



## Jason Seth Goldstein, PhD.

*Research Director*

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### ACADEMIC TRAINING

- 2012-2014 U.S. Fulbright Post-Doctoral Research Fellowship, University of Haifa, Israel  
 2012 Ph.D. (Zoology) University of New Hampshire  
 2007 M.S. (Marine Ecology) Old Dominion University  
 2000 C.M.S. (Museum Studies and Administration) Harvard University Extension School  
 1993 B.S. (Biology) University of Massachusetts Dartmouth

### PROFESSIONAL APPOINTMENTS

- 2016-current Research Director, Wells National Estuarine Research Reserve (NOAA-OCM)  
 2021-current Affiliate Research Professor, University of New Hampshire, School of Marine Science and Ocean Engineering (SMSOE) & Institute for the Study of Earth, Oceans, and Space (EOS)  
 2015-current Adjunct Assistant Professor, York County Community College  
 2014-2015 Assistant Professor, Eastern Connecticut State University (1-yr faculty appointment)

### ACADEMIC HONORS & AWARDS

- 2012-2014 Fulbright Post-doctoral Research Fellow, Leon Recanati Institute for Maritime Studies, Department of Maritime Civilizations, University of Haifa, Israel  
 2011-2012 NOAA National Estuarine Reserve Research (NERRS) Fellowship, Great Bay Estuary  
 2011 George M. Moore Scholarship Fund, Univ. New Hampshire  
 2008 Crustacean Society Graduate Fellowship in Ecology  
 2007-2010 Graduate Teaching Fellowships, Univ. New Hampshire  
 2003 NSF East Asia Fellowship, National Fisheries Research Center, Japan

### PUBLICATIONS IN REVIEW & PREPARATION

Burdick, D., C. Peter, **J. Goldstein**, M. Tyrrell, K. Raposa, B. Fischella, J. Allen. (in-prep). Changes in plant communities associated with sea level rise across New England salt marshes.

Dorrance, A.N., **J.S. Goldstein**, J.T. Carloni, B.C. Gutzler, and W.H. Watson III. (submitted). Sublethal behavioral and physiological effects of claw removal on Jonah Crabs (*Cancer borealis*)

Zarella Smith, K., J. Woodall, A. Ryan, N.B. Furey, and **J.S. Goldstein**. (submitted). Characterizing seasonal movements of the invasive green crab, *Carcinus maenas*, in an estuary using acoustic telemetry. Biological Invasions.

Gutzler, B.C, N.N. Spada, S. Sykes, **J.S. Goldstein**, and W.H. Watson III. (in-review). Ocean acidification impairs the ability of American lobsters (*Homarus americanus*) to respond to food odors. Scientific Reports.

**Goldstein, J.S.**, and Carloni, J.T. (in-review). Assessing the implications of live claw removal on Jonah crab (*Cancer borealis*), an emerging fishery in the Northwest Atlantic. Fisheries Research.

**PEER-REVIEWED PUBLICATIONS (34)**

Crane, L.C., **J.S. Goldstein**, D. Thomas, K. Rexroth, and A. Watts. 2021. Effects of life state on eDNA detection of the invasive European green crab (*Carcinus maenas*) in estuarine systems. Ecological Indicators. 124: 107412.

Carloni, J.T., **J.S. Goldstein**, and W.H. Watson III. 2021. Movement and activity patterns of acoustically-monitored egg-bearing American lobsters, *Homarus americanus*. Marine Ecology Progress Series. 661: 163-173.

**Goldstein, J.S.** and E. Spanier. 2020. Potential effects of elevated temperature on seasonal movements in slipper lobsters, *Scyllarides latus* (Latreille, 1803), in the eastern Mediterranean. Mediterranean Marine Science. 21: doi: <http://dx.doi.org/10.12681/mms.22074>.

Moore, E.M., T.G. Langley, **J.S. Goldstein**, and W.H. Watson III. 2020. American lobster, *Homarus americanus*, reproduction and recruitment in a New England Estuary. Estuaries & Coasts. <https://doi.org/10.1007/s12237-020-00759-4>.

**Goldstein, J.S.**, T. Matthews, H. Matsuda, F. Abe, and T. Yamakawa. 2019. Development of larval spotted spiny lobster *Panulirus guttatus* (Latreille, 1804) in culture. J. Crustacean Biology. 39: 574-581. doi:10.1093/jcbiol/ruz055.

