

**Esther Caroline Peters, Ph.D.**

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**PROFILE**

Aquatic toxicologist and pathobiologist with more than 35 years of experience in temperate and tropical aquatic biology, contaminant and biota monitoring programs, laboratory research on effects of exposures to xenobiotics and other environmental stressors in invertebrates and fishes, comparative histology and histopathology, risk assessment, and quality assurance. Internationally recognized expert on coral reefs and diseases of coral reef organisms, as well as diseases of invertebrates. Studying cell and tissue alterations as a bridge to understanding the molecular and microbiological aspects of disease processes on populations, communities, and ecosystems.

**ACADEMIC HISTORY****Education**

Ph.D. Biological Oceanography, University of Rhode Island (1984)  
M.S. Marine Science, University of South Florida (1978)  
B.S. Biology, Furman University (1974)

***Dissertation and Thesis***

**Peters, E.C.** 1984. *A Survey of the Normal and Pathological Histology of Scleractinian Corals with Emphasis on the Effects of Sedimentation Stress*. Ph.D. Dissertation, University of Rhode Island.  
**Peters, E.C.** 1978. *Effects of Long-term Exposure of the Coral *Manicina areolata* (Linne, 1758) to Water Soluble Oil Extracts*. M.S. Thesis, University of South Florida.

***Awards***

George Mason University Excellence in Teaching Award (nominated 2007, could not submit materials)  
Fellow, American Association for the Advancement of Science (1996)  
National Cancer Institute, National Research Service Award, Postdoctoral Fellowship (1987–1991)  
Postdoctoral Fellowship, Smithsonian Institution (1985–1986)

***Additional Courses and Training*****Toxicology**

Foundation for Advanced Education in the Sciences, National Institutes of Health (FAES): Essentials of Toxicology (1987), Environmental Toxicology (1988); Society of American Military Engineers: ISO 14000: The Military Perspective (1997); Society for Environmental Toxicology and Chemistry: Geographic Information Systems Applications in Environmental Toxicology: An Introduction (1999), Predicting Fate and Effects of Nutrients and Organic Toxicants with the AQUATOX Model (1998), Use of Sediment Quality Guidelines in the Assessment and

Management of Contaminated Sediments (1997), Multivariate Statistical Analysis in Ecotoxicological Field Studies (1996), Uncertainty Analysis in Ecological Risk Assessment (1996), Ecological Risk Assessment of Contaminated Sites (1995), Protecting Endangered and Threatened Species from Risks of Pesticides and Other Chemicals (1994), Assessment of Contaminated Sediment (1993), The Fugacity Concept in Environmental Modeling (1992); Water Environment Federation: Aquatic Ecological Risk Assessment: Methods for Screening-Level and Probabilistic Risk Assessments (1996), Toxic Substances in Water Environments: Assessment and Control (1995)

### Pathobiology

American Fisheries Society (AFS), Fish Health Section: Histopathology, Part II: Finding and Interpreting the Overlooked (2011), Tumor Biology in Fish (2004), Molecular Biology—The Basics (2003); Armed Forces Institute of Pathology: Pathology of Laboratory Animals (1982, 1994), Comparative Pathology (1985); FAES: Special Techniques in Diagnostic Pathology (1993), Carcinogenesis, Mutagenesis and Teratogenesis (1985), Medical Virology (1985); Marine Biological Laboratory: Comparative Pathology of Marine Invertebrates (1979); National Cancer Institute: Histopathobiology of Neoplasia Workshop (1989); U.S. Fish and Wildlife Service: Introduction to Fish Health (1990); University of Tucson: Shrimp Pathology Short Course (1990)

### Histotechnology

National Society for Histotechnology (NSH) FISH Technology for Diagnostic Application—Its Importance And Its Relevance in the Histopathology Laboratory, and Introduction to Manual IHC (2015); NSH, Laboratory Education Series (2012–2013); NSH Creating the Quality Chain in Histology (2012); NSH One-Day Forum in Veterinary, Industry & Research Histology (2011); NSH One-Day Forum in Veterinary, Industry & Research Histology (2010); Region I Histotechnology Conference, NSH: Are You Prepared to Take the HT (ASCP) Registry Exam (2009); Maryland Society for Histotechnology: The Basic Science of Immunohistochemistry (2003); NSH: Coral Diseases: Challenges from the Deep - Histotechnology at the International Registry of Coral Pathology (2004), On-Line Learning (2004), Building an Immunohistochemical Section in Histology (1999), Ultrastructure Techniques and Morphology, Fixation in Histology - Theory and Practice, Prospecting for Mucin (1985); Practical Stain Technology Workshop, Center for Histotechnology Training (1985)

### Scuba Diving

National Association of Underwater Instructors: Advanced Diver Certification (2004), Sport Diver Certification (1980); Scuba Schools International: Nitrox Certification (1999); PADI: Rescue Diver Certification (2014)

### **Academic Appointments**

**Term Associate Professor**, Department of Environmental Science and Policy, George Mason University (August 2014–present)

**Term Assistant Professor**, Department of Environmental Science and Policy, George Mason University (August 2008–July 2014) and **Medical Technology Coordinator**, Biology Program, George Mason University (January 2010–May 2013)

**Graduate Special Faculty**, University of Guelph, Ontario, Canada (January 2015–present)

**Adjunct Assistant Professor of Clinical Research and Leadership**, The George Washington University School of Medicine and Health Sciences (July 2013–present)

**Adjunct Assistant Professor of Pathology**, The George Washington University School of Medicine and Health Sciences (November 2010–May 2013)

**Adjunct Professor**, Department of Environmental Science and Policy and Department of Molecular and Microbiology, George Mason University (2007)

**Adjunct Professor**, Department of Natural Resources Science, University of Rhode Island (2006–2008)

**Adjunct Professor**, Oceanographic Center, Nova Southeastern University (2002–present)

**Affiliate Professor**, Department of Environmental Science and Policy, George Mason University (2002–2008)

**Adjunct/Affiliate Professor**, Department of Biology, George Mason University (1999–2001)

**Adjunct Scientist**, Mote Marine Laboratory, Sarasota, FL (1997–present)

**Courtesy Associate Professor**, University of South Florida (1996)

**Courtesy Assistant Professor**, University of South Florida (1987–1995)

**Resident Research Associate**, Department of Invertebrate Zoology, Smithsonian Institution, Washington, DC (July 1986–June 1989: independent research on scleractinian coral taxonomy and invertebrate pathology)

## Teaching

### *Courses Taught at George Mason University*

*Histology with lab* (BIOL 465), *Histotechniques* (BIOL 508/NSCI 461), *Human Histology without lab* (BIOL 693 E01), *Histology for Graduate Students* (BIOL 693/EVPP 693), *Introduction to Biology II lab* (BIOL 104), *Environmental Biology* (BIOL 505, developed course for non-science background graduate students on biology and chemistry), *Histology for Environmental Scientists* (BIOL 505), *Understanding Disease for Conservation and Ecosystem Management* (EVPP 692/991, graduate seminar), *Introduction to Medical Technology* (MTCH 200), *Disease Ecology and Conservation* (EVPP 427/527, with Dr. Alonso Aguirre), *Directed Studies in Aquatic Toxicology* (EVPP 693), *Coral Histopathology* (EVPP 793), laboratory research for undergraduate and graduate students (BIOL 499 *Directed Studies*; BIOL 499 *Research Semester*; EVPP 693/EVPP 793, independent study)

### *Other Teaching Experience*

*Coral Disease Investigations* at Windward Community College, 1-day workshop with Drs. Thierry Work (DVM, U.S. Geological Survey), Michael Sweet (PhD, University of Derby), and Michelle Dennis (DVM, Ross University School of Veterinary Medicine), June 19, 2016, 16 selected students from around the world, Provided access to NOAA's Coral Virtual Microscopy Database for students to learn how to use this resource, presented lecture on "Histopathology of Common Lesions in *Acropora cervicornis*," discussed histotechniques, and assisted during slide reading laboratory session. The course was approved through Ross University School of Veterinary Medicine by the Registry of Approved Continuing Education (RACE) of the American Association of Veterinary State Boards (AAVSB) so that veterinarians could receive continuing education credits.

*Understanding Corals from the Inside Out—Comparative Histopathology* (OCMB 6460/BMME 8040/MEVS 5155), Nova Southeastern University Oceanographic Center (May 13–August 9,

2013, 11 students; May 12–August 8, 2014, 8 students; May 11–August 7, 2015, 4 students; May 9–August 5, 2016, 10 students)

*Diseases of Corals and Other Reef Organisms* at Mote Marine Laboratory, a 1-week field course with Dr. Robert Jonas, George Mason University, and (since 2004) Dr. Thomas Cuba, Delta Seven, Inc., 5 to 15 students each year (146 participants): Pigeon Key Marine Research Center (August 1997, August 1998); Tropical Research Laboratory (June–July 2000, July 2001, July 2002, July 2003, July 2004, July–August 2005, August 2006, August 2007, August 2008, August 2009, August 2010, August 2011)

*Coral Tissue Slide Reading Workshop*, 3 or 5 days, for up to 9 students per session (90+ attendees): Registry of Tumors in Lower Animals, George Mason University, and Mote Marine Laboratory's Tropical Research Laboratory (1999–2011)

*Advanced Coral Tissue Slide Reading Workshop*, 12–13 July 2008 following the 11<sup>th</sup> International Coral Reef Symposium, Nova Southeastern University's Oceanographic Center, for 29 participants who had conducted research on coral histology and histopathology to discuss diverse case studies and learn how to use virtual microscopy (sponsored by the Coral Disease and Health Consortium and International Registry of Coral Pathology with funding from NOAA's Coral Reef Conservation Program, Olympus Microscopes, and Aperio)

*Histotechniques and Histology of the Anthozoa*, invited faculty, Hawaii Institute of Marine Biology (July 2004)

*Histotechniques and Histology*, 2 graduate students, George Mason University (Spring 2004)

*1st International Coral Reef Ecotoxicology and Health Workshop*, invited faculty, Bermuda Biological Station for Research (September 2003)

*Assessing the Health of Pacific Corals*, invited faculty, Pauley Program, Hawaii Institute of Marine Biology (June 2003)

*Coral Histopathology Workshop*, 3-days, Coral Disease and Health Consortium, to train five National Oceanic and Atmospheric Administration and U.S. Geological Survey histopathologists at the Cooperative Oxford Laboratory; 5-days, to train coral disease researchers, EPA/Gulf Ecology Division (2002)

*Pathogens and Parasites of Reef Corals, Field Techniques*, workshop co-organizer with Dr. Judy Lang and others, 2–9 November 1995, Caribbean Marine Research Center, Lee Stocking Island, Bahamas

*Comparative Pathobiology of Environmental Disasters Workshop*, Armed Forces Institute of Pathology (January 1993)

Oceanography Advisory Committee, McLean High School, McLean, VA, directed student interns in field and laboratory research projects, participated in 2-week field courses, Bahamian Field Station, San Salvador, Bahamas (1991–1992)

Convenor and organizer of the Brown Bag University Seminar Series, Tetra Tech, Inc., Fairfax, VA

### **Service on Graduate Student Committees**

\* Indicates Major Professor. + Indicates committee member.

