

# MultiSector Dynamics Community

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

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Hello MultiSector Dynamics (MSD) Community!

In this issue, we are highlighting the request for proposals for new MSD working groups and upcoming events being organized by the MSD Community of Practice. We are also featuring the work of Yasmin Romitti, a PhD Candidate at Boston University. You will also find some recent exciting publications and job postings.

[www.multisectordynamics.org](http://www.multisectordynamics.org)

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## 2022 Request for Proposals for new MultiSector Dynamics Working Groups

We are pleased to announce the 2022 request for proposals for new MultiSector Dynamics Working Groups. Working Groups are a central component of the MSD Community of Practice, where researchers from different disciplines, projects, and institutions coordinate and innovate MSD research around various science questions, themes, and methodological approaches as well as support community activities to grow the MSD CoP in a diverse, equitable and inclusive way.

At present, the MSD CoP has two types of working groups:

- **WG Type 1:** Focus on science questions, themes, or approaches
- **WG Type 2:** Focus on community activities

The current working groups are:

- **Type 1:** Human Systems Modeling, Uncertainty Quantification and Scenario Development, Urban Systems, Multisector Impacts of Energy Transitions
- **Type 2:** Open Science and FAIR Data, Professional Development and Education for Early Career Scientists

These WGs are currently undergoing a renewal process. For more information on the current WGs, please visit the MSD CoP website (<https://multisectordynamics.org/working-groups/>). In this new RFP round, we expect to initiate 3 new Working Groups (two new Type 1 WGs, one new Type 2 WG) for a term of 2 years each.

**Proposals must be submitted through the [MSD Working Group proposal 2022 online form](https://forms.gle/h4fU9jqKWkbJQDkn8) (<https://forms.gle/h4fU9jqKWkbJQDkn8>) by **Monday, August 1, 2022, 11:59 pm Pacific Time Zone**.**

To ensure coordination between proposals, and to avoid multiple proposals for similar WGs, we ask that you identify your new WG idea on the [Spring 2022 MSD WG proposals database](#) ahead of the submission of your letter of intent. If you see that a similar WG proposal is already in development, please coordinate with that group. You will need to enter the following information:

You will need to enter the following information to fill in the online form:

- (1) Working Group Type
- (2) Working Group Name
- (3) Working Group key personnel (name and affiliation of co-chairs, name and affiliation of core active members)

#### WG Type 1

**WG Focus:** What science questions, themes, and methodological approaches will your WG focus on? 1000 characters max

**WG Activities & Deliverables:** What specific activities will your WG conduct and what specific deliverables to the MSD CoP will your WG produce? 1000 characters max

**Advancing MSD Science:** How will your WG advance MSD science? 1000 characters max

**Benefiting the MSD CoP:** What is your plan to ensure the largest number of MSD CoP members contribute and benefit from your WG? How will you recruit WG members? How will you share your activities and deliverables with the MSD CoP? 1000 characters max

**WG evaluation:** How do you propose to evaluate the success of your WG? 1000 characters max

#### WG Type 2

**WG Focus:** What types of community activities will your WG focus on? 1000 characters max

**WG Activities & Deliverables:** What specific activities will your WG conduct and what specific deliverables to the MSD CoP will your WG produce? 1000 characters max



**Benefiting the MSD CoP:** What is your plan to ensure the largest number of MSD CoP members contribute and benefit from your WG? How will you recruit WG members? How will you share your activities and deliverables with the MSD CoP? *1000 characters max*

**WG evaluation:** How do you propose to evaluate the success of your WG? *1000 characters max*

For those who would like to know more about existing WG's experience putting together their WG proposals and organizing their WG, we will have an MSD Community of Practice webinar with several co-chairs of current MSD WGs who will be able to answer any questions you have on **Thursday June 30<sup>th</sup>, 10am Pacific Time**. Please register for that webinar here:

[Register Here](#)

After registering, you will receive a confirmation email containing information about joining the meeting. Questions regarding MSD WG renewal proposals should be addressed to Erwan Monier ([emonier@ucdavis.edu](mailto:emonier@ucdavis.edu)).

