

### WELCOME

4<sup>th</sup> Research Coordination Network Workshop

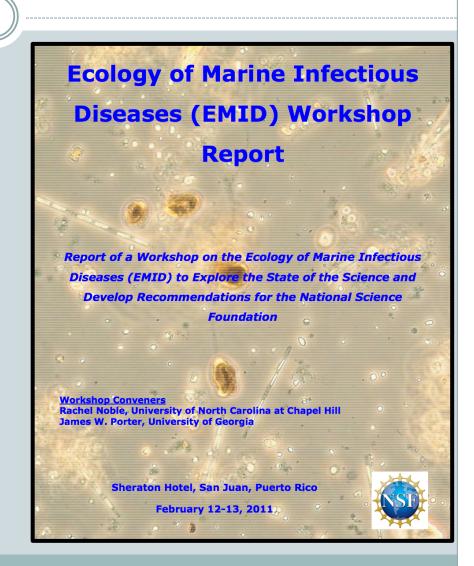
Marine Disease Modeling and Transmission

### NSF RCN Program

- Advance a field or create new directions in research or education
- Support groups of investigators to communicate and coordinate their research
- Support training and educational activities across disciplinary, organizational, geographic and international boundaries
- Allow interactions among individuals/groups who would not necessarily talk to one another

### Marine Disease RCN

- NSF EEID program research on ecological,
  evolutionary and socioecological processes that
  influence diseases
- Workshop in early 2011 to assess research priorities, identify impediments and develop strategies for marine disease research



### Marine Disease RCN

- Recommendation 1) quantify importance of marine disease processes and 2) increase capacity in marine disease research
- Early 2013 NSF funded RCN on
  - Evaluating the impacts of a changing ocean on management and ecology of infectious marine disease (PI Harvell, Cornell University)
- Developed around five workshops designed to address leading edge marine disease research topics and extend beyond just marine disease
- RCN includes resource economics, social science, disease ecology, disease pathology, modeling

## Marine Disease RCN Workshops

- Workshop 1 2012 Climate Change, Ocean Acidification and Marine Disease
  - O Burge et al., 2014, Annual Review of Marine Science
- Workshop 2 2013 Climate, Epidemiological and Economic Models for Marine Ecosystems
  - o Lafferty et al., 2015, Annual Review of Marine Science
- Workshop 3 2014 Advancing Marine
   Disease Diagnostics and Microbial Ecology
  - Special issue of Philosophical Transactions is in preparation

# RNC Workshop 4

- Objective is to evaluate and implement approaches for modeling marine diseases with emphasis on transmission processes
- Structured around development of population and disease models for abalone
- Various types of models single species, single population, multi species, multi populations
- Different transmission dynamics

# Workshop Approach

- Lectures that will provide background on abalone, abalone disease, aspects of marine diseases, disease modeling, data analysis, experimental studies for disease processes, and genetics
- Lectures on management and regulation of marine diseases
- Breakout groups to discuss and develop models
- Provide computer codes that give basic structure for various population-disease models
- Provide training on how to implement codes

## Workshop Products

- Develop a community with interest in marine disease modeling
- Provide a suite of models that can be modified for other applications and management
- Training in how to implement and use models
- Discuss possible special issues and/or review papers
- Several social events that intended to foster discussion and communication