



# 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 socio-ecological 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
  - Burge et al., 2014, Annual Review of Marine Science
- Workshop 2 2013 - Climate, Epidemiological and Economic Models for Marine Ecosystems
  - 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