## MSD Research Spotlight: Yasmin Romitti

*Yasmin's PCHES-sponsored work shows how urban populations adapt to increasing temperatures exposures, the associated energy demand consequences of such adaptation, and how such adaptation moderates heat-related health outcomes.*



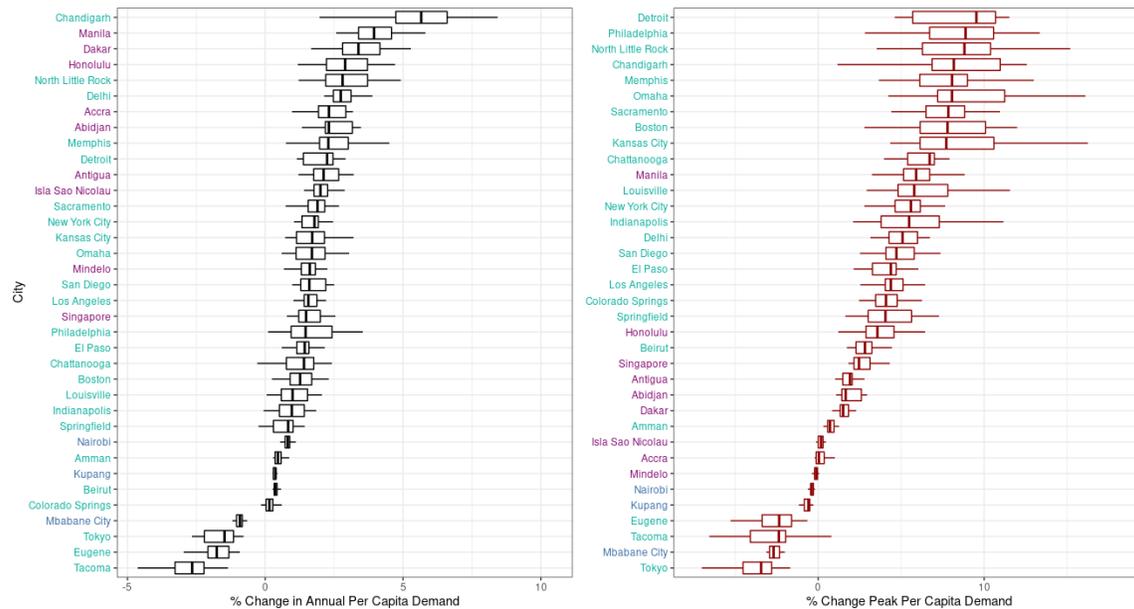
Yasmin Romitti is a PhD candidate working with Professor Ian Sue Wing in the Earth and Environment department at Boston University and a National Science Foundation Research Trainee in the BU graduate program in urban biogeoscience and environmental health (BU URBAN). Broadly, her research focuses on questions that lie at the intersection of climate impacts, energy, and health. Prior to her graduate studies, Yasmin worked as a research associate with both the Board on Atmospheric Sciences and Climate and the Board on Earth Sciences and Resources at the National Academies of Sciences, Engineering, and Medicine in Washington, D.C. She holds a Bachelor's degree in International Relations from Boston University (2012) and a Master's of Advanced

International Studies from the Diplomatic Academy of Vienna in Austria (2014).

Cities will be home to 68% of the world's population by 2050 and are on the front lines of climate adaptation. As extreme and high temperatures continue to increase, an empirical understanding how urban populations adapt to more intense and frequent heat exposure, what the associated energy demand consequences of such adaptation are, and to what extent these adaptation mechanisms moderate heat-related health outcomes has important implications for climate adaptation and resilience planning. Yasmin's dissertation research delves into these questions using methods across the disciplines of economics, climate impacts, population health and epidemiology.

There is a critical need to understand the drivers of demand at the fine spatial and temporal scales at which urban residents make adaptation decisions. Recently, Yasmin and Ian Sue Wing used reduced

form response surfaces in conjunction with temporally downscaled projections of mid-century temperatures from 21 CMIP5 global climate models to quantify the net electricity demand consequences of decreased cool season heating and increased warm season cooling across a diverse set of world cities representing diverse latitudinal gradients, levels of development, and infrastructure. Compared to the tropics, impacts in mid-latitude cities are larger in magnitude, highlighting the importance of the structure of electricity demand in addition to future shifts in the distribution of temperatures.