#### George Mason University

+Caitlyn Blackwell, M.S. Thesis: Comparison of Community Composition and Diversity of the *Lophelia pertusa* Bacterial Microbiome in Microhabitats (January 2016–present)

\*Krishna Makineni, M.S. Project: Developing a Virtual Microscopy Learning Tool for Coral Histology and Histopathology (January 2015–present)

- +Danielle Johnson, M.S. Project: A Study of George Mason University Students' Knowledge of the Parabens and Usage of Personal Care Products That May Contain Parabens (November 2014–May 2015)
- +Zachary Combs, M.S. Thesis: Comparison of Endolithic Fungal Communities Associated with *Montastraea (Orbicella) faveolata* in Apparently Healthy and White Plague-Like Diseased States (August 2014–present)
- \*Jessica Havens, M.S. Thesis: Impacts of Sediment Exposure during Routine Handling on Nursery-raised *Acropora cervicornis* (August 2014–present)
- \*Veronica Doxey, M.S. Project: Toxicological Effects of Explosive Compounds on Corals (September 2013–May 2015)
- \*Sarah Stanley, M.S. Thesis: Development of a Standard Operating Procedure for Use of Laser Capture Microdissection to Spatially Characterize The Coral Microbiome (January 2013–present)
- +Tunde Adebola, Ph.D. Dissertation: Assessing the Impact of Shrimp Exploitation in Nigerian Coastal Waters (August 2013–present)
- +Michelle Ryan, Ph.D. Dissertation: Abundance, Distribution, and Histological Analysis of the Mystery Snail (*Bellamya*) Populations in the Potomac Main Stem and Embayments Utilizing Citizen Scientist Participation (April 2013–December 2015)
- +Katharine Holder, M.S. Project: Coral Ecology, Health, and Conservation (March 2013–May 2016)
- \*William Norfolk, M.S. Thesis: Histological Analysis of Threespot Damselfish (*Stegastes planifrons*) Gastrointestinal Tract and Implications for Staghorn Coral (*Acropora cervicornis*) Health. (January 2013–December 2015)
- \*Naghma Malik, M.S. Project: Spatial and Temporal Analysis of Diseases and Pathogenic Microorganisms Found in Two Species of Clams, *Mya arenaria* and *Tagelus plebeius*, in the Chesapeake Bay (August 2012–August 2013)
- \*Meredith McCone, M.S. Project: Leveling the Playing Field: A Review of Science Education (August 2012–May 2016)
- +Ali Hendren, M.S. Project: The Public Perception of Marine Invertebrates in the Washington, D.C., Area (January 2012 to December 2012)
- +Beverly Bachman, M.S. Thesis: Life History Ecology of the Sharksucker, *Echeneis naucrates*, in The Gulf Of Mexico (November 2011–December 2014)
- +Karen Kohanowich, Ph.D. Dissertation: Man and Machine in Undersea Research (September 2011–present)
- +Milton Muldrow, Ph.D. Dissertation: Are Reef Experts' Views And Baselines Regarding The Status And Future Of The Coral Reef Of The Florida Keys Reef Tract Influenced By Age And Institution? Implications for Conservation, and Insight into the Shifting Baselines Hypothesis, as well as Historical Ecological Knowledge Of The Region (July 2011–present)
- +Caitlin Groeber, Ph.D. Dissertation: An Examination of Copper's Ability to Remediate Iron Overload in Alzheimer's Disease: The Role of Iron and Copper in Alzheimer's Disease (January 2011–May 2013)
- \*Katheryn Patterson, Ph.D. Dissertation: The Histology, Microbiology, and Molecular Ecology of Tissue Loss Diseases Affecting *Acropora cervicornis* in the Florida Keys National Marine Sanctuary (August 2010–August 2015)

- +Michael Galagno, M.S. Project: A Review of *Brucella*—Focusing on Marine Mammals and the Associated Zoonotic Health Risk (December 2010–August 2011)
- \*Tara Williams, M.S. Project, not completed: Isolation and Identification of Endolithic Fungi from Samples of the Coral, *Montastraea faveolata* (May 2009–August 2016)
- +David Allen, Ph.D. Dissertation: Spectral Discrimination of Coral Disease for the Advancement of Non-invasive Field Diagnostic Techniques (November 2008–January 2012)
- +Staci Lewis, M.S. Thesis: The Use of Histology, Molecular Techniques, And Ex Situ Feeding Experiments to Investigate the Feeding Behavior of the Coral Reef Predator *Hermodice carunculata*, The Bearded Fireworm (September 2006–May 2009)
- +Geoffrey Cook, Ph.D. Dissertation: Large-scale Geographical Comparisons of Bacterial Communities Associated with Corals Exhibiting Signs Consistent with White Plague (June 2006–December 2009)
- +Karen Santora, M.S. Thesis: Abundance and Diversity of Culturable Bacteria from Healthy and White Plague-Infected Corals in the Flower Garden Banks (November 2005–June 2008)
- +Norman Meres, Ph.D. Dissertation: Epizootic Shell Disease in the American Lobster (*Homarus americanus*) (August 2005–December 2012)
- +Geoffrey Cook, M.S. Thesis: Small-scale Spatial Comparisons of the Bacterial Communities Associated with White Plague Type II Diseased Corals at Lee Stocking Island, the Bahamas (February 2004–May 2006)
- +Clint Smith, Ph.D. Dissertation: Water Clarity Flux Due to Variable Light Intensity and its Effects on Fluorescent Proteins of *Porites furcata*: A Hard Coral from the Tropical Western Atlantic (September 2003–May 2005)
- +Paige Rothenberger, M.S. Thesis: A Comparison of Microbial Communities Associated With White Plague-Infected *Montastraea annularis* Corals at Sprat Hole, St. Croix, USVI (January 2002–May 2004)
- +George Getsinger, M.S. Thesis: Comparative Analysis of Vibrios Found in Association with Black-band Disease (September 1997–November 2001)

#### Boston University

- +Kathryn Lesneski, Ph.D. Dissertation: Cellular Physiology of Staghorn Corals (September 2014–present)

#### University of Guelph

- +Paige Vroom, M.S. Thesis: Creating a Corallimorpharia Model (September 2014–present)

#### University of Hawaii

- +Angela Richards Donà, Ph.D. Dissertation: Is It Good to be Blue? Investigation into the Functional Role of Chromoproteins in the Blue Stony Coral *Montipora flabellata* (September 2012–present)

#### Cornell University

- +Courtney Saltonstall Couch, M.S. Thesis: The Sea Fan Cellular Immune Response Under Natural Field Conditions; Ph.D. Dissertation: Examining the Role of Environment and Viruses in Growth Anomalies of *Porites lobata* on the Island of Hawai'i (November 2007–December 2013)

#### Florida International University

- +Longin Kaczmarzky, Ph.D. Dissertation: Characterizations of the Major Coral Diseases of the Philippines: *Porites* Ulcerative White Spot Syndrome and Novel Growth Anomalies of *Porites* (November 2006–January 2010)

Nova Southeastern University

- +Nicholas Turner, M.S. Thesis: Toxicity of 1-Methylnaphthalene to *Porites divaricata* for Use in Predicting Toxicity of Petroleum Hydrocarbons on Corals (May 2014–present)
- +Cameron Baxley, M.S. Thesis: Field and Laboratory Experiments on the Effects of Phosphate and Endosulfan on *Porites astreoides* and *Montastraea cavernosa* (September 2013–present)
- +Joshua Stocker, M.S. Thesis: Effects of 17  $\beta$ -estradiol and Progesterone on *Porites astreoides* and *Acropora cervicornis* Reproduction and Growth (August 2013–present)
- \*Steven DiLauro, M.S. Thesis: Time-course Evaluation of Suspect RLO Presence and Potential Relationship to White-band Disease Outbreaks in *Acropora cervicornis* off of Broward County from Years 2001–2012 (August 2013–August 2015)
- +Ana María González-Angel, M.S. Thesis: *Porites astreoides* Larval and Stressed Adult Histological and Ultrastructural Assessment (January 2012–August 2013)
- +Abraham Smith, M.S. Thesis: White Band Syndromes in *Acropora cervicornis* off Broward County: Transmissibility and Rates of Tissue Growth and Death (November 2005–January 2013)

State University of New York at Stony Brook

- +Angela Richards Donà, M.S. Thesis: Investigation into Pathological Responses of Two Phenotypes of the Scleractinian Coral, *Montastraea faveolata*, to Putative Marine *Vibrio* Pathogens (June 2009–August 2012)

University of Rhode Island

- +Julia Royster, M.S. Thesis: The Prevalence and Severity of Coral Diseases in Reserve and Non-reserve Areas across the Wider Caribbean (March 2006–June 2008)

University of Miami

- +Marilyn Brandt, Ph.D. Dissertation: Investigating the Epizootiology of a Coral Disease through the Development of the Simulation of Infected Corals Model (July 2004–December 2007)

University of Maryland Eastern Shore

- +Jennifer Kozlowski, M.S. Thesis: Comparison of the Distribution of Bacterial Aggregates in *Acropora cervicornis* Exhibiting Signs of White Band Disease from Reefs in the Bahamas and the Florida Keys (September 1994–May 1996)

University of South Alabama

- +Stan Beasley, M.S. Thesis: A Study of the Reproductive Biology of the Gorgonian *Leptogorgia hebes* (June 1991–June 1994)

University of Connecticut

- +Kathryn L. Jessen, M.S. Thesis: Occurrence of Pathology in the Ocean Quahog, *Arctica islandica*, from the Northeast U.S. Outer Continental Shelf (July 1989–July 1991)

University of South Florida

- +Adrienne George, Ph.D. Dissertation: Cataloguing Coral Abnormalities in Taiwan and China (April 2013–present)
- +Helen Talge, M.S. Thesis: A Study of Recreational Diver Impact on the Coral Reefs of the Florida Keys (May 1989–July 1991)
- +Donald M. Hesselman, M.S. Thesis: Reproduction in the Hard Shell Clam, *Mercenaria* spp., from the Indian River, Florida: Reproductive Seasonality and Pathology (January 1987–May 1988)

