

“Conservation” session at SB 7.0
June, 2017
Singapore

TOTAL: 150 minutes

Purpose:

The goal of SB7.0 is to unite again the international synthetic biology communities to take a fresh look at the key topics and challenges that our field faces. Synthetic biology cannot advance without exploring and embracing the changes that it brings. As practitioners, scholars, and citizens we need to work together to explore the possibilities and plan strategically for collective growth of our science, its beneficial applications, and responsible practices (<http://sb7.info>).

This session will focus on the key topic of conservation of nature. It is designed to serve two purposes: educate participants about the state of nature in southeast Asia; and provide an introduction to ways in which conservation and synthetic biology can begin and continue to work together towards common goals.

Introduction – 5 mins

Drew Endy, Stanford University, USA - endy@stanford.edu

Why synthetic biologists should be thinking about conservation.

Southeast Asia in the Anthropocene – 20 mins

Madhu Rao, Wildlife Conservation Society, Singapore – mrao@wcs.org

What are the general patterns of human impact on the biodiversity of Southeast Asia and how are these affecting the future of nature in the region. What conservation responses are taking place through protected areas and species-directed work

Palm oil driven agrarian change: implications for environment and livelihoods
– 20 mins

Terry Sunderland, Principal Scientist, Center for International Forestry Research, Bogor, Indonesia – t.sunderland@cifar.org

How has the market for palm oil affected biodiversity and human health in Southeast Asia? How are things changing?

Ensuring a future for corals with assisted evolution – 15 mins

Madeleine van Oppen – The University of Melbourne

A variety of management options are being proposed to help corals survive the warming of oceans, including assisted evolution and the application of synthetic biology

The role of zoos in averting species extinctions and tackling threats to biodiversity in Southeast Asia – 15 mins

Sonja Luz, Director Conservation, Research and Veterinary Services, Wildlife Reserves Singapore, Singapore – Sonja.luz@wrs.com.sg

What role do captive collections play in the conservation and education of citizens of Southeast Asia? How important are assurance colonies for the survival and recovery of critically threatened species? What kind of in situ-ex situ partnerships are needed for addressing species declines.

Purposefulness in our hybrid future. Synthetic biology and the future of nature. – 15 mins

Kent H. Redford, Archipelago Consulting, Portland, ME, USA – redfordkh@gmail.com

What are the hopes and concerns that conservationists have for synthetic biology?

Gene drives – 15 mins

Omar Akbari – University of California, Riverside

What are gene drives and how might they interact with the environment?

Applying genomic engineering to address conservation issues. – 15 mins

Ryan Phelan, Revive & Restore, Sausalito, CA, USA – ryan@longnow.org

What synthetic biology/genomic tools are currently being developed and considered to address conservation issues?

Summary and thoughts on the evolutionary context – 15 mins

Frank Rheindt, Department of Biological Sciences, National University of Singapore, Singapore – dbsrfe@nus.edu.sg

Discussion – 15 mins

Rob Carlson, Bioeconomy Capital, Seattle, WA, USA rob@biodesic.com
lead