Other components of Yasmin's dissertation work focus on using hierarchical models for fine spatial scale quantification of residential air conditioning (AC) prevalence across U.S. metropolitan areas, and how the distribution of AC differs across varying levels of population social and environmental vulnerability. She is also investigating the extent to which residential AC moderates heat-related health outcomes using a unique dataset of hospitalization and emergency department records from the state of California.

#### Highlighted Articles:

Romitti, Y. and I. Sue Wing (2022). Heterogeneous climate change impacts on electricity demand in world cities circa mid-century. *Scientific reports*, 12(1), 1-14.

Romitti Y, I. Sue Wing, K. Spangler, and Gregory A. Wellenius (2022). Inequality in the availability of residential air conditioning across 115 US metropolitan areas. In review.

## Upcoming MSD Events

The MSD CoP is currently coordinating and planning a variety 2022 calendar of community events for later this summer and upcoming fall.

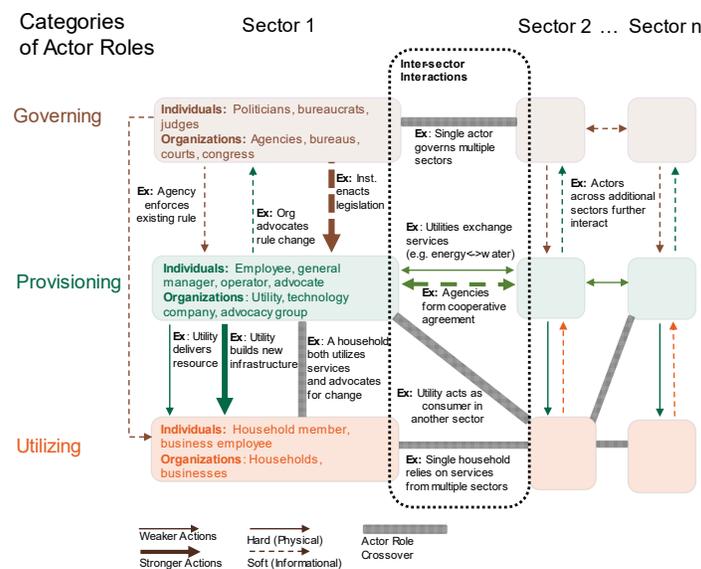
**July 20<sup>th</sup>, 2022:** The Working Group on Professional Development and Education for Early Career Scientists is hosting an MSD Early Career Panel scheduled for 3-4:30pm ET US via webinar. The goal of the career panel is to give Early Career Researchers insight into what it means to be an MSD researcher from multiple diverse perspectives. The panel discussion will feature the perspectives from community members ranging in their professional experience, disciplinary expertise, career path, and

institutions. We are pleased to announce Nicole Jackson (Sandia), Vivek Srikrishnan (Cornell), Jennie Rice (PNNL), and Pat Reed (Cornell) as panelists.

**August 2022:** The Working Group on Uncertainty Quantification and Scenario Development will be hosting an uncertainty-focused webinar that will draw on their currently in revision Earth’s Future MSD special issue review of challenges, needs, and opportunities for better addressing uncertainty in MSD research. The webinar will also be a launch event for free upcoming online training sessions this Fall that will build on the recently released open-access eBook, ‘Addressing Uncertainty in MultiSector Dynamics Research’, which includes cloud-supported Jupyter notebook tutorials.



**September 2022:** The Working Group on Human Systems Modeling will be hosting a webinar discussion of their human systems typology that is currently in revision in the Earth’s Future MSD special issue. The webinar will discuss how the proposed typology lays an intellectual foundation for human systems modeling in MSD, helping cohere human systems modeling research across the MSD project portfolio and establishing a roadmap for future MSD research.