## PROFESSIONAL EXPERIENCE

- Director**, Stillwater Research Group, St. Petersburg, FL (August 2008–January 2015)
- Principal**, Pathobiology Consulting Services, Annandale, VA (January 2006–present)
- Director**, Histology Laboratory, George Mason University (August 1999–present)
- Principal Scientist/Environmental Scientist VI and Quality Assurance Manager**, Tetra Tech, Inc., Fairfax, VA (August 1998–September 2009: aquatic toxicology, pathobiology, quality assurance)
- Senior Scientist**, Tetra Tech, Inc., Fairfax, VA (April 1991–August 1998: toxicology, ecological and human health risk assessment, contaminated sediments, pathobiology, and quality assurance)
- Consultant** to The Nature Conservancy, Florida Keys Program, Marathon, Florida (August 1997–December 1998: manual for volunteers and scientists participating in monitoring programs)
- Consultant** to the Gulf of Riga Project, Finnish Institute of Marine Research (1995–2005: histopathology of clams in relation to pollution, with scientists from Latvia and Estonia)
- Consultant** to The Nature Conservancy, Latin America Program, Arlington, Virginia (February 1991–December 1993: taxonomic and literature database, Caribbean species of scleractinian and gorgonian corals, fire corals, and black corals for The Nature Conservancy's Conservation Data Centers in Jamaica and the Florida Keys, The Nature Conservancy's Biological and Conservation Database System)
- Associate Biologist**, JRB Associates, Marine Services Division, Narragansett, Rhode Island (October 1984–June 1985: supervised Histopathology Laboratory, EPA Environmental Research Laboratory, effects of dredge spoil material from Black Rock Harbor, marine invertebrates and fish, Central Long Island Sound, Field Verification Program of the U.S. Army Corps of Engineers and EPA)
- Graduate Research Assistant**, University of Rhode Island (April 1981–September 1984: supervised the Histopathology Laboratory, EPA Environmental Research Laboratory)
- 1040 Student Employment**, EPA Environmental Research Laboratory, Narragansett, Rhode Island (June 1980–April 1981: technician, histopathological effects of contaminants, marine invertebrates, fishes)
- Temporary Technical Assistant I**, Department of Comprehensive Medicine, University of South Florida Medical Center (March 1979–June 1979: comparative histology, biochemistry of bivalve blood cells)
- Laboratory Technologist I**, Department of Marine Science, University of South Florida (August 1977–August 1978: supervised Histopathology Laboratory for Mississippi, Alabama, Florida Lease Area baseline survey for the Bureau of Land Management in the eastern Gulf of Mexico)

## GRANTS AND CONTRACTS

- National Oceanic and Atmospheric Administration (NOAA), Coral Reef Conservation Program: Identifying Disease-Resistant and Thermal-Tolerant Genotypes in the Threatened Staghorn Coral, *Acropora cervicornis*, Drs. Nicole Fogarty and Steven Miller (Nova Southeastern University), Principal Investigators (PIs), \$59,557 total, \$9000 to Dr. Peters for histotechniques training and slide reading (July 1 2016–December 31, 2017)
- NOAA, National Marine Fisheries Service, Southeast Fisheries Science Center: Characterization of Relative Genotypic Disease Resistance in ESA *Acropora* spp. With Special Focus on Nursery-Reared Genets, Drs. Margaret Miller and Dana Williams (PIs) (January 1, 2016–December 30,



- 2018), \$164,584 total, subcontract to Dr. Peters for \$14,750 for sample processing and slide reading for histopathological analysis (July 1, 2016–December 30, 2017)
- NOAA/Jardon and Howard Technologies, Inc.: Coral Histopathology Training, PI Dr. Cheryl Woodley (NOAA/NCCOS/CCEHBR/Hollings Marine Laboratory), \$2,000 to train staff in reading coral histoslices (May 15, 2016–May 20, 2016)
- Florida Department of Environmental Protection, Coral Reef Conservation Program: Data Collection for the Southeast Florida Action Network (SEAFAN) to Assess Reef Conditions Before and During The 2015 Coral Disease Outbreak, PI Dr. Nicole Fogarty (Nova Southeastern University), \$24,499 total, subcontract to Pathobiology Consulting Services for \$12,500 for data management and report preparation by Dr. Peters (April 25, 2016–June 30, 2016)
- National Science Foundation: Histopathological Examination of Nutrient-Exposed Staghorn Corals, PIs Drs. Rebecca Vega Thurber (Oregon State University) and Brian Silliman (Duke University), \$3,000 to Dr. Peters for sample processing, slide reading, and report preparation (January 20, 2016–September 30, 2016)
- National Science Foundation, Biological Oceanography: Hybridization: The Key to Threatened Coral Species Survival or the Harbinger of Extinction? to PI Dr. Nicole Fogarty (Nova Southeastern University), collaborating with Dr. Iliana Baums (Pennsylvania State University), and subcontractors Dr. Cliff Ross (University of Florida) and Dr. Peters (Pathobiology Consulting Services), ~\$10,000 for histotechniques training and slide reading for Project 2: Examine mechanisms that allow hybrids to survive in a warmer, marginal habitat rarely accessible to the parental species (2015–2018)
- Nova Southeastern University, President's Faculty Research & Development Grant: Do Hybrids of Threatened Corals Survive Better in a Warming Ocean? to PI Dr. N. Fogarty (Nova Southeastern University), collaborating with Dr. C. Ross (University of South Florida) and Dr. Peters (Pathobiology Consulting Services), \$2,250 for slide reading for Hypothesis: Hybrids have distinct physiological response when exposed to thermal stress compared to the parental species (2015–2016)
- George Mason University, Biology Department, Research Semester: Using Immunohistochemistry to Locate Neurons in Marine Organisms, to support undergraduate research student Patricia Napora, \$2,000 (Fall 2015)
- George Mason University, Office of Student Scholarship, Creative Activities, & Research Fall 2014 Undergraduate Research Scholars Program: Is *Hermodice carunculata* a Vector in Spreading White-Band Disease in *Acropora cervicornis*? to support undergraduate research student Ushna Ahmad, \$1,500 (2014)
- Florida's State Wildlife Grants Program, Tallahassee, Florida: Investigation of a Previously Undescribed Octocoral Disease Affecting The Florida Reef Tract, subcontract to PI Vanessa Brinkhuis and Co-PI Dr. Kathleen Lunz, Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, St. Petersburg, FL, with subcontractor Dr. Koty Sharp (Eckerd College), \$1,500 (2013–2014)
- NOAA, National Status and Trends Program, Silver Spring, Maryland: Histological Examination of Coral Tissues from the St. Thomas, USVI, East End Reserve (STEER), subcontract to Consolidated Safety Services, PI Dr. Ian Hartwell (NOAA), \$2,100 (May 2012–July 2013)
- National Science Foundation, Biological Oceanography: Collaborative Research: Influence of Temperature and Acidification on the Dynamics of Coral Co-infection and Resistance, to PIs Dr. C. Drew Harvell (Cornell University) and Dr. Laura Mydlarz (University of Texas), consulting agreement to Pathobiology Consulting Services for histopathology research support, \$6,000 (May 2012–July 2012)
- NOAA, National Ocean Service, Office of Response and Restoration Damage Assessment, Remediation, and Restoration Program (DARRP), Natural Resource Damage Assessment (NRDA) Effort: Histopathology Services to Support Investigation on the Health of Gulf of Mexico Deep-Sea

- Corals for the DWHOS Natural Resources Damage Assessment, subcontract to Industrial Economics, Inc., \$34,356 to Pathobiology Consulting Services (February 2012–completion)
- NOAA, National Marine Fisheries Service, Office of Protected Resources, St. Petersburg, Florida: Parasites and Pathogens of Caribbean Acroporid Corals, contract to Jennifer Moore, ESA Coral Coordinator, Protected Resources Division, \$25,300 to Pathobiology Consulting Services (August 2011–September 2013)
- University of North Carolina at Wilmington, National Undersea Research Program (NURP): Aquarius Coral Restoration/Resilience Experiments: Investigation of Tissue Loss in Staghorn Corals, *Acropora cervicornis*, off Key Largo, Florida, subcontract to PI Dr. Margaret W. Miller, National Marine Fisheries Service, NOAA, \$40,000 to GMU (May 2011–December 2012)
- University of North Carolina at Wilmington, National Undersea Research Program (NURP): Aquarius Coral Restoration/Resilience Experiments, Histopathology Services to Support Investigation of Fireworm Predation on Staghorn Coral, subcontract to PI Dr. Margaret W. Miller, National Marine Fisheries Service, NOAA, \$14,685 to GMU (May 2010–December 2012)
- NOAA's General Coral Reef Conservation Grants Program, NMFS-HCPO-2006-2000348: Recruitment and Restoration of Threatened *Acropora palmata* At Looe Key Reef and Broward County First Reef, with PI Dr. Thomas Cuba, \$32,560 to Stillwater Research Group (2009–2010)
- Maryland Department of Natural Resources: “Contract Histopathology Services, Chesapeake Bay Clam Survey,” \$9,500 (9/4/08–6/30/09)
- Pace University: “Histological Processing of Coral Samples for Graduate Student Angela Richards-Dona,” Dr. James Cervino, \$2,000 (June 2009–July 2009)
- Bermuda Institute for Ocean Sciences: Histological Processing of Coral Samples for Reproduction Studies, PI Dr. Samantha de Putron, \$600 (June 2009–March 2010)
- Zoo/Exotic Pathology Service: Invertebrate Pathology Diagnostic Consultation, PI Dr. Drury Reavill, \$900 (February 2009–June 2009)
- Florida Fish & Wildlife Conservation Commission, State Wildlife Grant: Continuing Coral Reef Restoration Research, and Expanding the Project to Investigate the Potential of Coral Fragments from Branching Species, with The Florida Aquarium (Ilze K. Berzins, Casey Coy, Ryan Czaja), University of Florida Tropical Aquaculture Lab (Craig Watson, Roy Yanong), University of South Florida (Mya Breitbart), Florida Atlantic University (Colin Hughes, Jay Baldwin), Mote Marine Laboratory (Kim Ritchie), Coral Restoration Foundation (Ken Nedimyer), Pathobiology Consulting Services (Esther Peters), and Florida Keys National Marine Sanctuary (various staff members), awaiting samples (2009–2010)
- Caribbean Marine Research Center, Lee Stocking Island, Bahamas: Comparison of Bacterial Communities among Geographically Separated Corals Infected with White Plague Type II, with PIs Dr. Robert Jonas and Dr. Pat Gillevet, George Mason University, about \$30,000 to GMU (2004)
- Maryland Department of Natural Resources: Contract Histopathologist to Assess the Condition of Chesapeake Bay Clams, multiple awards > \$20,000 (2003–2010)
- U.S. Environmental Protection Agency Region 4: Etiology and Distribution of Coral Diseases in the Florida Keys National Marine Sanctuary, Co-PI with Dr. Erich Mueller, Mote Marine Laboratory, Pigeon Key Marine Research Center, and Drs. James and Karen Porter, University of Georgia; \$55,000 total, \$11,187 to Tetra Tech, Inc. (1997)
- Caribbean Marine Research Center, Lee Stocking Island, Bahamas: Investigation of the Bacteria Found in the Tentacle Tissue of *Porites astreoides*, co-PI with Dr. Deborah L. Santavy, EPA, \$5,000 (1994)
- Sea Grant Program, University of Puerto Rico: Ecology and Etiology of White Band Disease in Elkhorn Coral, *Acropora palmata* (Lamarck), consultant with Dr. John Bythell and Dr. John C. Ogden, PI, West Indies Laboratory, Fairleigh Dickinson University, original proposal approved but not funded due to lack of funds, \$3,000 finally received (1988)