Raposa, K.B., **J.S. Goldstein**, K. Wilson-Grimes, J. Mora, P. Stacey, and R.A. McKinney. 2019. A comparative assessment of salt marsh crabs (Decapoda: Brachyura) across the National Estuarine Research Reserves in New England, USA. J. Crustacean Biology. 40: 67-75. doi:10.1093/jcbiol/ruz083.

Furbeck, M.E., L.W. Pollock, J.W. Miller, and **J.S. Goldstein**. 2019. Presence of tholichthys-stage Spotfin Butterflyfish, *Chaetodon ocellatus* (Chaetodontidae) in a southern Maine estuary, Gulf of Maine. Northeast Naturalist. 26: N52-N55.

Wasson, K., K. Raposa, M. Almeida, K. Beheshti, J. Crooks, A. Deck, N. Dix, M. Ferner, **J. Goldstein**, D. Johnson, S. Lerberg, P. Marcum, C. Peter, B. Puckett, J. Schmitt, E. Smith, K. St. Laurent, K. Swanson, M. Tyrrell, and R. Guy. 2019. Pattern and scale: evaluating generalities in crab distributions and marsh dynamics from small plots to a national scale. Ecology. e02813. 10.1002/ecy.2813.

**Goldstein, J.S.** and W.H. Watson III. 2019. Biochemical changes throughout early- and middle-stages of embryogenesis in lobsters (*Homarus americanus*) under varying thermal regimes. Peer-J. 7:e6952 <http://doi.org/10.7717/peerj.6952>.

- Lavalli, K.L., C.N. Malcom, and **J.S. Goldstein**. 2018. Description of pereopod setae of Scyllarid lobsters, *Scyllarides aequinoctialis*, *S. latus*, and *S. nodifer*, with observations on the feeding during consumption of bivalves and gastropods. *Bulletin of Marine Science*. 94: 571-601.
- Jury, S.H., T.G. Langley, B.C. Gutzler, **J.S. Goldstein**, and W.H. Watson III. 2018. Monitoring the behavior of freely moving lobsters with accelerometers. *Bulletin of Marine Science*. 94: 533-553.
- Goldstein, J.S.** and J.D. Shields. 2018. Bait-subsidized diets and their effects on ovigerous American lobsters (*Homarus americanus*). *Aquaculture International*. 26: 1311-1326.
- Clark, A.S., S.H. Jury, **J.S. Goldstein**, T.G. Langley, and W.H. Watson III. 2018. Underwater video surveillance of American lobsters (*Homarus americanus*) to understand saturation levels in lobster traps. *Fishery Bulletin*. 116: 161-170.
- Watson, W.H. III, **J.S. Goldstein**, E.M. Morrissey, H.A. Cole, and T.L. Pugh. 2017. Evidence of mating by sexually immature female American lobsters *Homarus americanus* (H. Milne Edwards, 1837) (Decapoda: Nephropidae). *J. Crustacean Biology*. 37: 2-6.
- Goldstein, J.S.**, E.M. Morrissey, E.D. Moretti, and W.H. Watson III. 2017. A comparison of the distribution and abundance of European green crabs and American lobsters in Great Bay Estuary, New Hampshire, USA. *Fisheries Research*. 189: 10-17.
- Canto-García, A.A., **J.S. Goldstein**, E. Sosa-Cordero, and L. Carrillo. 2016. Abundance and spatial distribution of *Panulirus spp.* phyllosomas off the coast of the Mexican Caribbean. *Bulletin of Marine Science*. 92: 207-227.
- Goldstein, J.S.** and W.H. Watson III. 2015a. Seasonal movements of American lobsters in southern Gulf of Maine coastal waters: Patterns, environmental triggers, and implications for larval release. *Marine Ecology Progress Series*. 524: 197-211. doi: 10.3354/meps11192.
- Goldstein, J.S.** and W.H. Watson III. 2015b. Quantifying the influence of natural inshore and offshore thermal regimes on egg development in the North American lobster, *Homarus americanus*. *Biological Bulletin*. 228: 1-12.
- Goldstein, J.S.**, E.A. Dubofsky, and E. Spanier. 2015. Into a rhythm: Diel activity patterns and behavior in Mediterranean slipper lobsters, *Scyllarides latus*. *ICES Journal of Marine Science*. doi: 10.1093/icesjms/fsv008.
- Spanier, E., K.L. Lavalli, **J.S. Goldstein**, and 14 other co-authors. 2015. A concise review of lobster utilization by worldwide human populations from prehistory to the modern era. *ICES Journal of Marine Science*. doi: 10.1093/icesjms/fsv066.
- Clark, A.S., S.H. Jury, **J.S. Goldstein**, T.G. Langley, and W.H. Watson. 2015. A comparison of American lobster size structure and abundance using standard and ventless traps. *Fisheries Research*. 167: 243-251.
- Goldstein, J.S.**, T.L. Pugh, E.A. Dubofsky, K.L. Lavalli, M. Clancy, and W.H. Watson. 2014. A non-invasive method for *in-situ* determination of mating success in female American lobsters (*Homarus americanus*). *J. Visualized Experiments*. 84: e50498. doi:10.3791/50498.

