Potential Mentors for Summer Interns - 2012
Harbor Branch Scientific/Engineering Staff and Areas of Research

Aquaculture and Stock Enhancement:

Davis, Megan - Research Professor (Ph.D., Florida Institute of Technology, 1998) Interests: aquaculture of tropical species, including *Strombus gigas*, queen conch, and *Panulirus argus*, spiny lobster. Areas of specialty include early life history, nursery and grow out techniques, stock enhancement, and conservation ecology.

Garr, Amber - Research Associate (M.E.M., Duke University, 2001) Interests: apple snail stock enhancement and queen conch biology and life history, including effects of the environment on larval development and metamorphosis, captive breeding, nutrition, and juvenile growout programs for stock enhancement.

Laramore, Susan - Assistant Research Professor (Ph.D., Florida Institute of Technology, 2006) Interests: aquatic animal health, crustacean and bivalve diseases, with an emphasis on viral diseases; the effect of the environment on the progression of these diseases and immune system function.

Scarpa, John - Associate Research Professor (Ph.D., Texas A & M University, 1989) Interests: bivalve culture and genome manipulation, oyster restoration/ecology, bioremediation, and delineation of culture requirements of pharmacologically important species.

Wills, Paul - Assistant Research Professor (Ph.D., Southern Illinois University at Carbondale, 1998) Interests: production of finfish for food, and for sportfish enhancement; use of chromosome set manipulation and sex control for improving production characteristics of finfish.

Biomedical and Biotechnology

Guzmán, Esther - Assistant Research Professor (Ph.D., University of Texas, Houston, 2004) Interests: the design of high-throughput assays to test the potential anti-tumor or anti-inflammatory activities of marine natural products isolated from sponges and corals, and the elucidation of the mechanism of action of those compounds that exhibit biological activity to assess their potential as therapeutics.

McCarthy, Peter - Research Professor (Ph.D., University of Kent, 1983) Interests: heterotrophic microbes associated with sponges and their use in biotechnology. We are isolating and identifying marine microorganisms associated with deep-water marine invertebrates and using these unusual microbes as a novel source of pharmaceutical agents. We are also exploring the use of enzymes such as cellulases and lipases produced by these microorganisms as a new resource for the conversion of terrestrial and marine biomass into biofuels.

Wright, Amy - Research Professor, Marine Natural Products Chemistry (Ph.D., University of California, Riverside, 1984) Interests: the bioassay-guided purification and structure elucidation of novel marine natural products that may have utility in the treatment of human diseases. Of special interest are marine invertebrates derived from deep-water habitats accessible through the use of the *Johnson-Sea-Link* manned submersibles. Current research projects include investigation of deep-water sponges and gorgonians as sources of novel antibacterial, antifungal, anti-inflammatory, anti-malarial, and antitumor agents.

Marine Ecosystem Health

Hanisak, Dennis - Research Professor (Ph.D., University of Rhode Island, 1977) Research explores many facets of the physiology and ecology of marine plants (primarily macroalgae and sea grasses), including their primary production, nutrient uptake, and photobiology, as well as their cultivation and utilization as resources. Research projects include seagrass ecology, seaweed mariculture, coral reef ecology, and community dynamics of estuarine macrophytes.

Goldstein, Juli - Assistant Research Professor (D.V.M., Auburn University College of Veterinary Medicine) Interests and current projects: Investigations of the etiopatho-genesis of *Kogia* spp. cardiomyopathy, diagnostic ultrasound, marine mammal rescue and rehabilitation, marine mammal conservation medicine, and policy

Lapointe, Brian - Research Professor (Ph.D., University of Florida, 1982) Interests involve bottom-up controls on harmful algal blooms in subtropical and tropical coastal ecosystems on a variety of scales, ranging from organismal to multiple, linked ecosystems. Research projects include coral reef and seagrass ecology, physiological ecology of invasive macroalgae, and stable isotope analysis for assessing nutrient sources to coastal waters.

Mazzoil, Marilyn - Research Associate (B.S., Ohio State University, 1983) Interests: population ecology of dolphins in the Indian River Lagoon, using photo-identification and GIS-based approaches; abundance and distribution, social structure, reproductive success, shark interactions, and the occurrence of infectious diseases related to site fidelity and environmental data.

McCulloch, Steve - Program Manager, Marine Mammal Research and Conservation. Current projects involve dolphin photo-identification, whale research, and marine mammal rescue and rehabilitation.

Edge, Sara - Research Associate (Ph.D., Georgia Institute of Technology, 2007) Interests: Use of molecular technology to detect and characterize environmental stress responses in corals; molecular mechanisms associated with marine invertebrate ecophysiology, species interactions, social behavior, invasiveness, and disease.

Voss, Joshua - Research Associate (Ph.D., Florida International University, 2006) Interests: coral reef ecology and community dynamics, environmental drivers and

impacts of coral diseases, development of advance molecular technologies with field-based ecological applications, molecular profiling of bacterial communities, marine conservation and management.

Ocean Engineering and Technology:

Beiser, Geoff - Coordinator Research Program/Services, Ocean Engineering (B.S., Florida Institute of Technology, 1981) Interests: mechanical, structural and ocean engineering as well as hydrodynamic studies. Tasks include design engineering using FEM, proto-type modeling/testing and involvement in shop fabrication. Opportunities may exist for participation in offshore deployment and testing.

Dalgleish, Fraser - Assistant Research Professor, Optical Engineering (Ph.D., Cranfield University, 2004) Interests: underwater LASER and optical sensors for ocean observatories, imaging, and communications networks. Projects may be based in the Ocean Visibility and Optics Laboratory (a large underwater test facility at HBOI) and/or involve field deployments of autonomous underwater vehicles, remotely operated vehicles, profilers, landers, or gliders.

Ouyang, Bing - Research Associate, Electrical Engineering (Ph.D., Southern Methodist University, 2007) Interests: underwater laser imaging system, image and signal processing and oceanographic data analysis, visualization and management. Projects may be based in the Ocean Visibility and Optics Laboratory to develop techniques for data analysis, visualization and/or management.

Vuorenkoski Dalgleish, Anni - Research Associate, Mechanical Engineering (Ph.D., Cranfield University, 2004). Interests: optical sensor technology for environmental characterization in oceans and coastal/estuarine areas, underwater laser imaging and communication, benthic mapping and classification. Projects may include the use of engineering software (such as CAD, FEM, CFD, Matlab, LabVIEW, or Raytrace) and/or prototype development, construction, and experimental evaluation.

Ocean Exploration:

Pomponi, Shirley - Research Professor & Executive Director (Ph.D., University of Miami, 1977) Research interests include cell biology, physiology, and systematics of marine sponges with an emphasis on tropical shallow and deep-water species that produce biologically active metabolites.