MultiSector Dynamics Community

Welcome to the newsletter of the **MultiSector Dynamics Community**

Inside This Issue

Hello MultiSector Dynamics (MSD) Community!

This issue focuses on this year's AGU Meeting taking place December 13-17. Below you will find information about attending MSD sessions and presentations, as well as guidance on the different types of talks happening during this online meeting.

On the occasion of Prof. Karen Fisher-Vanden's election as the President of the Association of Environmental and Resource Economists (AERE), we are also featuring a highlight on her career and contributions to our community.

www.multisectordynamics.org

Guide to AGU 2021 sessions

We have developed two guides to help our community navigate this year's AGU schedule:

1. A **detailed tabular guide** which can be downloaded through **this link**. Clicking on any of the talks listed will take you to the talk's entry on the AGU Fall Meeting's Schedule page. The tabular summary of sessions is a very helpful one-stop source for details on timing, presenters, and titles.
2. A **graphical summary guide**, found on the next page and in a pdf format, shows the big picture of MSD at AGU indicating all the sessions (co-)organized by our community of practice. Clicking on each session's tab will take you to the session's page on the AGU schedule.

In addition to eight Oral sessions and five Poster sessions, each with multiple presentations and posters, our community is organizing a Town Hall and a Union Session on December 8 and 16, respectively:

TH026 - DOE's Earth and Environmental System Modeling: Opportunities in Coastal Systems, Urban Resilience, and Extreme Events

U41A - Modeling MultiSector Dynamics to Understand Adaptive Pathways

Town halls will be conducted live, will be one hour in length and will be hosted on Zoom Webinar. Union Sessions are multidisciplinary and feature topics with broad interest outside of a single section. They consist entirely of invited abstracts to highlight science in all other programs for the purpose of facilitating discussion with leading experts. Both will be recorded and available for on-demand viewing.

The detailed schedule for Oral and Poster sessions is presented in detail in the following pages (all times EST US).

Oral sessions

Oral discussion sessions are occurring in two formats (mix of in-person and online presenters) and online-only. Each discussion session will be 75 minutes in length, featuring brief overview presentations from each presenter and time for audience Q&A and discussion, all moderated by the session chairs. Presenters will prepare and present one to three slides for use during their overview presentation. Online presenters can present and participate in both hybrid and online-only sessions. All attendees can participate and ask questions in-person or online during hybrid sessions.

Both hybrid and online-only oral discussion sessions will be recorded and available for on-demand viewing by attendees during the rest of the meeting. Oral discussion sessions will use Zoom Webinar, which allows the chairs and speakers to be in a panel view. **There are eight Multisector Dynamics Oral Sessions happening this year:**

GC11B - MultiSector Dynamics: Science and Modeling for Societal Transformations I Oral

GC12B - MultiSector Dynamics: Science and Modeling for Societal Transformations II Oral

GC13B - MultiSector Dynamics: Science and Modeling for Societal Transformations III Oral

GC14B - MultiSector Dynamics: Science and Modeling for Societal Transformations IV Oral

GC21D - MultiSector Dynamics: Energy-Water-Land Interactions at Multiple Scales I Oral

GC22D - MultiSector Dynamics: Convergent Approaches for Environmental Change, Resilience, and Society in Urban Areas I Oral

GC23B - MultiSector Dynamics: MultiSector Impacts of Energy Transitions I Oral

ED43A - Preparing Next-Generation Researchers to Meet the Transdisciplinary Challenges of Climate Change (Including MultiSector Dynamics) I Oral

Poster sessions

Hybrid poster sessions are scheduled from 16:00-18:00 CST each day. In-person presenters in hybrid sessions are asked to create a traditional paper poster for display in the poster hall on the day of their session. Paper posters can be displayed in the poster hall for the entire day of the session. In-person presenters are also encouraged to create a dynamic, interactive online poster or simple PDF for display in the online poster gallery. **There are five Multisector Dynamics Poster Sessions happening this year:**

GC15E - MultiSector Dynamics: Science and Modeling for Societal Transformations V Poster

GC25M - MultiSector Dynamics: MultiSector Impacts of Energy Transitions II Poster

GC25K - MultiSector Dynamics: Convergent Approaches for Environmental Change, Resilience, and Society in Urban Areas II Poster

GC25L - MultiSector Dynamics: Energy-Water-Land Interactions at Multiple Scales II Poster