- Pugh, T., **J.S. Goldstein**, K. Lavalli, M. Clancy, and W.H. Watson III. 2013. At-sea determination of female American lobster (*Homarus americanus*) mating activity: Patterns vs. expectations. *Fisheries Research*. 147: 327-337.
- Johnson, K.J., **J.S. Goldstein**, and W.H. Watson III. 2011. Two methods for determining the fertility status in early-stage American lobster, *Homarus americanus*, eggs. *J. Crustacean Biology*. 31: 693-700.
- Butler, M.J. IV, C.B. Paris, **J.S. Goldstein**, H. Matsuda, and R.K. Cowen. 2011. Behavior constrains the dispersal of long-lived spiny lobster larvae. *Marine Ecology Progress Series*. 422: 223-237.
- Goldstein, J.S.** and B. Nelson. 2011. Application of a gelatinous zooplankton tank for the mass production of larval Caribbean spiny lobster, *Panulirus argus*. *Aquatic Living Resources*. 24: 45-51.
- Goldstein, J.S.** and M.J. Butler IV. 2009. Behavioral enhancement of onshore transport by postlarval Caribbean spiny lobster (*Panulirus argus*). *Limnology and Oceanography*. 54: 1669-1678.
- Goldstein, J.S.**, H. Matsuda, T. Takenouchi, and M.J. Butler IV. 2008. The complete development of larval Caribbean spiny lobster *Panulirus argus* (Latreille, 1804) in culture. *Journal Crustacean Biology*. 28: 306-327.
- Plusty, M., A. Kim, E. Malkin, **J.S. Goldstein**, D. Fiore, and M. Koneval. 2008. Microecological impacts of global warming on crustaceans— temperature induced shifts in the distribution of larval release in American lobsters. *Journal Shellfish Research*. 27: 443-447.
- Matsuda, H., T. Takenouchi, and **J.S. Goldstein**. 2006. The complete larval development of the pronghorn spiny lobster *Panulirus penicillatus* (Decapoda, Palinuridae) in culture. *Journal Crustacean Biology*. 26: 579-600.
- Goldstein, J.S.** 2006. 'Connecting the Dots' in the Caribbean: An overview and directed approach for long-term spiny lobster puerulus settlement studies. *Proceedings of the Gulf and Caribbean Fisheries Institute*. 57: 833-845.
- Plusty, M.T., D.R. Fiore, and **J.S. Goldstein**. 2005. Formulated diets as replacements for *Artemia* in the rearing of juvenile American lobsters (*Homarus americanus*). *Journal Aquaculture*. 250: 781-795.
- Plusty, M.T., **J.S. Goldstein**, and D.R. Fiore. 2005. Hatchery performance of early benthic juvenile American lobsters (*Homarus americanus*) fed enriched frozen adult *Artemia* diets. *Journal Aquaculture Nutrition*. 11: 191-200.
- Goldstein, J.S.** and M.F. Plusty. 2003. Substrate determinants and development rate of claw asymmetry in American lobsters, *Homarus americanus*. *Journal Crustacean Biology*. 23: 890-896.

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***PUBLICATIONS – REPORTS AND WHITE PAPERS***

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- Burdick, D., C. Peter, B. Fischella, M. Tyrrell, J. Allen, J. Mora, K. Raposa, **J. Goldstein**, C. Feurt, L. Crane. 2020. Synthesizing NERR Sentinel Site Data to Improve Coastal Wetland Management Across New England Data Report. NEERS Science Collaborative. 34pp.
- Goldstein, J.S.** 2015. Tropical lobster aquaculture: Bridging the gaps and forging new frontiers. In: *Spiny lobster aquaculture development in Indonesia, Vietnam, and Australia*. C.M. Jones

(Ed.). ACIAR Proceedings No. 145. Australian Centre for International Agricultural Research: Canberra. Pp. 104-109.

**Goldstein, J.S.** 2013. Atlantic States Marine Fisheries Commission (ASMFC-NOAA). Preparation of the American Lobster Habitat Section to the Amendment 3 Fisheries Management Plan. 23p.