- National Oceanic and Atmospheric Administration (NOAA), Marine Sanctuaries Program Division: A Study of Corals and Their Diseases in the Key Largo National Marine Sanctuary, Co-PI with Dr. Vassil N. Zlatarski, \$30,000 (1986)
- Caribbean Coral Reef Ecosystem Program: The Value of Histological Characters in Distinguishing Species of *Dichocoenia* (Zoantharia, Scleractinia), PI, \$3,500 (1985)
- Lerner-Gray Fund for Marine Research: The *Montastraea-Plesiastrea* Controversy: A Study in Comparative Histology, PI, \$500 (1985)
- Sigma Xi: A Comparative Study of the Effects of Chronic Sedimentation Stress on the Physiology of Symbiotic and Asymbiotic Colonies of the Coral *Astrangia danae*, PI, \$225 (1981)
- Lerner Fund for Marine Research: Incidence and Characterization of Coral Diseases from Two Caribbean Islands, PI, \$500 (1980)

## SCHOLARSHIP

### Peer-Reviewed Publications

**Book Chapters** (11 published, 11 total)

- Peters, E.C.** 2016. Anatomy. In *Diseases of Corals*, ed. C.M. Woodley, C.A. Downs, A.W. Bruckner, J.W. Porter, and S.B. Galloway, pp. 85-107. John Wiley & Sons, Hoboken, New Jersey.
- Work, T.M., L. Kaczmariski, and **E.C. Peters**. 2016. Growth anomalies in corals. In *Diseases of Corals*, ed. C.M. Woodley, C.A. Downs, A.W. Bruckner, J.W. Porter, and S.B. Galloway, pp. 291-315. John Wiley & Sons, Hoboken, New Jersey.
- Peters, E.C.** 2015. Diseases of coral reef organisms. In *Coral Reefs in the Anthropocene*, ed. C. Birkeland, pp. 147-178. Springer Science+Business Media, Dordrecht, The Netherlands.
- Peters, E.C.**, R.M. Smolowitz, and T.L. Reynolds. 2012. Neoplasia. Pages 431-443, in *Invertebrate Medicine*, 2<sup>nd</sup> edn., G.A. Lewbart, ed. Wiley-Blackwell Publishing, Oxford, UK.
- Santavy, D.L., and **E.C. Peters**. 2012. Coral diseases are a major cause of coral death. Pages 223-225, in *Tropical Treasures: South Florida's Marine Habitats*, Kruczynski, W.L. and P. Fletcher (eds), IAN Press, Cambridge, MD.
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- Peters, E.C.**, K.L. Price, and D.J. Borsay Horowitz. 2005. Histological preparation of invertebrates for evaluating contaminant effects. In *Techniques in Aquatic Toxicology*, Volume 2, ed. G.K. Ostrander, pp. 653-686. Taylor & Francis, Boca Raton, FL.
- Mullen, K.M., **E.C. Peters**, and C.D. Harvell. 2004. Coral resistance to disease. In *Coral Health and Disease*, ed. E. Rosenberg and Y. Loya, pp. 377-399. Springer-Verlag, Heidelberg, Germany.
- Peters, E.C.** 1997. Diseases of coral reef organisms. In *Life and Death of Coral Reefs*, ed. C. Birkeland, pp. 114-139. Chapman & Hall, New York, NY. [Revision submitted, 2005, for 2<sup>nd</sup> edition of the book, not printed; under revision again for 2014 publication]
- Peters, E.C.** 1993. Diseases of other invertebrate phyla: Porifera, Cnidaria, Ctenophora, Annelida, Echinodermata. In *Pathobiology of Marine and Estuarine Organisms*, ed. J. A. Couch and J. W. Fournie, pp. 393-449. CRC Press, Boca Raton, FL.

**Peters, E.C.** 1988. Recent investigations on the disseminated sarcoma of marine bivalve molluscs. In *Disease Processes of Marine Bivalve Molluscs*, ed. W.S. Fisher, *Am. Fisheries Soc. Spec. Pub.* 18: 74-92.

***Journals and Symposium Proceedings*** (35 published)

- Kiryu, Y., J.H. Landsberg, **E.C. Peters**, E. Tichenor, C. Burleson, and N. Perry. 2015. Pathological effects of cyanobacteria on sea fans in southeast Florida. *Journal of Invertebrate Pathology* 129:13-27.
- Knowles, S., **E. Peters**, C. Dungan, E. Howerth, C. Gregory, K. Latimer, and A. Camus. (In revision) Virus-like particles in the gills of soft-shell clams, *Mya arenaria*, from Maryland's Chesapeake Bay. *Diseases of Aquatic Organisms*.
- Miller, M.W., K.E. Lohr, C.M. Cameron, D.E. Williams, and **E.C. Peters**. 2014. Disease dynamics and potential mitigation among restored and wild staghorn coral, *Acropora cervicornis*. *PeerJ* 2:e541; DOI 10.7717/peerj.541
- Mass, T., J.L. Drake, **E.C. Peters**, W. Jlang, and P.G. Falkowski. 2014. Immunolocalization of skeletal matrix proteins in tissue and mineral of the coral *Stylophora pistillata*. *Proceedings of the National Academy of Sciences Early Edition* DOI 10.1073/pnas.1408621111
- Cook, G.M., J.P. Rothenberger, M. Sikaroodi, P.M. Gillevet, **E.C. Peters**, and R.B. Jonas. 2013. A comparison of culture-dependent and culture-independent techniques used to characterize bacterial communities on healthy and white plague-diseased corals of the *Montastraea annularis* species complex. *Coral Reefs* 32:375-388. DOI 10.1007/s00338-012-0989-6.
- Santavy, D.L., E.E. Mueller, L. MacLaughlin, **E.C. Peters**, R.L. Quarles, and M.G. Barron. 2011. Resilience of Florida Keys coral communities following large-scale disturbances. *Diversity* 4:628-640.
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- Peters, E.C.** 2013. Histological Examination of Coral Tissue Samples From St. Thomas, USVI, East End Reserve (STEER), Final Data Report. Submitted to S. Ian Hartwell, NOAA/National Status and Trends Program, Silver Spring, Maryland.
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### Other Publications

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### Presentations

\* Indicates an invited presentation. # Indicates a published abstract. + Indicates a poster.

Presenter is first author unless noted otherwise.

### National and International Professional Society Meetings and Conferences

**#Peters, E.C.**, D.W. Allen, C.S. Clements, Z.E. Combs, A. Richards Donà, W.A. Norfolk, K.W. Patterson, Z.A. Pratte, and C.M Woodley. 2016. The myth of the “healthy” coral: the need for phenotypic anchoring before and during the age of ‘omics. 13th International Coral Reef Symposium, Honolulu, Hawai’i.

**#Pratte, Z.A.**, **E.C. Peters**, and L.L. Richardson. 2016. Gall crabs, corals, and white plague: how are they all related? 13th International Coral Reef Symposium, Honolulu, Hawai’i.

**#Vroom, P.C.**, **E.C. Peters**, and J.S. Lumsden. Regeneration in Corallimorpharia. 13th International Coral Reef Symposium, Honolulu, Hawai’i.

**+Cho, Y.K.**, P.J. Napora, and **E.C. Peters**. 2016. Detection of serotonin in the primitive nervous system of anthozoans. College of Science Undergraduate Research Colloquium, George Mason University (poster). \*\*2nd Place Award Winner\*\*

**+Napora, P.**, and **E. Peters**. 2015. Testing an immunohistochemical method of locating serotonin in marine invertebrates. College of Science Biology Department Undergraduate Research Semester.

**#Peters, E.C.** 2015. Caribbean acroporid tissue loss: Toward a new paradigm of coral disease. 37th Scientific Meeting of the Association of Marine Laboratories of the Caribbean, CARMABI Research Station, Curaçao.

**+Ahmad, U.**, S.A. Lewis, M. Miller, **E. Peters**. 2015. Is *Hermodice carunculata* a vector in spreading white-band disease in *Acropora cervicornis*? Georgetown University’s Undergraduate Research Conference, Washington, DC, and George Mason University’s College of Science Undergraduate Colloquium, Fairfax, VA.

**+Peters, E.**, K. Holder, P. Gillevet, B. Whitaker, M. Khan, and A.A. Aguirre. 2015. Investigation of microbiota associated with rapid tissue loss in captive Indo-Pacific corals. Inaugural Mason Multidisciplinary Research Symposium, Office of the Provost, George Mason University, Fairfax, VA.

**\*#Peters, E.C.** 2015. Molecular madness: The case for phenotypic anchoring in understanding corals. 40th Annual Eastern Fish Health Workshop, Charleston, SC.