ED45I - Preparing Next-Generation Researchers to Meet the Transdisciplinary Challenges of Climate Change (Including MultiSector Dynamics) II Poster

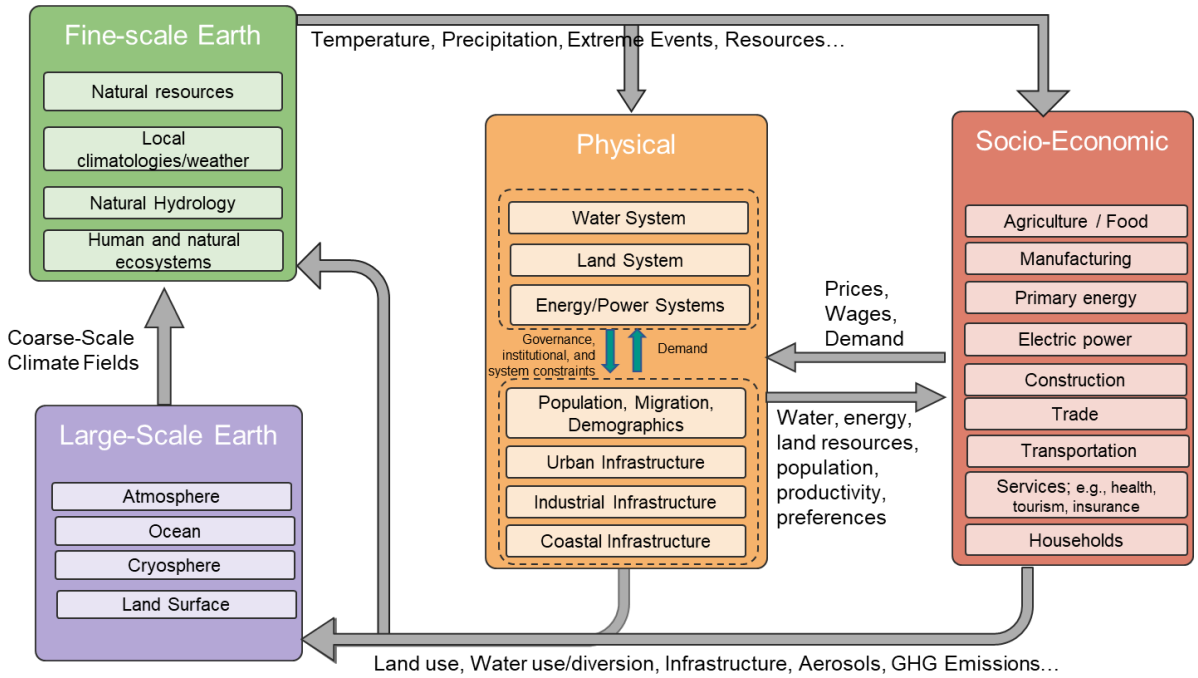
MSD Career Highlight: **Karen Fisher-Vanden**

Prof. Karen Fisher-Vanden has been recently elected as the President of the Association of Environmental and Resource Economists (AERE) where she previously served on the Board of Directors. In this article we highlight Prof. Fisher-Vanden's career and contributions to the MultiSector Dynamics community.

Karen Fisher-Vanden is Professor of Environmental and Resource Economics and Public Policy, and Director of the Institute for Sustainable Agricultural, Food, and Environmental Science (SAFES) at Pennsylvania State University. Professor Fisher-Vanden holds a B.S. in Mathematics and a B.A. in Economics both from UC Davis, a M.S. in Management Science from the Anderson Graduate School of Management at UCLA, and a Ph.D. in Public Policy from Harvard University. She was a Lead Author of the IPCC's Fifth Assessment Working Group III Report, and served on the U.S. Climate Change Science Program (CCSP) Product Development Advisory Committee and lead author of a congressionally-mandated CCSP 's Synthesis and Assessment Report report on global change scenarios. She was recently named President-elect of the Association of Environmental and Resource Economists (AERE) where she previously served on the Association's Board of Directors. She has also served as a member of the EPA Science Advisory Board on Economy-wide modeling. She currently serves on the editorial boards of *Review of Environmental Economics and Policy* (REEP), *Journal of Economic Behavior and Organization* (JEBO), *Energy Economics*, and *Journal of Global Economic Analysis* (JGEA).

She has led a number of large externally-funded research programs and is currently co-Director and Principal Investigator of the Program on Coupled Human and Earth Systems (PCHES), a large Cooperative Research Agreement with the US Department of Energy's Office of Science, Biological and Environmental Research, MultiSector Dynamics program.