**Goldstein, J.S.,** S. Bartko, and D. Cone. 1999. Laboratory Culture Manual for the American Lobster, *Homarus americanus*. New England Aquarium pub. 56 p.

Mooney-Seus, M.L, J.S. Goebel, H.C. Tausig, **J.S. Goldstein**, and M.S. Sweeney (eds). 1998. Lobster Summit II. A New England Aquarium Aquatic Forum. Report 98-2, 30-31 January 1998. Hyannis, Massachusetts.

Mooney-Seus, M.L, J.S. Goebel, H.C. Tausig, and **J.S. Goldstein** (eds). 1997. Lobster Summit. A New England Aquarium Aquatic Forum. Report 97-2, 26-27 February 1997. Rockland, Maine.

Sears, J. and **J.S. Goldstein** (eds.). 1993. Nature Trail Guide and Natural History of the Landscape at the Children's Museum of Dartmouth. UMass Dartmouth Press. 35p.

#### **PUBLICATIONS – BOOK CHAPTERS**

Lavalli, K.L, E. Spanier and **J.S. Goldstein**. 2019. Scyllarid Lobster Biology and Ecology. In: Crustaceana Vol. II.

**Goldstein, J.S.** 2013. Lobster Migration. In: Encyclopedia of Estuaries, M.J. Kennish (ed.). Springer Pub., New York.

#### **PUBLICATIONS – FILM MEDIA**

**Goldstein, J.S.,** H. Matsuda, and T. Takenouchi. 2014. Film production and contribution, 'Metamorphosis: The Science of Change'. BBC Film Series (D. Briggs, Director). <http://www.bbc.co.uk/programmes/p00zv0wk>.

#### **RESEARCH GRANTS**

2020-2022 NOAA NMFS S-K Fisheries Grant. *Expanding a New England green crab pilot fishery by providing a molt detection assay and identifying seasonal aggregations for harvest*. \$261,000 (**Role: Primary Investigator**).

2020-2021 John Sage Foundation. *Evidence of microplastic ingestion by adult and juvenile lobsters – A pilot study*. \$10,000 (**Role: Primary Investigator**).

2020-2024 NASA (CubeSat Launch Initiative). MESAT1: Maine's First CubeSat. \$522,000 (**Role: Co-Investigator & Scientific Advisor**).

2020-2021 NOAA-OCM (315 Competition). *Improvements to regional monitoring networks and assessment of coastal ocean acidification through the lens of four New England estuaries*. \$50,000 (**Role: Primary Investigator**).

- 2019 – 2021 National Sea Grant (NOAA). *The potential influence of increased water temperatures in the Gulf of Maine on the distribution of female American lobsters and the impacts of these distribution shifts on larval recruitment*. \$250,000 (**Role: Primary Investigator**).
- 2018 - 2020 New Hampshire Sea Grant (NOAA). *Evaluating growth & sustainable harvesting practices for Jonah crabs in New England waters*. \$124,000 (**Role: Co-Investigator**).
- 2018 - 2019 National Estuarine Research Reserve Collaborative Catalyst Grant (NOAA). *Synthesizing NERR Sentinel Site data to improve coastal wetland management across New England*. \$105,000 (**Role: Co-Investigator**).
- 2018 - 2019 Maine Space Grant Consortium (NASA). *Student designed nanosatellites and sensor packages for observations of remote environments*. \$20,148 (**Role: Co-Investigator**).
- 2017 – 2019 National Estuarine Research Reserve Science Collaborative Grant (NOAA). *New technology for old problems: Using DNA methods to monitor invasive species and biodiversity in estuarine systems*. \$496,000 (**Role: Co-Investigator**).
- 2016 – 2018 Saltonstall-Kennedy (NOAA) Fisheries Grant. *Can climate change induce reproductive failure in American lobster? Case study of a collapsed stock*. \$227,000 (**Role: Co-Investigator**).
- 2017 – 2018 Maine Outdoor Heritage Fund (MOHF). *Strategies to improve sea-run brown trout stock enhancement in York County, Maine*. \$30,000 (**Role: Co-Investigator**).
- 2017 - 2018 Maine Space Grant Consortium (NASA). *Developing a sensor-based platform for evaluating climate change in estuarine and coastal ecosystems*. \$22,000 (**Role: Primary Investigator**).
- 2016 - 2017 Maine Seagrass (Project Development Grant). *A fishery in flux: Claw removal and its impacts on survivorship and behavior in the Jonah crab (*Cancer borealis*)*. \$2,500 (**Role: Primary Investigator**).
- 2015 - 2016 Eastern Connecticut State University Research Grant. *Biological sustainability of Jonah crab in Southern New England waters*. \$4,000 (**Role: Primary Investigator**).
- 2015 - 2016 Connecticut Space Grant Consortium (NASA). *Circadian rhythms in tropical slipper lobsters: Correlates for humans in space*. \$6,000 (**Role: Primary Investigator**). Eastern Connecticut State University.
- 2015 - 2016 AAUP Faculty Development Grant. \$1,500: Program Enhancement (Animal Behavior). Eastern Connecticut State University.
- 2013 – 2014 Maurice Hatter Research Fellowship. *Utilization and selected population dynamics of the Mediterranean slipper lobster in the Achziv Marine Reserve, northern Israel*. \$12,000 (**Role: Primary Investigator**). The Leon Recanati Center for Maritime Studies, University of Haifa.

