

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

**Interventions to Increase the Resilience of Coral Reefs
Workshop Agenda**

May 31, 2018

University of Miami Rosenstiel School of Marine and Atmospheric Science
4600 Rickenbacker Causeway | Miami, FL 33149
Marine Science Center Auditorium

Workshop Goal: Discussions at the workshop will explore the state of the science, the risks, and the benefits of ecological and genetic interventions with the potential to increase the long-term persistence of coral reefs in environmentally degraded scenarios. The workshop is one component of the information-gathering activities that may inform the deliberations of the National Academies' Committee on Interventions to Increase the Resilience of Coral Reefs. Additional public information-gathering activities will be conducted.

8:00 AM *Breakfast*

8:30 AM **Introduction**
Stephen Palumbi, *Committee Chair*

8:45 AM **Opportunities and challenges for coral restoration in the Caribbean--
perspectives from science and management**

- What are the current and expected future conditions in the Caribbean and the expected effect on coral reefs? What are the uncertainties in predicting the condition of coral reefs in the future?
- What information is needed to weigh the risk and benefit of implementing new coral reef restoration and management approaches?
- What are the regulatory and scientific needs for permitting research and deployment of new approaches in the water?

Derek Manzello, *NOAA's Atlantic Oceanographic & Meteorological Laboratory*
Erinn Muller, *Mote Marine Laboratory*

Reef Management Panel:

Sarah Fangman, *Florida Keys National Marine Sanctuary*
Lisa Gregg, *Florida Fish and Wildlife Conservation Commission*
Ernesto Díaz, *Puerto Rico Coastal Zone Management Program*

10:45 AM *Break*

11:00 AM	Restoring coral reefs through artificial propagation and enhancing sexual recruitment • What are the challenges for restoring coral reefs and how are they addressed through artificial propagation and recruitment? What gaps remain? • What are appropriate metrics of success to evaluate restoration success in a stressed and changing environment? • How can restoration practices be integrated with ecological and genetic interventions implemented in the wild? What scale can be targeted? Diego Lirman, <i>University of Miami</i> Margaret Miller, <i>SECORE</i>
12:00 PM	<i>Lunch</i>
1:00 PM	The genomic basis for coral adaptability and resilience • What is known about the genetic (genome to population scale) considerations and risks for artificial selection of resilient coral? • What is the possibility of manipulating the coral genome to improve resilience? What advancements are needed to achieve this at scale? Iliana Baums, <i>Pennsylvania State University</i> (remote) Manuel Aranda, <i>King Abdullah University of Science & Technology</i> (remote) Phil Cleves, <i>Stanford University</i> Mikhail Matz, <i>University of Texas Austin</i>
2:40 PM	<i>Break</i>
2:50 PM	Manipulating the coral-algal symbiont • What is the specificity of algal symbionts to host coral? How does this influence holobiont resilience? • What is known about the feasibility and risk (e.g., failure, ecological changes) to manipulating symbiotic relationships? Can this be done at scale? Todd LaJeunesse, <i>Pennsylvania State University</i> Ross Cunning, <i>University of Miami</i> Hollie Putnam, <i>University of Rhode Island</i> (remote) Kate Quigley, <i>Australian Institute of Marine Science</i> (remote)
4:30 PM	The coral microbiome influence on coral resilience • What is known about the influence of the microbiome on coral (e.g., health, adaptability, reproduction, energetics)? • What is the feasibility and potential benefit of applying a probiotic approach to managing resilience? Can this be done at scale? Rebecca Vega Thurber, <i>Oregon State University</i> (remote) Raquel Peixoto, <i>Federal University of Rio de Janeiro</i>
5:30 PM	<i>Adjourn</i>