The topical lunch group met on April 5 to discuss feasibility and brainstorming for the preparation of a RCN-SEES proposal. The notional title is **Sustainable Oceans in a Changing Ocean: forecasting increased disease impact and consequences for human well-being**

Diseases of marine organisms are forecast to increase significantly with climate change drivers of warming and increased ocean acidification. Despite this increased risk, diagnostic tools, forecasting tools and the capability to model marine diseases lags far behind most terrestrial ecosystems. Large scale capacity building is needed in the form of training and increased communication within the community of marine disease researchers to be able to meet this challenge in ocean ecosystem sustainability. In addition, critical tools such as facilities to study ocean acidification and conduct experiments are not in centralized locations. This RCN will increase training for students and postdocs at the same time as forming a more cohesive, collaborative research network. Training opportunities will include hybrid workshops/meetings on diagnostics, remote sensing and modeling at Friday Harbor Labs, Coconut Island Hawaii and Cornell University. Through an initial series of annual meetings, workshops, and mediated discussions, the RCN will evaluate infrastructural needs, prioritize a research agenda, and energize new collaborations to expand the effectiveness of the emerging community of researchers. This is a SEES relevant, highly interdisciplinary project that seeks solutions to managing our oceans for sustainability under the pressure of climate change and other anthropogenic threats. The computationally intensive portion will include forecasting disease risk with future climate scenarios. This project will also include a dimension of human change through evaluation of human perception of heightened disease risk with climate and consideration of the economic consequences of heightened disease impact on fisheries and sentinel species.

The group enthusiastically engaged with the topic and provided useful ideas, including the idea of considering:

What is Known?

What is not Known?

What should be Known?

We decided one output from the project could be thematic White Papers about the 3 ecosystems and how their ecosystem services are impacted by disease and climate. Ideas about economic dimensions suggested include:

Economic models of Ecosystem services come in 3 kinds

1continggent values survey

eg, what would a healthy ecosystem be worth to you?

2What is the value to you of a better-managed ecosystem

3Economics and epidemiological models

what is correct timing of intervention? What are possible interventions? What aspects of the problem are reversible.

The focusing questions to be addressed in the proposal include:

1How can we improve our diagnostic capacity to manage infectious marine disease?

2How can we better stratify our marine disease research across components of human change, such as increased temperature, acidification and eutrophication

3How can we optimize modeling approaches in the context of marine disease?

4How do we improve graduate and postdoctoral training in the above three components?

5What are the economic dimensions of the disease-climate equation?

The following were present:
Host Drew Harvell, cdh5
Helene Schember, hrs6
Bruce Monger, bcm3
Diego Hernan Ruiz Moreno, dhr4
Chris Barrett, cbb2
Rod Getchell, rgg4
Courtney Couch, cs389
Frank DiSalvo, fjd3
Colleen Burge, cab433
Jon Conrad, jmc16
Elizabeth Bunting, emb54
Chuck Greene, chg2
Dave Dieterich, dd355
Mark Lawrence, mal64
Nancy Douglas, nld6
Katherine McComas, kam19