- +**Peters, E.C.** 2014. A *Rickettsiales*-like (?) bacterium is responsible for the tissue loss diseases of Caribbean acroporid corals. 17th Biennial Ocean Sciences Meeting, Honolulu, HI.
- #Richards Donà, A.M., and **E.C. Peters**. 2014. Damaging interactions between the coral holobiont and putative bacterial pathogens: undetectable until it is too late. 17th Biennial Ocean Sciences Meeting, Honolulu, HI.
- \***Peters, E.C.**, D.W. Allen, and M.W. Miller. 2013. Another perspective on acroporid tissue loss diseases: Exploring the spectral reflectance of coral disease lesions. 38<sup>th</sup> Annual Eastern Fish Health Workshop, Gettysburg, PA.
- #Brinkhuis, V., K. Lunz, K. Sharp, **E. Peters**, and A. Whittle. 2013. Investigation of a presently undescribed disease affecting octocorals of the genus *Eunicea* along the Florida Reef Tract. 42<sup>nd</sup> Annual Benthic Ecology Meeting, Savannah, GA.
- #Miller, M.W., K. Lohr, and **E. Peters**. 2012. Disease dynamics and mitigation in restocked *Acropora cervicornis* populations. 12th International Coral Reef Symposium, Cairns, Queensland, Australia.
- \***Peters, E.C.** 2012. What is really killing the Caribbean acroporids? Invited oral presentation for the session “As The Ocean Turns: How Environment Affects Coral Health” convened by C.D. Harvell, C.S. Couch, and C. Burge. 37th Annual Eastern Fish Health Workshop, Lake Placid, NY.
- #Dungan, C.F., **E.C. Peters**, and J. Marcino. 2012. Three diseases of softshell clams, *Mya arenaria*, in Chesapeake Bay: 2000–2009. Contributed presentation at the National Shellfisheries Association, 104th Annual Meeting, Seattle, Washington. *Journal of Shellfish Research* 31(1):278.
- \***Peters, E.C.**, D. Borsay Horowitz, I. Sunila, and J.C. Wolf. 2011. Another catastrophe: Loss of valuable histopathology collections. Invited oral presentation for The Gulf of Mexico Oil Spill and Environmental Health session convened by G.A. Lewbart. 36th Annual Eastern Fish Health Workshop, Mt. Pleasant, SC.
- \***Peters, E.C.** 2011. Preliminary peeks: More coral diseases from the Florida Keys. Invited oral presentation for the Coral Ecosystem Health session convened by C.M. Woodley. 36th Annual Eastern Fish Health Workshop, Mt. Pleasant, SC.
- #Cook, G.M., M. Sikaroodi, R.B. Jonas, **E.C. Peters**, and P.M. Gillevet. 2011. A Comparison of Bacterial Communities Associated with Healthy and Diseased Corals: Applying an Innovative Technique to the Conservation of Coral Reefs. Second International Marine Conservation Congress, Victoria, BC, Canada.
- +**Knowles, S.**, **E. Peters**, C. Dungan, A. Camus, and E. Howerth. 2010. Virus-like particles in the gill epithelium of soft-shell clams, *Mya arenaria*, from Chesapeake Bay Waters. Proceedings, 61st Annual Meeting of the American College of Veterinary Pathologists and 45th Annual Meeting of the American Society for Veterinary Clinical Pathology, Baltimore, MD.
- +**Peters, E.C.**, R.B. Jonas, T.R. Cuba, E. Bartels, and D.E. Vaughan. 2010. Thirteen years of investigating Florida Keys reefs through the course “Diseases of Corals And Other Reef Organisms. Linking Science to Management: A Conference & Workshop on the Florida Keys Marine Ecosystem, Duck Key, FL.
- +**Horowitz, D.B.**, **E.C. Peters**, I. Sunila, and J.C. Wolf. 2010. Treasures in archived histopathology collections: Preserving the past for future understanding. 6<sup>th</sup> International Symposium on Aquatic Animal Health, Tampa, FL.
- \*Dungan, C.F., M.L. Homer, M. Tarnowski, **E.C. Peters**, K.S. Reece, and E.M. Burreson. 2009. Chesapeake Bay Clam Fishery collapse: Probable disease impacts. NOAA Chesapeake Bay Office Fisheries Science Symposium, Patuxent Wildlife Center, MD.

- +Holder, K.L., S.A. Davis, E.C. Peters, C.A. Harms, and T.L. Reynolds. 2009. Characterization of amoebocytes found in clinically normal and diseased gorgonian sea fans. Morris Animal Foundation Annual Meeting, Denver, CO.
- +#Reavill, D., B. Sheppard, F. Dunker, and **E. Peters**. 2009. Mortality in a collection of giant clams (*Tridacna crocea* and *T. gigas*) due to an infection with *Perkinsus* sp.). 40<sup>th</sup> Annual International Association for Aquatic Animal Medicine Meeting and Conference, San Antonio, TX.
- \***Peters, E.C.** 2009. Histotechniques education for research. Veterinary, Industry, and Research Histology Sessions, Region I Histotechnology Conference and Symposium, National Society for Histotechnology, Newport, RI.
- #Kaczmarek, L.T., R. Sekar, D.K. Mills, **E.C. Peters**, and L.R. Richardson. 2008. Characterization of the major coral diseases of the Philippines: *Porites* ulcerative white spot syndrome and novel growth anomalies of *Porites*. 11<sup>th</sup> International Coral Reef Symposium, Ft. Lauderdale, FL.
- #Cook, G.M. Cook, M. Sikaroodi, P.M. Gillevet, P. Rothenberger, **E.C. Peters**, and R.B. Jonas. 2008. Bacterial communities on healthy and diseased corals: Associations with rapid tissue loss (white plague). 11<sup>th</sup> International Coral Reef Symposium, Ft. Lauderdale, FL.
- #Rothenberger, P., M. Sikaroodi, G. Cook, P. Gillevet, **E.C. Peters**, and R. Jonas. 2008. Tissue loss and tropical storms: An investigation of bacterial community dynamics in *Montastraea annularis* corals in St. Croix, USVI. 11<sup>th</sup> International Coral Reef Symposium, Ft. Lauderdale, FL.
- +#Couch, C., C.D. Harvell, **E.Peters**, and L. Mydlarz. 2008. How quickly does *Gorgonia* mount a cellular response to elicitors? 11<sup>th</sup> International Coral Reef Symposium, Ft. Lauderdale, FL.
- +#Santavy, D., E. Mueller, L. MacLaughlin, **E. Peters**, R. Quarles, M. Barron. 2008. Responses of coral communities in the Florida Keys following multiple stressor events in 1997-1998. 11<sup>th</sup> International Coral Reef Symposium, Ft. Lauderdale, FL.
- +#Hodel, E.C., and **E.C. Peters**. 2008. Histopathological analysis of hyaline, fibrillar lesions in the Caribbean staghorn coral, *Acropora cervicornis*. 11<sup>th</sup> International Coral Reef Symposium, Ft. Lauderdale, FL.
- +#Borsay Horowitz, D., **E.C. Peters**, I. Sunila, and J.C. Wolf. 2008. Treasures in archived histopathology collections: Preserving the past for future understanding. 100<sup>th</sup> Annual Meeting National Shellfisheries Association, Providence, RI.
- #**Peters, E.C.**, C.F. Dungan, M.L. Homer, and M.L. Tarnowski. 2008. Comparative histopathology of *Mya arenaria* and *Tagelus plebeius* clams in the Chesapeake Bay. 33<sup>rd</sup> Annual Eastern Fish Health Conference, Atlantic Beach, NC.
- #**Peters, E.C.**, G.M. Cook, and R.B. Jonas. 2007. Histopathology of white plague-diseased corals. 32<sup>nd</sup> Annual Eastern Fish Health Conference, Gettysburg, PA.
- #Cook, G.M., K. Santora, M. Sikaroodi, **E.C. Peters**, P.M. Gillevet, and R.B. Jonas. 2007. Large-scale geographical comparisons of bacterial communities associated with corals exhibiting signs consistent with white plague type II. 32<sup>nd</sup> Annual Eastern Fish Health Conference, Gettysburg, PA.
- #Dungan, C.M., **E.C. Peters**, and R.F. Hamilton. 2007. Virus infection associated with nuclear hypertrophy in gill epithelial cells of Chesapeake Bay softshell clams, *Mya arenaria*. Aquaculture 2007, 99<sup>th</sup> Annual Meeting National Shellfisheries Association, joint meeting with World Aquaculture Society San Antonio, TX.
- \*#**Peters, E.C.** 2006. Coral decline, diseases, and pathology. Post-Meeting Workshop II, Environmental Health and Pathology of Wildlife, concurrent annual meetings of the American College of Veterinary Pathologists/ American Society for Veterinary Clinical Pathology, Tucson, AZ.

- #**Peters, E.C.**, K.W. Hasson, and C.F. Dungan. 2006. A tale of two tumors: The shrimp=s and the clam=s. The Puzzling, The Weird, The Unknown: Sharing Your Diagnosis, 31st Annual Eastern Fish Health Workshop, Mt. Pleasant, SC.
- #Cook, G.M., J.P. Rothenberger, K. Santora, M. Sikaroodi, P.M. Gillevet, **E.C. Peters**, and R.B. Jonas. 2006. Differential diagnosis: A need for the use of multidisciplinary tools to investigate the coral disease white plague type II. Imminent Threats Affecting Our Coral Reefs, 31st Annual Eastern Fish Health Workshop, Mt. Pleasant, SC.
- \*#Cook, G., P. Gillevet, **E. Peters**, J.P. Rothenberger, M. Sikaroodi, and R.B. Jonas. 2005. Comparison of bacterial communities between geographically separated corals infected with white plague type II. Coral Diseases: An Increasing Threat to Coral Reefs Worldwide, 18th Biennial Conference of the Estuarine Research Federation, Norfolk, VA.
- \*#McLaughlin, S.M., **E.C. Peters**, T.M. Work, L. Sileo, L. Lanning, P.G. Parnell, J.F. Morado, B. Vargas-Angel, K. Price, and C.M. Woodley. Observations on the histopathology of *Acropora* spp. collected during unusual mortality events of 2003 in Florida Keys and Dry Tortugas. Coral Diseases: An Increasing Threat to Coral Reefs Worldwide, 18th Biennial Conference of the Estuarine Research Federation, Special Session on A, @ 16-20 October 2005, Norfolk, VA, p. 122.
- \*#Santavy, D.L., E. Mueller, L. MacLaughlin, R. Quarles, J. Campbell, and **E.C. Peters**. The prevalence and distribution of Awhite coral diseases@ in South Florida from 1997-2004. Coral Diseases: An Increasing Threat to Coral Reefs Worldwide, 18th Biennial Conference of the Estuarine Research Federation, Norfolk, VA.
- #Cook, G., P. Gillevet, **E. Peters**, J. P. Rothenberger, M. Sikaroodi, and R. B. Jonas. 2005. Comparison of bacterial communities between geographically separated corals infected with white plague type II. Washington, D.C. Branch, American Society for Microbiology, Annual Student Day Conference, Fairfax, VA.
- #Cook, G., P. Gillevet, **E. Peters**, J.P. Rothenberger, M. Sikaroodi, and R.B. Jonas. 2005. Comparison of bacterial communities between geographically separated corals infected with white plague type II. Coral Reef Health, Eastern Fish Health Workshop, 7 June 2005, Shepherdstown, WV.
- #Dungan, C.F., **E.C. Peters**, and M.L. Homer. 2005. First report of disseminated neoplasia prevalent in Chesapeake Bay commercial razor clams, *Tagelus plebeius*. National Shellfisheries Association, Philadelphia, PA.
- #Sutherland, K.P., **E.C. Peters**, and R. Rotjan. 2004. Histopathology of the white pox disease of the Caribbean elkhorn coral *Acropora palmata*. American Fisheries Society Fish Health Section and Eastern Fish Health Workshop, Atlantic Beach, NC.
- #Rothenberger, J.P., **E.C. Peters**, M. Sikaroodi, P.M. Gillevet, and R.B. Jonas. 2004. Assessment of bacterial communities associated with white plague-infected *Montastraea annularis* corals from St. Croix. American Fisheries Society Fish Health Section and Eastern Fish Health Workshop, Atlantic Beach, NC.
- #McLaughlin, S.M., T.R. McClanahan, W.H. Wilson, M. Carreiro-Silva, **E.C. Peters**, and K.L. Price. 2004. Coral mortalities along the Kenyan coast associated with extensive tissue lysis: Possible mycotic etiology. American Fisheries Society Fish Health Section and Eastern Fish Health Workshop, Atlantic Beach, NC.
- \*#**Peters, E.C.** 2003. Using histopathology to understand effects of contaminants on marine organisms. 1st International Coral Reef Ecotoxicology and Health Workshop, Bermuda Biological Station for Research, Bermuda.