A general conceptualization of actors in multisector systems. We conceive of three categories of actors defined across categories of actor roles: 1) governing actors, 2) provisioning actors, and 3) utilizing actors. Within the categories, the typology can be applied flexibly at the individual or organizational level, as well as across other actor distinctions such as formal versus informal, niche versus regime, and so forth. Cross-sector relationships are conceptualized through cross-sector interactions and cross-sector actor role crossovers.

## MSD Earth's Future Special Section

The MSD Community has an exciting special section in *Earth's Future: Modeling MultiSector Dynamics to Inform Adaptive Pathways*. Since its inception, 13 papers have been published from author groups from all around the world with several more expected to come out soon.



[Click here to read more](#)

## 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](mailto:contact@multisectordynamics.org). Here are some of our latest postings:

### [Multiple engineer positions for the Bureau of Reclamation, a water and power management agency in the western U.S.](#)

This posting is to fill multiple positions on the Colorado River Basin Research and Modeling Team stationed in Boulder, CO. Our team works on modeling and analysis to support near- and mid-term decisions as well as long-term planning for major Colorado River policies.

### [Two Postdoc Positions in Climate Risk Management – Thayer School of Engineering, Dartmouth College](#)

Two full-time postdoc positions are available at the Thayer School of Engineering at Dartmouth College to join the Keller research group. The successful candidates will become part of a transdisciplinary research group in the area of climate risk management.

### Regional Energy Innovators Internships at PNNL

Pacific Northwest National Laboratory (PNNL) is pleased to announce a new pilot program, the Regional Energy Innovators Internship, to support the development of a diverse and innovative clean energy workforce in our region. This competitive, paid internship will match undergraduate and graduate students with mentors in multiple disciplines and sectors to explore clean energy science, innovation, and policy; build their research capabilities; and expand their professional network in the Pacific Northwest.

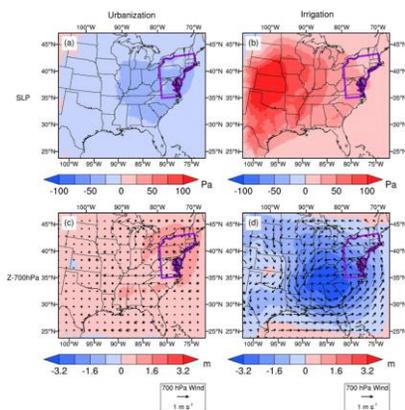
### 2-Year Cornell Postdoc Opportunity: Climate Projection Diagnostics

Professor Flavio Lehner at Cornell University is looking for a Postdoctoral Associate to develop a novel set of process-oriented diagnostics that will enable evaluating and constraining regional projections of runoff and other hydroclimate variables from climate models.

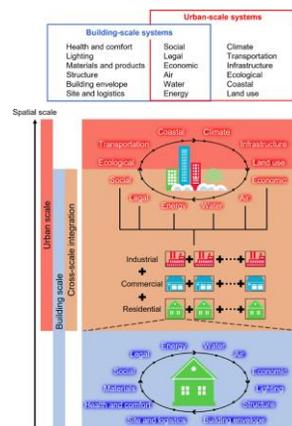
## MSD Publications

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](mailto:contact@multisectordynamics.org).

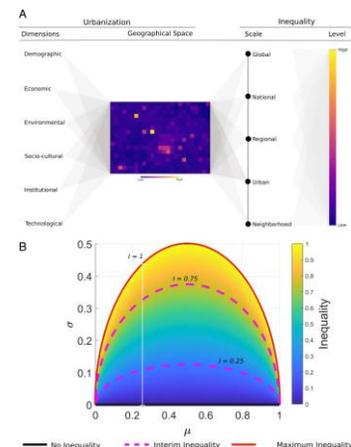
Below you can find some of the publications posted most recently:



[Impacts of Large-Scale Urbanization and Irrigation on Summer Precipitation in the Mid-Atlantic Region of the United States](#)



[Integrated assessment across building and urban scales: A review and proposal for a more holistic, multi-scale, system-of-systems approach](#)



[Infrastructure inequality is a characteristic of urbanization](#)

This newsletter has been edited by Rohini Gupta 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](mailto:contact@multisectordynamics.org).