

Workshop on Genomics, Cesky Krumlov, Czech Republic. 2012.

Workshop on Molecular Evolution, Marine Biological Laboratory, Woods Hole, MA. 2009.

Advanced SCUBA Diver (PADI & NAUI), EANx Diver (NAUI), and oxygen administrator (DAN). Diving frequently since 2002.