Her area of research primarily focuses on economy-wide and integrated modeling for climate change impact and adaptation analysis. The interactions between energy, water, and land systems are poorly understood, yet have important implications for food security, reliability of electric power supply, demographic patterns, risk and response behaviors, and the resilience of communities and critical infrastructure. This type of work has required working on multidisciplinary teams and coupling a variety of tools including statistical tools, data products, and computational models. The figure below shows the type of modeling frameworks that she and her team have developed to capture integrated energy-water-land (EWL) systems dynamics and interdependent infrastructures.



This work is motivated by the recognition that most studies focus on one sector in isolation from the others—e.g., effects of changes in climate on the agricultural sector or the power system. These studies are missing not only important human responses to these sectoral impacts, but also the interlinkages between sectors. For example, water shortages not only impact each of these sectors individually, but responses to these shortages by one sector are likely to affect others since these sectors are competing for scarce water. By connecting these physical systems models with a socio-economic model, the team is able not only to capture important human responses to sectoral impacts but are also able, through the passing of prices and demand, to capture sectoral interlinkages. For example, climate change impacts on the power sector will increase electricity prices which will affect the cost of production in other sectors and sales of goods and services. The socio-economic model can be thought of as the coordinator of information passing across these physical systems models to capture important sectoral interlinkages.

Dr. Fisher-Vanden's research has been published in journals such as the *Journal of the Association of Environmental and Resource Economists* (JAERE), *Journal of Environmental Economics and Management* (JEEM), *Journal of Development Economics*, *Journal of Economic Perspectives*, *Climatic Change, Energy Economics,* and *Land Economics*

MSD Job Listings

Our website features a **careers page** that lists available MSD-focused positions at all levels. If you'd like to post a position to be featured in this page, please email us at: contact@multisectordynamics.org. Here are some of our latest postings:

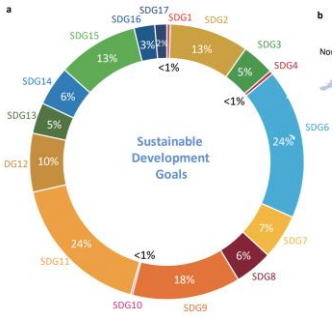
USGS Data Scientist-National Climate Adaptation Science Center
As a Data Scientist within the National Climate Adaptation Science Center, some of your specific duties will include: working with researchers to summarize and package their data and metadata for dissemination …

PostDoc position on Conditions shaping transformational climate change adaptation at TU Delft
Societies have always been adapting to changing environments. As hazards intensify in frequency and severity with climate change, adaptation strategies that proved successful in the past face limits…

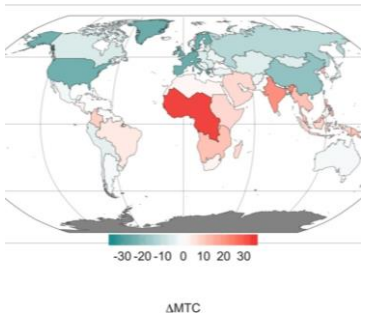
Assistant Professor in Hydrology: University of Wisconsin-Madison (Cluster Hire)
We specifically seek candidates with expertise in the transport, transformation, and fate of solutes and materials carried by groundwater and/or surface water, as well as in the solute exchange and processing that occurs within or at the interface between these two domains…

MSD Publications

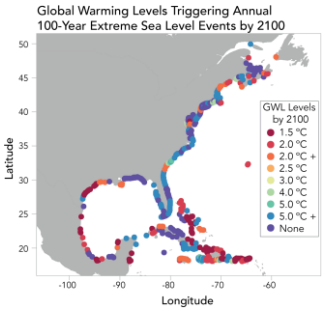
We have been posting and will be regularly updating select MSD publications on the website, under the Publications page. If you have any publications you would like us to highlight, please email contact@multisectordynamics.org.
Below you can find some of the publications posted most recently:



A review of systems modelling for local sustainability



Integrated modeling of human-earth system interactions: An application of GCAM-fusion



Extreme sea levels at different global warming levels

This newsletter has been edited by Rohini Gupta, Antonia Hadjimichael, and the Community of Practice Facilitation Team. This and all previous newsletters can be accessed at the Newsletters page of our website. If you have any suggestions, concerns or other feedback about this newsletter or the MSD website, please email contact@multisectordynamics.org.