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February 18, 2021

(scroll down for agenda and speaker abstracts)

Plenary Youtube Livestream: https://www.youtube.com/watch?v=eBTgnOPmXXk

9:00 AM - 9:30 AM	*Login & mingle in The Lounge*	
9:30 AM - 9:45 AM	Welcome: Overview for the day	Ben Halpern, PhD UC Santa Barbara, NCEAS
9:45 AM - 10: 15 AM	Network of networks: Leveraging power from multiple data sources to address long-standing and unanticipated ecological questions	Kim Komatsu, PhD Smithsonian Environmental Research Center
10:15 AM - 10:30 AM	Coffee/Stretch Break	
10:30 AM - 12:00 PM	Breakout discussion group: Addressing the big questions in synthesis science - Challenges, hurdles and innovations Part 1	
12:00 PM - 1:00 PM	Lunch Break	
1:00 PM - 2:30 PM	Breakout discussion group: Addressing the big questions in synthesis science - Challenges, hurdles and innovations Part 2	
2:30 PM - 3:00 PM	Merging concepts of resilience to meet challenges of the Anthropocene	Nancy Grimm, PhD Arizona State University
3:00 PM - 3:15 PM	Wrap up	Ben Halpern, PhD UC Santa Barbara, NCEAS

Keynote Speakers

Kim Komatsu, PhD Smithsonian Environmental Research Center

Network of networks: Leveraging power from multiple data sources to address long-standing and unanticipated ecological questions

A wide variety of data synthesis techniques have been popularized to address long-standing ecological questions, including meta-analysis, cross-experiment data synthesis, and recently coordinated distributed experiments. As these synthesis efforts advance, the curated collections of data available to analyze have grown as well. While originally these individual databases were designed by separate networks of investigators to address a specific ecological question, we now have the opportunity to link databases together to address new and unanticipated questions. Here, I illustrate this point through the use of three large-scale experimental databases (CoRRE, Nutrient Network, and GEx) to examine the global drivers of plant species co-dominance in herbaceous ecosystems through the lens of species coexistence theory. I leverage the unique strengths of these three databases to point to mechanisms underlying co-dominance, including resource availability, environmental heterogeneity, and consumer control. Overall, by linking multiple disparate databases into one global analysis, a more complete understanding of fundamental ecological processes can be achieved.

Nancy Grimm, PhD Professor at Arizona State University

Merging concepts of resilience to meet challenges of the Anthropocene
In Collaboration with Marta Berbés-Blázquez, Mikhail Chester, Elizabeth Cook, David Iwaniec, Sam Markolf, Timon McPhearson, Tischa Muñoz-Erickson.

The Anthropocene, an age where humans have become the main force shaping the environment, is characterized by rapid change, compounded problems, and increasing complexity and uncertainty. For cities, extreme events driven by climate change pose particular challenges, including threats to lives and livelihoods, compounded infrastructure failures, and unequal distribution of risk due to past unjust practices. Strengthening the capacity of these social-ecological-technological systems (SETS) to maintain their essential structure and function when faced with such events is of paramount importance. Yet solutions have been based on prevailing views that the world is complicated, not complex; predictable, not uncertain. Further, solutions often are constrained to single domains (social, ecological, or technological) based on a dichotomous view of human and natural systems. These failures to recognize the interdependent nature of SETS translate to failure to effectively navigate the complexity of the problems. Resilience provides an appropriate conceptual basis for framing solutions for cities and other ecosystems, but is a contested concept with a wide variety of

meanings. Resilience theory has continued to evolve separately within S, E, and T domains or pairs of domains, perpetuating the siloed or dichotomous approach to problem-solving. We advocate the application of a SETS framing, merging perspectives on resilience from sustainable engineering, ecology, social-ecological systems, and social-technical systems thinking to advance resilience theory. A SETS perspective expands the capability to navigate complexity, opens up the problem space, opens up the solution space, and builds capacity for integration and production of diverse knowledge systems.