- #McLaughlin, S.M., T.R. McClanahan, W.H. Wilson, **E.C. Peters**, and K.L. Price. 2003. Investigations of coral mortalities along the Kenyan coast. 7th International Conference on Coelenterate Biology, Lawrence, KS.
- #**Peters, E.C.**, M.J. Wolfe, J.C. Wolf, and P.M. Spero. 2003. Announcing a reexamination of coral skeletal anomalies. American Fisheries Society Fish Health Section, Eastern Fish Health Workshop, Gettysburg, PA.
- #McLaughlin, S.M., K.L. Price, **E.C. Peters**, and C.M. Woodley. 2003. International Registry of Coral Pathology. American Fisheries Society Fish Health Section, Eastern Fish Health Workshop, Gettysburg, PA.
- #Wolf, J.C., M.J. Wolfe, **E. Peters**, and P. Spero. 2003. Updating the Registry of Tumors in Lower Animals. American Fisheries Society Fish Health Section, Eastern Fish Health Workshop, Gettysburg, PA.
- \*#**Peters, E.C.**, M.J. Wolfe, and J.C. Wolf. 2003. The Registry of Tumors in Lower Animals: A resource for bivalve culture health studies. Integrated Approach to Bivalve Domestication: Genetics, Nutrition, Physiology, Disease Resistance, and Environmental Effects, National Shellfisheries Association, New Orleans, LA.
- \*#**Peters, E.C.** 2002. Abiotic and biotic threats to sea urchin health: What price culture? Sea Urchin Biology, Pathology and Culture, National Shellfisheries Association, Mystic, CT.
- \*#**Peters, E.C.** Coral disease diagnostics: Histopathology. Coral Health and Disease Workshop: *Developing a National Research Plan*, Coral Disease and Health Consortium, Charleston, SC.
- \*#**Peters, E.C.**, and D.L. Santavy. 2001. Diseases of corals: Research progress, reef prospects. The Role of Parasites and Disease in Aquatic Ecosystems, American Fisheries Society, Phoenix, AZ.
- #Santavy, D.L., E. Mueller, J.M. Hawkrigde, L. MacLaughlin, J.W. Porter, and **E.C. Peters**. 2001. The prevalence of ten coral diseases in the Florida Keys and Dry Tortugas. Diseases of Coastal Marine Organisms in the Wider Caribbean, Status and Prognosis, Association of Marine Laboratories of the Caribbean, University of Puerto Rico, La Parguera, Puerto Rico.
- #Mueller, E., D.L. Santavy, **E.C. Peters**, J.C. Porter, and L. MacLaughlin. 2000. The epizootiology of coral diseases in the Florida Keys. 9th International Coral Reef Symposium, Bali, Indonesia.
- #Santavy, D.L., E. Mueller, **E.C. Peters**, J.W. Porter, and V. Engle. 1999. Quality assurance measures associated with coral reef monitoring. International Conference on Scientific Aspects of Coral Reef Assessment, Monitoring, and Restoration, National Coral Reef Institute, Ft. Lauderdale, FL.
- #Santavy, D.L., E. Mueller, J.W. Porter, **E.C. Peters**, L. MacLaughlin, J.G. Campbell, M. Parsons, and L.C. Becker. 1999. The distribution and frequency of coral diseases in the Florida Keys and the Dry Tortugas. International Conference on Scientific Aspects of Coral Reef Assessment, Monitoring, and Restoration, National Coral Reef Institute, Ft. Lauderdale, FL.
- #**Peters, E.C.** 1998. The limits of our knowledge in tropical marine ecotoxicology. Society for Environmental Toxicology and Chemistry, Charlotte, NC.
- #+Keating, F.J., T.M. Armitage, W.J. Berry, D.R. Mount, and **E.C. Peters**. 1998. Chemical specific sediment concentrations for protection of benthic organisms and fish consumers. Society for Environmental Toxicology and Chemistry, Charlotte, NC.
- \*#**Peters, E.C.** 1998. Diseases of corals and other reef organisms. Joint meeting American Association of Zoo Veterinarians and American Association of Wildlife Veterinarians, Omaha, NE.
- #Mueller, E., D. Santavy, and **E.C. Peters**. 1998. Survey and quality assurance protocols for the assessment of coral disease distribution. International Society for Reef Studies, Perpignan, France.
- #**Peters, E.C.**, and D.L. Santavy. 1998. Overview of emerging diseases in coral reef ecosystems of the world. Third International Aquatic Animal Health Symposium, Baltimore, MD.
- #**Peters, E.C.**, G. Zaroogian, and D.J. Borsay. 1998. Effects of cadmium exposure on brown cells of the quahog *Mercenaria mercenaria in vivo*. Third International Aquatic Animal Health Symposium, Baltimore, MD.

- #Harcum, J., A. Stoddard, J. Keating, R. Bastian, V. Kibler, T. Bondelid, K. Lindstrom, B. Morrison, **E. Peters**, J. Pagenkopf, and A. Zacherle. 1998. Environmental indicators for evaluating progress: Using historical data for comparisons or baselines? National Monitoring Conference Monitoring: Critical Foundations to Protect Our Waters, National Water-Quality Monitoring Council, Reno, NV.
- #Patterson, K.L., D.S. Santavy, J.G. Campbell, J.W. Porter, L.G. Maclaughlin, E. Mueller, and **E.C. Peters**. 1998. Coral diseases in the eastern Florida Keys, New Grounds, and the Dry Tortugas. Society for Integrative and Comparative Biology, Boston, MA.
- #**Peters, E.C.**, and K.K. Lehtonen. 1997. Chemical and other stressors in the Gulf of Riga: Interpreting multiple lesions in the clam *Macoma balthica*. National Shellfisheries Association, Fort Walton Beach, FL.
- #+Lehtonen, K.K., **E.C. Peters**, and A. Kantoniemi. 1996. *Macoma balthica* in the Gulf of Riga (Baltic Sea): Histopathology, biochemistry, and heat-shock proteins. Society for Environmental Toxicology and Chemistry, Washington, DC.
- #Santavy, D.L., and **E.C. Peters**. 1996. Microbial pests: Coral disease research in the western Atlantic. 8th International Coral Reef Symposium, Panama City, Panama.
- \*#**Peters, E.C.** 1996. Biodiversity loss on coral reefs: Puzzling pathogens and mysterious maladies. Coral Reefs: Global Change and Biodiversity Loss, American Association for the Advancement of Science, Baltimore, MD.
- #+Santavy, D.L., **E.C. Peters**, J. Kozlowski, and S. Wilkinson. 1995. Characterization of the bacterium suspected in the incidence of white band disease. American Society for Microbiology, Washington, DC.
- #**Peters, E.C.**, S.B. Donahoe, B.M. Hackley, and L.J. Weddig. 1994. Development of a nationwide fish and shellfish consumption survey: Model design and pilot test results. National Shellfisheries Association, Charleston, SC.
- #Hunter, C.L., and **E.C. Peters**. 1993. Effects of stress-induced necrosis and “tumors” on the scleractinian coral, *Porites lobata*, in Hawaii. American Society of Zoologists, Los Angeles, CA.
- #+Eller, K.J., **E.C. Peters**, and P.P. Yevich. 1993. Heart mesotheliomas in the ocean quahog. American Association for Cancer Research, Orlando, FL.
- #Sullivan, K.M., R. Roca, **E.C. Peters**, and M. Chiappone. 1993. Global status of Scleractinia, Alcyonaria, Antipatharia, Stylasterina and Milleporina in the tropical western Atlantic: Guidelines and assessment. Global Aspects of Coral Reefs: Health, Hazards, and History, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL.
- #**Peters, E.C.**, R. Mooi, and K.L. Price. 1992. Evidence for neoplasia in the echinodermata: Tumorous lesions on the test of the sand dollar *Echinarachnius parma*. Invertebrate Pathology Emphasizing Aquatic Diseases and Tumors, Society for Invertebrate Pathology, Heidelberg, Germany.
- #**Peters, E.C.** 1992. Species diversity and diversity of neoplasms in invertebrates: Examples from the Registry of Tumors in Lower Animals collection. Invertebrate Neoplasia: Initiation and Promotion Mechanisms, World Congress on Cell and Tissue Culture, Crystal City, VA.
- #Williams, E.H., Jr., L. Bunkley-Williams, **E.C. Peters**, J.C. Harshbarger, B. Pinto-Rodriguez, R. Matos-Morales, A.A. Mignucci-Giannoni, K.J. Hall, J. Sybesma, I.B. de Calventi, and R.H. Boulon. 1991. Fibropapillomas in Caribbean green turtles: part of a widespread disturbance. Association of Marine Laboratories of the Caribbean, Freeport, Bahamas.
- #Santavy, D.L., and **E.C. Peters**. 1991. Bacteria found in the tentacle tissue of the scleractinian coral *Porites astreoides*. American Society for Microbiology, Dallas, TX.
- \*#**Peters, E.C.** 1990. Diseases of other invertebrate phyla: Porifera, Cnidaria, Ctenophora, Annelida, Echinodermata, @ Gulf Breeze Symposium on Marine and Estuarine Disease Research, U.S. Environmental Protection Agency, Environmental Research Laboratory, Gulf Breeze, FL.
- #+**Peters, E.C.**, P.P. Yevich, and G.E. Zaroogian. 1989. Morphological variation in gonadal neoplasms of marine bivalve molluscs. American Fisheries Society Fish Health Section, Eastern Fish Health