- 2012 – 2014 Israeli Taxonomy Initiative (ITI). *A preliminary survey of the biological diversity of decapod plankton in the Mediterranean coastal waters of Israel.* \$25,000, (**Role: Primary Investigator**). University of Haifa.
- 2012 – 2014 NH SeaGrant (NOAA). *Does the Great Bay Estuary support a self-recruiting lobster population?* \$160,000, (**Role: Associate Investigator**), University of New Hampshire.
- 2011 – 2013 Northeast Consortium (NOAA). *Biological and oceanographic mechanisms influencing lobster larvae dispersal in New Hampshire coastal waters.* \$35,000, (**Role: Associate Investigator**), University of New Hampshire.
- 2010 William R. Spaulding Marine Research Award
- 2009 Lerner-Gray Fund for Marine Research
- 2007-2010 Company of Biologists Travel Award
- 2006 PADI Foundation Grant for Field Research
- 2006 Explorer's Club Award for Field Research
- 2006-2009 University of New Hampshire Marine Program Grants
- 2005 Darden Environmental Trust Fund Award

#### **RESEARCH & WORK EXPERIENCE**

- 2016 - **Research Director & Lead Scientist**, Maine Coastal Ecology Center, Wells National Estuarine Research Reserve. Oversees research and monitoring activities of the Wells Reserve; responsible for the administration, management, and development of all facets of the Research Program, including individual research and direct supervision of staff, interns, and graduate students; grantsmanship, managing a program budget, and conducting individual and team research.
- 2013-2014 **Fulbright Post-doctoral Fellow**, University of Haifa, Israel. Projects: *Crustacean biodiversity and invasive species in coastal Mediterranean waters; Slipper lobster reproductive dynamics and ecology.*
- 2012-2013 **Post-doctoral Researcher**, UNH. Project title: *Does the Great Bay Estuary support a self-recruiting lobster population?* (NOAA- Sea Grant).
- 2005-2012 **Graduate Research Assistant**, UNH. Projects:
- *Biological and oceanographic mechanisms influencing larval lobster dispersal in New Hampshire coastal waters.* (NOAA-NEC Grant).
  - *Properties of a circadian pacemaker and its regulation of locomotion.* INBRE (IDeA Networks of Biomedical Research Excellence, funded by the National Institutes of Health).
  - *Calibrating lobster ventless trap and standard trap surveys to optimize measurements of lobster abundance* (NOAA -Sea Grant).
  - *Sperm limitation in the American lobster fishery: Does it occur and why?* (NOAA-SeaGrant).
  - *The relationship between seasonal migrations of ovigerous female lobsters (*Homarus americanus*), egg development and larval survival* (NOAA-SeaGrant).
- 2003-2005 **Research Associate**, Florida Marine Research Institute: Project coordinator for Florida Keys comprehensive ecological monitoring of hard-bottom communities (corals, sponges, mobile invertebrates, fishes).

- 2002-2003 **Research Assistant**, Old Dominion University, Norfolk, VA. Project title: *The behavioral and ecological effects of viral disease in Caribbean spiny lobster* (NSF – Biological Oceanography).
- 1994-2001 **Research Associate and Project Manager, Edgerton Research Laboratory, New England Aquarium, Boston, MA.** Responsible for the operation, management and maintenance of the Lobster Rearing and Research Facility, an intensive, recirculating seawater system, providing year-round healthy stocks of lobster embryos, larvae, and juveniles for biomedical research to consortium recipients and research institutes regionally and abroad.
- Associated activities included: **1)** conducting research on egg growth and larval development; **2)** overseeing exhibit design, development, and implementation of lobster life-cycle exhibit and life-support incorporated into special exhibits gallery; **3)** organizing a variety of focus groups, summits, and public talks concerning lobster conservation and current fishery issues to various stakeholders; **4)** supervising and mentoring volunteers, interns, and other support staff.

