



## SESYNC Feedbacks

News from the National Socio-Environmental Synthesis Center



### RESEARCH SPOTLIGHT | Pursuit Work in Nature

#### **SESYNC Team Illuminates Drivers of Climate Change**

*A note on the study from SESYNC Director Dr. Margaret Palmer:*

This paper in *Nature* is from one of my favorite SESYNC projects because the authors moved beyond the usual focus on how social decisions impact the environment or how the environment influences people to a focus on how the interactions and feedbacks within the social system (e.g., peoples' behaviors & beliefs, environmental policies, and how they come about) influence environmental outcomes (in this case, the climate). We are seeing more of this type of remarkable work, and it is exactly what is needed to understand how to change the trajectory we are on in this country with respect to reducing carbon emissions. – Margaret Palmer

Read the press release below.

#### **How Politics, Society, and Tech Shape the Path of Climate Change**

*The Social and Political Determinants of Global Warming in the 21st Century*

Annapolis, MD — Politics and society largely dictate climate policy ambitions and therefore the trajectory of greenhouse gas emissions, yet climate change models and projections rarely include political and social drivers. Members of a synthesis team—who span expertise in psychology, economics, climate change, computer science, ecology, and public outreach—simulated 100,000 possible future policy and emissions trajectories to identify relevant variables within the climate-social system that could impact climate change in this century.

The [study](#), published today in the journal *Nature*, indicates that public perceptions of climate change, the future cost and effectiveness of climate mitigation and technologies, and how

political institutions respond to public pressure are all important determinants of the degree to which the climate will change over the 21st century. The study was supported by the University of Maryland's National Socio-Environmental Synthesis Center (SESYNC).

"Small changes in some variables, like the responsiveness of the political system or the level of public support for climate policy, can sometimes trigger a cascade of feedbacks that result in a tipping point and drastically change the emissions trajectory over the century," said lead author Frances C. Moore, an assistant professor with the UC Davis Department of Environmental Science and Policy. "We're trying to understand what it is about these fundamental socio-political-technical systems that determine emissions." [Read more.](#)

## SEMINAR | Is Nitrogen Becoming Less Available?



THE NATIONAL SOCIO-ENVIRONMENTAL SYNTHESIS CENTER

## SEMINAR SERIES

MARCH 16, 2022 AT 3:00 P.M. ET

Dr. Rachel Mason, SESYNC

"Is Nitrogen Becoming Less Available in Terrestrial Ecosystems?"

## VIRTUAL SERIES

**Seminars are free and open to the public. Registration required.**

### Join us at 3 p.m. EDT on March 16 for our next virtual SESYNC Seminar!

Dr. Rachel Mason will present "Is Nitrogen Becoming Less Available in Terrestrial Ecosystems?" based on her postdoctoral work at SESYNC.

**Abstract:** Nitrogen (N) is both necessary for life and potentially harmful to it, so the amount and distribution of reactive forms of nitrogen around the world is an important matter. While N is often viewed as a pollutant (think fertilizer runoff and ocean dead zones), there are reasons to expect that rising atmospheric CO<sub>2</sub> and other global changes are rendering N less accessible to plants and microorganisms. This talk will begin by summarizing the evidence, from sources ranging from pollen chemistry to spectroscopy of cattle manure, that N is indeed becoming less available in many terrestrial ecosystems. [Read more.](#)

**Talks are free and open to the public. Registration is required. [Register here.](#)**

## NEW RESOURCE | Interdisciplinary Graduate Training Guide



**"Training graduate students as the next generation of sustainability leaders... was a SESYNC priority."**

## **Interdisciplinary Graduate Training in Sustainability Guide: Priority Aptitudes and Skills for Training Programs**

By: Nicole Motzer

Sustainability leaders encounter unprecedented socio-environmental problems that challenge traditional modes of disciplinary scholarship and conventional, top-down leadership styles. Training graduate students as the next generation of sustainability leaders to confront these problems was a SESYNC priority. A multi-institutional, interdisciplinary working group met at SESYNC with goals of enhancing and expanding such training by synthesizing existing resources, best practices, and institutional knowledge in widely accessible formats. The group drew from their collective expertise and developed a framework of seven aptitudes and corresponding skills to identify priorities for today's and tomorrow's leadership programs for graduate students in sustainability. [Download the PDF.](#)

### **LATEST VIDEO | Toolbox Initiative**

#### **New SESYNC Video Highlights Facilitation Technique**



#### **The Toolbox Initiative: An Approach to Facilitating Discussion Among Interdisciplinary Teams**

Presented by Dr. Sanford Eigenbrode, a Distinguished Professor at the University of Idaho

Be sure to [subscribe](#) to SESYNC's YouTube channel to receive notifications whenever we add new videos!

**"Narrowing the gap between marine spatial planning aspirations and realities."** Published in *ICES Journal of Marine Science* by SESYNC postdoc Rachel Zuercher, former SESYNC staff member Nicole Motzer and colleagues Rafael A Magris and Wesley Flannery.

**"Disease-mediated nutrient dynamics: Coupling host-pathogen interactions with ecosystem elements and energy."** Published in *Ecological Monographs* by Elizabeth T. Borer, Rachel E. Paseka, Angela Peace, Lale Asik, Rebecca Everett, Thijs Frenken, Angélica L. González, Alexander T. Strauss, Dedmer B. Van de Waal, former SESYNC postdoc Lauren A. White, and Eric W. Seabloom. This paper resulted from the SESYNC Pursuit: [Microbial disease dynamics, ecosystem processes, and human eutrophication of the environment.](#)

**"Determinants of emissions pathways in the coupled climate–social system."** Published in *Nature* by Frances C. Moore, Katherine Lacasse, Katharine J. Mach, Yoon Ah Shin, Louis J. Gross & Brian Beckage. This paper resulted from the SESYNC Pursuit: [Putting people into climate models: A multi-model approach to integrating human behavior and climate change.](#)

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