- Workshop, Annapolis, MD.
- #+**Peters, E.C.** 1989. Comparative histopathology of invertebrate neoplasms: Similar neoplasms occurring in different phyla and variations within families. Histopathobiology of Neoplasia Workshop, National Cancer Institute, Keystone, CO.
- #Upton, S.J., and **E.C. Peters.** 1989. Biology of *Gemmocystis cylindrus* (Apicomplexa) infecting Caribbean scleractinian corals. Southwestern Association of Parasitologists, University of Oklahoma Biological Station, Lake Texoma, OK.
- #**Peters, E.C.** 1988. An atlas of invertebrate neoplasms and related disorders from the Registry of Tumors in Lower Animals. Third International Colloquium on Pathology in Marine Aquaculture, Gloucester Point, VA.
- #**Peters, E.C.** 1987. Pathological effects of chemicals on coelenterates. Society for Invertebrate Pathology, University of Florida, Gainesville, FL.
- #Hesselman, D.M., **E.C. Peters,** and N.J. Blake. 1987. Neoplasia in the hard clam (genus *Mercenaria*). Society for Invertebrate Pathology, University of Florida, Gainesville, FL.
- #**Peters, E.C.** 1986. The value of histological characters as taxonomic tools for distinguishing species of scleractinia. Biology and Geology of Coral Reefs, International Society for Reef Studies, Institute of Geology and Paleontology, Phillips University, Marburg, Germany.
- #**Peters, E.C.** 1986. Neoplasms in scleractinian corals. Fundamental and Applied Aspects of Invertebrate Pathology, Fourth International Colloquium of Invertebrate Pathology, Veldhoven, The Netherlands.
- #+Zlatarski, V.N., and **E.C. Peters.** 1986. Have you looked for tumors among your fossil materials? Fourth North American Paleontological Convention, Boulder, CO.
- #**Peters, E.C.** 1986. A possible new symbiont in the coral *Porites astreoides*. American Society of Limnology and Oceanography and Phycological Society of America, University of Rhode Island, Kingston, RI.
- #**Peters, E.C.,** J.H. Halas, and H.B. McCarty. 1984. Observations on skeletal tumors in *Acropora palmata* at Grecian Rocks, Key Largo, Florida. Atlantic Reef Committee and the International Society for Reef Studies, Advances in Reef Science Meeting, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL.
- #+McCarty, H.B., M.E.Q. Pilson, J. McManus, and **E.C. Peters.** 1984. When is a hermatype not a hermatype? Atlantic Reef Committee and the International Society for Reef Studies, Advances in Reef Science Meeting, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL.
- #Coffroth, M.A., **E.C. Peters,** and H.R. Lasker. 1984. Zooxanthellae expulsion among Caribbean reef coelenterates in Panama. Atlantic Reef Committee and the International Society for Reef Studies, Advances in Reef Science Meeting, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL.
- #**Peters, E.C.** 1983. The role of environmental stress in the development of coral diseases and microparasite infestations. American Society of Zoologists, Philadelphia, PA.
- #+**Peters, E.C.** 1983. The value of histopathology as a tool for investigating the effects of environmental stress and disease in the stony corals. Benthic Ecology Meetings, Florida Institute of Technology, Melbourne, FL.

### ***Other Invited Presentations***

- 2016 Corals and Diseases, Science Night, Coral Restoration Foundation, Key Largo, FL
- 2015 Caribbean Coral Conservation Conundrums, Department of Environmental Science & Policy, Graduate Student Association Lightning Talks; Diseases of Plants, Insects, and Corals, course lecture for EVPP 427/527, Disease Ecology and Conservation, taught by Dr. Alonso Aguirre, Fall

- Semester, George Mason University; Using Histopathology to Understand Effects of Contaminants on Organisms (e.g., Corals), course lecture for EVPP 745, Toxicology, taught by Alonso Aguirre, Fall Semester, George Mason University (GMU); Can Caribbean Staghorn and Elkhorn (*Acropora* spp.) Coral Populations Be Restored? Coral Restoration Foundation Bonaire and CIEE Research Station, Bonaire, and University of South Florida, New College, Pritzker Marine Biology Research Center, Sarasota, Florida, Florida Sea Grant Elise B. Newell Seminar Series; guest speaker at the induction ceremony for GMU's chapter of Alpha Epsilon Delta premedical honor society; Symbiosis: Health and Disease, course lecture for EVPP 507, Science of the Environment II, taught by David Allen, Spring Semester, GMU; Caribbean Acroporid Tissue Loss: Toward A New Paradigm Of Coral Disease, Science Night, Coral Restoration Foundation, Key Largo, FL
- 2014 Threats to Coral Reefs: Diseases of Reef Organisms, course lecture for EVPP 543, taught by Larry Rockwood and Chris Parsons, Spring Semester, GMU; Diseases of Coral Reef Organisms, course lecture for EVPP 449/BIOL 449, Marine Ecology, taught by Katheryn Patterson, Spring Semester, GMU; Symbiosis: Health and Disease, course lecture for EVPP 507, Science of the Environment II, taught by David Allen, Spring Semester, GMU; Coral Bleaching: What's Up With That, Science Night, Coral Restoration Foundation, Key Largo, FL
- 2013 Symbiosis: Health and Disease. Course lecture for EVPP 507, Science of the Environment II, taught by David Allen, Spring Semester, GMU; Hyperspectral Imaging to Help Diagnose Coral Condition, Coral Restoration Foundation, Key Largo, FL
- 2012 Histology of Corals, course lecture for OCMB 6610/MEVS 5520/BMME 6760, Histology of Marine Organisms, taught by Patricia Blackwelder, Fall Semester, Nova Southeastern University; Threats to Coral Reefs: Diseases of Reef Organisms, course lecture for EVPP 543, Tropical Ecosystems, taught by Larry Rockwood and Chris Parsons, Spring Semester, GMU; Coral Decline, Diseases, and Pathology, course lecture for BIOL 440/NCLC 498 Coral Reef Ecology, taught by Mike Henley, Spring Semester, GMU
- 2011 Ten Minutes About a Career in Medical Technology. Course lecture for HHS 201, Introduction to Careers in Health Professions, taught by John Cantiello, Fall Semester, George Mason University; Coral Reefs and Diseases of Corals, course lecture for EVPP 521, Marine Conservation, taught by Chris Parsons, Spring Semester, GMU; Coral Decline, Diseases, and Pathology, course lecture for BIOL 440/NCLC 498 Coral Reef Ecology, taught by Mike Henley, Spring Semester, GMU
- 2010 Coral Reefs and Diseases of Corals. Course lecture for EVPP 521, Marine Conservation, taught by Chris Parsons, Fall Semester, GMU; Using Histopathology to Understand Effects of Contaminants on Organisms (e.g., Corals), course lecture for EVPP 745, Environmental Toxicology, taught by Robert Jonas, Fall Semester, GMU; Ten Minutes About a Career in Medical Technology, course lecture for HHS 201, Introduction to Careers in Health Professions, taught by John Cantiello, Fall Semester, GMU; Coral Decline, Diseases, and Pathology, course lecture for NCLC 498/BIOL 440 Coral Reef Ecology, taught by Michael Henley, Spring Semester, GMU; The Coral Holobiont, course lecture for EVPP 490/692 In Search of Symbiosis graduate seminar, taught by Dann Sklarew, Spring Semester, GMU; Current Topics in Coral Reef Ecosystems: Diseases of Reef Organisms, Course lecture for EVPP 543 Tropical Ecosystems, taught by Larry Rockwood and Chris Parsons, Spring Semester, GMU
- 2008 Current Topics in Coral Reef Ecosystems: Diseases of Reef Organisms, Course lecture for EVPP 543 Tropical Ecosystems, taught by Larry Rockwood and Chris Parsons, Spring Semester, GMU



- 2007 Histotechniques and Histopathology of Corals, Medical University of South Carolina, Histology Laboratory Managers Training and Coral Disease and Health Consortium, Charleston, SC
- 2006 Differential Diagnosis: Histopathology and the Concept of Species to Species and Disease to Disease Differences in Corals. Mini-Symposium on Coral Diseases, Rosenstiel School of Marine and Atmospheric Sciences, Miami, FL; Current Topics in Coral Reef Ecosystems: Diseases of Reef Organisms, Course lecture for EVPP 543 Tropical Ecosystems, taught by Larry Rockwood and Chris Parsons, Spring Semester, GMU
- 2004 Corals: Puzzling Pathogens and Mysterious Maladies, Washington, DC, Area Marine Aquarist Society (WAMAS), Vienna, VA; Educating the Next Generation: Health Specialists for Reef Organisms, Hawaii Institute of Marine Biology's Integrated Approaches to Marine Science seminar series, Coconut Island, Kahanoe, HI
- 2003 Diseases of Reef Organisms, course lecture for EVPP 692/991 Threats to Coral Reefs, taught by Robert Jonas, GMU; Puzzling Pathogens and Mysterious Maladies, Upper Keys diving community, sponsored by NOAA, Florida Keys National Marine Sanctuary, Key Largo, FL; Educating the Next Generation of Coral Health Specialists, Reef Awareness Week, sponsored by Reef Relief, Mote Marine Laboratory's Tropical Research Laboratory, Summerland Key, FL
- 2002 Current Topics in Coral Reef Ecosystems: Diseases of Reef Organisms, Course lecture for EVPP 543 Tropical Ecosystems, taught by Larry Rockwood and Chris Parsons, Spring Semester, GMU
- 2001 Research Methods Under the Sea: Florida Keys Coral Disease Studies, GMU Scuba Club; What It's Like to be a Marine Biologist, Career Day, Holmes Middle School, Alexandria, VA
- 2000 Understanding Environmental Issues Through the Study of Invertebrate Diseases, U.S. Environmental Protection Agency, Gulf Ecology Division, Gulf Breeze, FL
- 1999 Environmental Consulting, Alternative Careers in Marine Science course lecture, Center for Environmental and Estuarine Studies, Horn Point Environmental Laboratory, University of Maryland; Understanding Environmental Issues Through the Study of Disease in Invertebrates, Biology Seminar Series, GMU
- 1998 Coral Diseases and Implications to Coral Reef Community Structure, Smithsonian Environmental Research Center, Edgewater, MD; Coral Diseases, The Nature Conservancy Reef Stewards Program, Marathon, FL
- 1996 Coral Disease Research, lecture to ISIS Fellows from Southern Connecticut State University, Holiday Inn, Washington, DC; Environmental Consulting, Alternative Careers in Marine Science course lecture, Center for Environmental and Estuarine Studies, Horn Point Environmental Laboratory, University of Maryland
- 1994 Diseases of Coral Reef Organisms, Coral Reef Ecology course lecture, University of Maryland; Coral Reef Fish. First grade class, Columbia Elementary School, Annandale, VA; Ecological Risk Assessment Issues Discussion: The Year in Review and What's New at Tetra Tech, Brown Bag University Seminar Series, Tetra Tech, Fairfax, VA