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#### ***TEACHING EXPERIENCE***

- 2015-present **Adjunct Assistant Professor**, *Marine and Estuarine Biology, General Biology, Biodiversity & Sustainability*, York County Community College.
- 2014-2015 **Assistant Professor (visiting)**, *Ecology and Environmental Ecology*, Eastern Connecticut State University.
- 2013-2014 **Instructor**, *Scientific Writing and Communications*, Graduate course, The University of Haifa, Recanati Institute for Maritime Studies, International Program, Israel.
- 2010-present **Instructor**, *Marine Immersion: UNH Introductory Marine Biology* course for first-year undergraduate students. Shoals Marine Laboratory, Appledore Island, Maine.
- 2006 **Instructor**, Intertidal Ecology Workshop for UNH Marine docents. Shoals Marine Laboratory, Appledore Island, Maine.
- 2006-2010 **Graduate Teaching Assistantships**, University of New Hampshire.
  - *Developmental Biology*
  - *Animal Behavior*
  - *Animal Physiology*
  - *Human Anatomy & Physiology*
- 2008 **Co-Instructor**, 'Biology of the Lobster' for advanced undergraduates and professionals. Shoals Marine Laboratory, Appledore Island, Maine.
- 2001-2003 **Graduate Teaching Assistantships**, Old Dominion University and Keys Marine Laboratory.
  - *Tropical Marine Ecology*
  - *Organismal Biology*

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#### ***SELECTED CONFERENCE & SYMPOSIA PRESENTATIONS***

- 2020 *The effects of a warming Gulf of Maine on the distributions of egg-bearing lobsters and their larvae.* Regional Association for Research on the Gulf of Maine (RARGOM), University of Maine, Orono, ME (virtual).



- 2020 *The green crab 100: Meshing citizen science & fishery data*. Manomet Green Crab Workshop, Wells, ME (virtual).
- 2019 *An overview of research & monitoring initiatives at the Wells National Estuarine Research Reserve*. U.S. NE Atlantic Biological Observations Workshop (NERACOOS ATN-MBON-OTN), University of New Hampshire, Durham, NH
- 2018 *Jonah crab (*Cancer borealis*) growth and claw removal in an emerging fishery scenario*. 9<sup>th</sup> International Crustacean Congress, Washington, D.C.
- 2017 *Observations on ichthyoplankton community structure, abundance, and diversity in a temperate North American estuary, Webhannet river, Wells National Estuarine Research Reserve, Wells, Maine, USA*. NERRS National Meeting, Corpus Christi, TX.
- 2017 *Developing a low-cost sensor-based platform for evaluating environmental variability in estuarine and coastal ecosystems*. NERRS National Meeting, Corpus Christi, TX.
- 2017 *A fishery in flux: Claw removal and its impacts on survivorship and physiological stress in the Jonah crab (*Cancer borealis*)*. Society for Integrated & Comparative Biology, New Orleans, LA.
- 2017 *'In the heat of the moment': Effects of thermal stress on seasonal movements in slipper lobsters (*Scyllarides latus*) in the eastern Mediterranean*. The 11<sup>th</sup> International Conference and Workshop on Lobster Biology and Management, Portland, ME.
- 2016 *'Brave New Sea': Marine Biodiversity and Resource Management in Coastal Mediterranean Waters in the Levant*. "Lunch-n-Learn" Seminar, Wells NERR, Wells, ME
- 2016 *The Wells Reserve Community: Research & Conservation Initiatives*. The Wells Rotary Club, Wells, ME
- 2015 *Clash of the crustaceans: Interactions between European green crabs and American lobsters in Great Bay Estuary, NH USA*. The 2<sup>nd</sup> U.S.-Canada Lobster Symposium on Lobsters and Climate Change, Charlottetown, PEI, Canada.
- 2014 *Evidence of mating in immature, pre-reproductive female American lobsters*. The 10<sup>th</sup> International Conference and Workshop on Lobster Biology and Management, Cancun, Mexico.
- 2014 *A historical overview of lobster use by pre- and post-Columbian cultures in the Caribbean and Mesoamerica*. The 10<sup>th</sup> International Conference and Workshop on Lobster Biology and Management, Cancun, Mexico.
- 2013 *Brave New Sea: Patterns and estimates of zooplankton biodiversity in the Mediterranean coastal waters of Israel*. Fulbright Scholar Enrichment Seminar, Cairo, Egypt.
- 2013 *Patterns, motivations, and implications for the seasonal movements of lobsters in coastal waters*. Israeli Association of Aquatic Sciences, Miahmoret, Israel.

- 2012 *The impact of ovigerous lobster movements on egg development, larval hatch, and settlement.* The American Lobster in a Changing Ecosystem: A US-Canada Science Symposium, Portland, Maine.
- 2012 *Seasonal movements, egg development and larval hatch in ovigerous American lobsters.* The 41<sup>st</sup> Benthic Ecology Meetings, Norfolk, Virginia.
- 2010 *Spinning, drifting, and bobbing: The use of GPS-ocean drifters to model larval lobster dispersal along the New Hampshire Seacoast.* UNH Graduate Research Conference, Durham, New Hampshire.

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***SELECTED INVITED TALKS, SEMINARS & WORKSHOPS***

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- 2020 *Seacoast Environmental Film Festival, "Lobster Wars", Invited Panel Speaker*, Kittery, ME.
- 2019 *Marine, Coastal & Fisheries Science in the Gulf of Maine Region: Lessons & Opportunities for the Yellow Sea.* Convened by Environmental Defense Fund & University of Maine, Hosted by Friends Forever International, **Invited Speaker**, Durham, NH.
- 2019 U.S. NE Atlantic Biological Observations Workshop NERACOOS. **Invited Session Speaker**, University of New Hampshire, Durham, NH
- 2018 *New Technology for Old Problems – Using DNA Methods to Monitor Invasive Species and Biodiversity in Estuarine Systems.* **Invited Seminar Speaker**, Southern Maine Community College, Portland, ME
- 2016 *Lobsters and their kids 'on the move' in the Gulf of Maine: Applied technology to investigate the American lobster in a changing ecosystem.* **Invited Speaker**, York County Community College, NASA-STEM Seminar Series, Wells, Maine.
- 2016 *Crustaceans in a Changing World: Where behavior meets physiology.* **Invited Speaker**, Wells National Estuarine Reserve at Laudholm Farm, Wells, Maine.
- 2014 *Tropical lobster aquaculture: Bridging the gaps and forging new frontiers.* **Invited Speaker**, Australian Center for International Agricultural Research, Spiny lobster aquaculture in the Asia Pacific Workshop. Lombok, Indonesia.
- 2013 *Biodiversity of selected zooplankton in the coastal Levant: Baselines & indicators for a changing ecosystem.* **Invited Speaker**, Eastern Mediterranean Ecosystems Workshop, Israel.
- 2012 *Systematics & identification of spiny lobster phyllosomas in waters of the Mesoamerican Reef.* **Invited Workshop leader and instructor**, ECOSUR & Chetumal University, Mexico.
- 2012 *Careers in Marine Biology: Talk given to UNH Project Connect (minority students).*
- 2012 *Marine Ecology in the Gulf of Maine Symposium.* Bowdoin College, Brunswick, Maine.
- 2012 *Connectivity in marine populations.* **Guest lecturer** for UNH Biological Oceanography class.
- 2012 *A Lobster State of Mind: Seasonal movements, traps and eggers in the Gulf of Maine.* **Invited Speaker**, Penobscot East Resource Center, Stonington, Maine.
- 2012 *A Tail of Two Lobsters: Seasonal movements and reproduction in American lobsters along coasts and estuaries.* **Invited Speaker**, North and South Rivers Watershed Association, Norwell, Massachusetts.

- 2011 *Lobsters and their kids on the move in the Gulf of Maine*. **Invited Speaker**, New England Aquarium Lowell Lecture Series, Boston, Massachusetts.
- 2010 *Advances and considerations for tropical spiny lobster culture: Updates from Japan and Florida, USA*. **Invited Speaker**, Bahamas Lobster Association, Nassau, Bahamas.