- 1991 Sampling Coral Reefs for Environmental Effects, Tech Transfer Session, 2nd Annual National Ocean Survey Meeting, U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds, Oceans and Coastal Protection Division, St. Simon's Island, GA
- 1990 Coral Cut-ups/*Dichocoenia* Diversions: Histologic Forays in Taxonomy and Pathology. Marine Environmental Sciences Consortium, Dauphin Island Sea Lab, Dauphin Island, AL; The Trouble with Tumors: Insights from Invertebrate Neoplasms, Marine Biological Laboratory, Woods Hole, MA, University of Pennsylvania School of Veterinary Medicine, Philadelphia, PA, and University of Connecticut, Avery Point, CT; What It's Like to be a Marine Biologist, Oceanography classes, McLean High School, McLean, VA
- 1989 Cancer in Animals, seventh grade science classes, McLean School, Potomac, MD; Taxonomy and Tumors: An Invertebrate Portfolio, Department of Invertebrate Zoology Noon Seminar, National Museum of Natural History, Washington, DC
- 1987 Cancer on the Reef: Implications for Scleractinian Taxonomy. Department of Invertebrate Zoology Noon Seminar, National Museum of Natural History, Washington, DC

### PROFESSIONAL SERVICE

#### Professional Society Meeting Sessions Convened

- Organizer and co-Chair (with others) of session on Diseases on the Reef: Presence, Persistence, and Responses, 13th International Coral Reef Symposium, Honolulu, HI (20–24 June 2016)
- Organizer and Moderator, symposium on Pathology and Medicine in Marine Ecosystem Conservation, 2009 International Marine Conservation Congress, George Mason University, Fairfax, VA (23 May 2009)
- Chair, Disseminated Neoplasia: Update and Strategy for Research, 97th Annual National Shellfisheries Association Meeting, Philadelphia, PA (11 April 2005)
- Co-chair, Immune Function and Disease Responses, Bivalve Biomarkers Workshop, Charleston, SC (19–21 March 1998)
- Co-chair, Virology II, Third International Aquatic Animal Health Symposium, Baltimore, MD (30 August–4 September 1998)
- Co-chair, Tropical Marine Ecotoxicology, annual Society for Environmental Toxicology and Chemistry meeting, Charlotte, NC (15–19 November 1998)
- Co-convenor, Toxic Effects and Shellfish, National Shellfisheries Association, Ft. Walton Beach, FL (18–25 April 1997)
- Co-convenor, Neoplasia in Shellfish: Research Issues and Implications for Industry, National Shellfisheries Association annual meeting, Baltimore, MD (14–18 April 1996)
- Chair, Neoplasia Workshop, Society for Invertebrate Pathology Annual Meeting, University of Maryland, College Park, MD (1989)
- Co-convenor, Histopathology Session, Joint Meeting of the American Fisheries Society Fish Health Section and the Eastern Fish Health Workshop, Annapolis, MD (1989)

#### Invited Meeting Participant

*Acropora* Disease Risk Assessment Workshop, Florida Fish and Wildlife Research Institute, St. Petersburg, FL (25–26 April 2014)  
Florida Coral Recovery Outplanting Meeting, Rosenstiel School of Marine and Atmospheric Science, Miami, FL (3 November 2010)  
Florida Statewide Bioassessment Workshop on Coral Sampling Methodology, Florida Marine Research Institute, St. Petersburg, FL (13–14 October 1998)  
Domestic management sessions, Coral Reef Consultations, U.S. State Department, to discuss critical issues in coral reef research and management nationally and globally, Washington, DC (10 January 1994)  
Coral Reef Research and Management Workshop, NOAA National Marine Sanctuary Program, Key Largo, FL (1988)  
Coral Reef Rehabilitation Workshop, National Park Service, Office of International Affairs, St. John, U.S. Virgin Islands (1987)

### **Committee and Volunteer Activities**

Coral Reef Science and Cyberinfrastructure Network (CReSCyNT), Node Coordinator for Coral Diseases and Histopathology on this project, which is a part of EarthCube, funded by National Science Foundation, to develop cyber tools and resources for coral reef research and analysis (November 2015–present)  
Sea Urchin Rehabilitation Effort (SURE) (July 2014–present)  
Science Advisory Committee, Coral Restoration Foundation (CRF) and CRF International (June 2014–present)  
Southeast Florida Coral Reef Initiative (SEFCRI) Technical Advisory Committee (TAC) (January 2014–present).  
Science Judge, Chesapeake Bay Bowl, National Ocean Sciences Bowl, regional competition, George Mason University (February 2013)  
Chair, Curriculum Committee, Department of Environmental Science & Policy, George Mason University (January 2013–present)  
Member, Medical Sciences Advisory Committee, George Mason University (January 2012–present)  
Member, Committee on Committees, Department of Environmental Science & Policy, George Mason University (January 2012–December 2013)  
Careers Panel, Junior Girl Scout Troop 3680, Leesburg, VA (December 2011)  
Safety Liaison, Department of Environmental Science & Policy, George Mason University (Fall 2010–present)  
Academic Mentor: Marine, Estuarine, and Freshwater Ecology, Department of Environmental Science & Policy, George Mason University (Fall 2013–present)  
Worked with the Aspiring Scientists Summer Internship Program (ASSIP) student Adrienne Gillevet, senior at Thomas Jefferson High School, during field work in the Florida Keys and in my laboratory (Summer 2011)  
Search Committee for Dr. Alonso Aguirre, Department of Environmental Science & Policy, George Mason University (Spring 2011)  
Mentor, Aquatic Ecology Concentration of the BS degree in Environmental Science & Policy, Department of Environmental Science & Policy, George Mason University (January 2009 to present)  
Science Advisory Panel, Water Quality Protection Program, U.S. Environmental Protection Agency Region 4 and Florida Keys National Marine Sanctuary (September 2007)

- Peer Reviewer, Atlantic *Acropora* Status Review Document for NOAA's National Marine Fisheries Service, Southeast Regional Office (2005)
- Technical Advisory Committee, Land-based Sources of Pollution, Southeast Florida Coral Reef Initiative Team (2003–2013)
- Coral Disease and Health Consortium Committees: Histopathology, Nomenclature, Toxicology, Education (2002–present), developing Coral Virtual Microscopy System and educational curricula
- Scientific Advisory Panel, Project ReefKeeper, Coral Reef Conservation Center, American Littoral Society (1988–2002)
- Steering Committee, Caribbean Coral Reef Ecosystems Program, National Museum of Natural History, Smithsonian Institution, Washington, DC (1991)
- Guest Scientist, JASON Project VII: Adapting to a Changing Sea, National Geographic Society, Washington, DC (26 April 1996)
- Invited Scientist, field/dive trip to review The Nature Conservancy volunteer monitoring methodology for coral reefs, Looe Key National Marine Sanctuary, FL (17 January 1993)
- Invited Scientist, coral diseases survey, with Dr. Tom Bright and Rob Zimmerman, Texas A&M University, on research/coral spawning cruise to the Flower Gardens National Marine Sanctuary, Texas (8–13 August 1993)
- Peer Reviewer, journals (*Acta Zoologica*, *Diseases of Aquatic Organisms*, *Journal of the Marine Biological Association of the United Kingdom*, *Microbial Ecology*, *Biological Bulletin*, *Marine Biology*, *Journal of Experimental Marine Biology and Ecology*, *Hydrobiologia*, *Revista de Biología Tropical*, *Bulletin of Marine Science*, *Cancer Research*, *Caribbean Journal of Science*, *Coral Reefs*, *Journal of Environmental Engineering*, *Journal of Invertebrate Pathology*, *Journal of Zoo and Wildlife Medicine*, *Comparative Biochemistry and Physiology*, *Latin American Journal of Aquatic Science*, *Marine Ecology Progress Series*, *Toxicology and Industrial Health*)
- Peer Reviewer, symposium proceedings (7<sup>th</sup> *International Conference on Coelenterate Biology*; 6<sup>th</sup>, 9<sup>th</sup> and 11<sup>th</sup> *International Coral Reef Symposia*, *Symposium on Marine and Estuarine Disease Research*, *Proceedings of Workshop on Research Perspectives for Dolphin Mortalities in North America*)
- Peer Reviewer, research proposals and grants (U.S. Environmental Protection Agency, National Science Foundation, National Cancer Institute/Special Study Section on Studies on Cancer Etiology in Finfish and Shellfish, Caribbean Coral Reef Ecosystems Program, the National Undersea Research Program, Sea Grant, Gulf of Maine Regional Marine Research Program, U.S. Department of Agriculture/Animal Health and Well-Being Program, USAID/Peer Review Panel on Aquaculture and Coral Reef Management, U.S.-Israel Cooperative Research Program & The Middle East Regional Cooperation Program, Puerto Rico Sea Grant College Program)
- Volunteer consultant on histopathology of corals, International Registry of Coral Pathology, Cooperative Laboratory, Oxford, MD (2002–2005)
- Volunteer consultant on invertebrate pathology, Registry of Tumors in Lower Animals, George Washington University, Washington, DC (1992–2002)

### **Professional Affiliations**

- American Academy of Underwater Scientists
- American Association for the Advancement of Science  
2001–2007: Council Delegate, Section on Biological Sciences
- American Fisheries Society, Fish Health Section (not current)  
1990–1994: Pollution Committee

1991–1993: Fish Health Committee, Southern Division  
American Society for Quality (Senior Member) (not current)  
Association for Women in Science (not current)  
1991: Co-Chair, Outreach Committee, Washington, DC, chapter  
1992, 1993: Chair, Outreach Committee  
International Society for Reef Studies  
National Shellfisheries Association (not current)  
National Society for Histotechnology  
Society for Environmental Toxicology and Chemistry (not current)  
Society for Invertebrate Pathology (not current)  
1986–1990: Membership Committee