#### **GRADUATE COMMITTEES & COLLABORATIONS**

- 2021- Emily Burke (M.S. Student), **Committee Member (current)**. Thesis Topic. Movement dynamics and ecology of European green crab in the Webhannet River Estuary, Maine. UNH.
- 2020- Sofia Licht (M.S. Student), **Committee Member (current)**. Thesis Topic: Applying island biogeography theory and ecoacoustic approaches to explore species composition and richness in the northern temperate salt pools of the Webhannet and Little river estuaries. UNH.
- 2019- Maureen Madray (M.S. Student), **Committee Member (current)**. Thesis Topic: Movement ecology of Jonah crab (*Cancer borealis*). UNH.
- 2019 Luvia Lorei Garcia Echaury (PhD.). **External dissertation reviewer**. University of Auckland, New Zealand. Dissertation Title: *Energetics of successful settlement in spiny lobsters*.
- 2018- Kelly Giraud (PhD. Student). **Committee Member (current)**. Thesis Topic: *Increasing habitat restoration on private lands*. UNH.
- 2018 Bayu Priyambodo (PhD.). **External dissertation reviewer**. James Cook University, Australia. Dissertation Title: *The development of spiny lobster aquaculture in Indonesia through the enhancement of puerulus catch and technology transfer*.
- 2016 Benjamin Gutzler (PhD.). **Committee Member**. Dissertation Title: *Lobsters in a sea of stressors: impacts of a changing ocean on American lobster (*Homarus americanus*) physiology, reproduction and behavior*, UNH.
- 2014 Elizabeth Morrissey (M.S.). **Committee Member**. Thesis Title: *Reproduction and recruitment of the American lobster (*Homarus americanus*) in the Great Bay Estuary, New Hampshire*. UNH.
- 2013 Richard O'Rorke (PhD.). **External dissertation reviewer**. University of Auckland, New Zealand. Dissertation Title: *Determining the diet of spiny lobster phyllosomas: Using a prey enriched, amplicon pyrosequencing approach*.
- 2013 Joshua Carloni (M.S.). **Committee Member**. Thesis title: *Distribution and habitat use by large ovigerous American lobsters (*Homarus americanus*) at the Isles of Shoals, NH, USA*. UNH.
- 2013 Ashanti Canto (M.S.). **Committee Member**. Thesis Title: *Systematics and identification of spiny lobster larvae in waters of the Mesoamerican Reef*. University of Chetumal & ECOSUR, Mexico.

#### **COMMUNITY SERVICE**

- 2019- National Estuarine Research Reserve (NERRS) – Ecoacoustics Working Group
- 2018- National Estuarine Research Reserve (NERRS) – Ocean Acidification Working Group
- 2017- Maine Space Grant Consortium (NASA) – CubeSat Development Committee
- 2017- Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS) Board Member

- 2016-2014 Wells National Estuarine Research Reserve – Dorothy Fish Library Committee Conference session organizer and Chair: Lobster Reproduction, Development, and Physiology. The 10th International Conference and Workshop on Lobster Biology and Management, Cancun, Mexico.
- 2013 Gundalow Company, Maritime Heritage and Environment: Summer Series Speaker
- 2012 Undergraduate Research Conference, University of New Hampshire.
- 2011-2011 University of New Hampshire 'Coastal Discovery Day'.  
Conference session organizer and Chair: Lobster Aquaculture. The 9th International Conference and Workshop on Lobster Biology and Management, Bergen, Norway.
- 2009 Marine Advanced Technology Education (MATE) Center, consortium partner.
- 2010- Scientific Judge, NOAA Ocean Sciences Bowl, University of New Hampshire, Durham.

#### **LEADERSHIP & INTEGRATED ACTIVITIES**

- Supervisory and/or mentorship role for over 35 undergraduate and graduate students, 30 volunteers, and several staff.
- International collaborations with lobster researchers from Japan, New Zealand, Brazil, Mexico and Israel on projects where I have been a co-investigator.
- Project collaborations where I have been a co-investigator with individuals from non-profit, for-profit, state, and federal agencies.
- Project leader with strong team ethics on a variety of lab and field projects (as mentioned in work experience descriptions) with budgets and strict deadlines.

#### **SOFTWARE**

- Microsoft Office Suite
- Statistical analysis: SPSS, JMP, R Statistical Package
- Graphics production: Adobe Photoshop, iMovie
- YSI Environmental software
- VEMCO telemetry software
- Python coding language

#### **SPECIAL TRAINING & CERTIFICATIONS**

- DAN First Responder and CPR Certified (updated 2019)
- DAN Oxygen SCUBA Certification (updated 2019)
- Commercial Fishermen Basic Safety Training, U.S. Coast Guard (cert. 2011)
- ASMFC Fisheries Stock Assessment workshop, Virginia Beach, VA. (cert. 2009)
- AAUS SCUBA Certification (cert. 2005)
- SSI Nitrox SCUBA Certification (cert. 2004)
- U.S. Coast Guard Boating Skills and Seamanship Course (cert. 1996)
- PADI Open-water Advanced SCUBA (cert. 1995)

**Manuscript reviewer for:** Fisheries Oceanography, J. Crustacean Biology, Fisheries Research, Aquaculture Nutrition, Marine Ecology Progress Series, Biological Bulletin.

**Professional memberships:** The Crustacean Society, Limnology and Oceanography, Society for Experimental Biology, Ecological Society of America.