

Environmental Science & Policy Program

FALL STUDENT RESEARCH SYMPOSIUM

October 17, 2022
8:30 AM - 1:00 PM
Kellogg Hotel & Conference Center
Lincoln Room



Environmental Science
and Policy Program
MICHIGAN STATE UNIVERSITY

Schedule

8:30-9:00 AM	Registration & Breakfast
9:00-9:15 AM	Welcoming Remarks Dr. Lifeng Luo, ESPP Director
9:15-10:00 AM	Plenary Talk Dr. Jianguo “Jack” Liu “Systems Integration for Sustainability across Local to Global Scales”
10:00-10:15 AM	Break
10:15-11:45 AM	Breakout Sessions Student Presentations
11:45 AM-12:00 PM	Break
12:00-1:00 PM	Lunch and Plenary Talk Dr. Stephen Gasteyer “Collaboration Across Disciplines and Scale: Science and Policy to Achieve Food and Water Justice in a Turbulent World”
1:00 PM	Closing Remarks

Welcome

Dr. Lifeng Luo

Michigan State University

**Director, Environmental
Science and Policy Program**

**Professor, Department of
Geography, Environment &
Spatial Sciences**

Dr. Lifeng Luo is the Director of the Environmental Science and Policy Program. He is also a Professor in the Department of Geography, Environment, and Spatial Sciences. His research interests are mainly in the field of hydroclimatology, a multidisciplinary field with strong links to climate science, hydrology, and water resources.



Dr. Luo attended Peking University to study Atmospheric Sciences before coming to the U.S. for advanced degrees. He received both an MS and Ph.D. in Atmospheric Sciences/ Climatology from Rutgers University, advised by Prof. Alan Robock. In 2003, he started his postdoctoral training at Princeton University with a joint appointment between the Department of Civil and Environmental Engineering and the Program of Atmospheric and Oceanic Science. He was then promoted to continue working at Princeton as a research scientist in the Land Surface Hydrology Group led by Prof. Eric Wood. Dr. Luo joined the faculty at Michigan State University in the fall of 2009.

Plenary Speaker

Dr. Jianguo “Jack” Liu

Michigan State University

**University Distinguished
Professor**

**Rachel Carson Chair in
Sustainability**

**Director of the Center for
Systems Integration and
Sustainability**



Plenary Title

Systems Integration for Sustainability across Local to Global Scales

Abstract

The world is facing numerous sustainability challenges such as biodiversity loss, climate change, deterioration of ecosystem services, food insecurity, and water shortages. To address these and other challenges effectively, it is essential to develop insights and methods using systems integration – holistic approaches to study human-nature interactions across space, over time, and among organizational levels, through integrating various disciplines (e.g., natural and social sciences, policy, and technology). In this talk, the presenter will show example applications of insights and methods of systems integration developed at the local scale to regional, national, and global scales. He will also discuss challenges and opportunities for future systems integration to understand and promote sustainability.

Biography

A human-environment scientist and sustainability scholar, Jianguo “Jack” Liu holds the Rachel Carson Chair in Sustainability, is University Distinguished Professor at

Michigan State University and serves as director of the Center for Systems Integration and Sustainability.

Liu takes a holistic approach to addressing complex human-environmental challenges through systems integration, such as the integration of ecology with social sciences, policy and advanced technologies. He is particularly keen to connect seemingly unconnected issues, for example, telecoupling, divorce and environmental sustainability. His work has been published in journals such as *Nature* and *Science* and has been widely covered by the international news media.

Liu has served on various international and national committees and panels. He was a member of the Board of Reviewing Editors for *Science* and has been named to the Commission on Sustainable Agriculture Intensification. Also, Liu was a coordinating lead author of the global assessment of biodiversity and ecosystem services organized by the Intergovernmental Platform on Biodiversity and Ecosystem Services.

Liu also is the founder of the International Network of Research on Coupled Human and Natural Systems (CHANS-Net.org) and is a past president of the U.S. Regional Association of the International Association for Landscape Ecology.

In recognition of his efforts and achievements in research, teaching, and service, Liu has received many awards, such as being elected to the American Academy of Arts and Sciences, the American Philosophical Society, the Royal Norwegian Society of Sciences and Letters and named a fellow of the American Association for the Advancement of Science (AAAS).

Plenary Speaker

Dr. Stephen Gasteyer

Michigan State University

Associate Professor

Department of Sociology



Plenary Title

“Collaboration Across Disciplines and Scale: Science and Policy to Achieve Food and Water Justice in a Turbulent World”

Biography

Dr. Stephen P. Gasteyer is an Associate Professor of Sociology at Michigan State University. His research focuses on community development, environmental justice, and the political ecology of landscape change, with specific attention food, energy, water, and public health. Recent research has addressed the food access and impacts urban greening in small US cities, alternative energy and community action, environmental equity in access to water and sanitation, and water governance. Dr. Gasteyer was a 2015-16 Fulbright Scholar at Birzeit University, Ramallah, Palestinian territories. Dr. Gasteyer’s previous positions include: assistant professor of Human and Community Leadership Development at the University of Illinois (2005-2008); Research and Policy Director at the Rural Community Assistance Partnership in Washington, DC (2002-2005); research consultant on issues of global water governance (2001-2002); UNAIS project worker on Agroecosystem research at the Applied Research Institute Jerusalem, and the Palestine Institute for Arid Lands and Environmental Studies, Palestinian territories (1993-1996); Program Associate for the Committee on Sustainable Agriculture, World Resources Institute (1991-1993). He was a Peace Corps Volunteer in Mali from 1987 through 1990. He received a BA from Earlham College in 1987, and a Ph.D. in Sociology from Iowa State University in 2001.

Student Presentations: Session 1

Lincoln Room

Time	Presenter	Title
10:15-10:30	Liang Zhao	Five-week warning of COVID-19 peaks prior to the Omicron surge in Detroit, Michigan using wastewater surveillance
10:30-10:45	Yuqian Zhang	Identifying Global Human-Wildlife Conflict Hotspots with Big Media
10:45-11:00	Emily Milton	Research at the Confluence of Archaeological and Environmental Sciences in the Central Andes of Peru
11:00-11:15	Graham Diedrich	Forests as a Climate Solution: State Policy Tracking Initiative
11:15-11:30	Jing Zhou	COVID in Zoos

Student Presentations: Session 2

Room 103 AB

Time	Presenter	Title
10:15-10:30	Marcela Tabares	Dissimilatory Nitrate Reduction to Ammonia Nitrate by Geobacter Bacteria and Applications in Fertilizer Recovery
10:30-10:45	Sampriti Sarkar	Modelling Mid-western Corn Yield Response to Phosphorus Fertilizer in Michigan
10:45-11:00	Xin Lan	Long-term Temperature Change in a Lake under Climate Change
11:00-11:15	Meicheng Shen	The Influence of Forest Canopy Structure on Within-canopy Radiation Partitioning
11:15-11:30	Yuxian Xiao	How Effective Are Low-Emission Vehicle Standards?

Student Presentations: Session 3

Room 104 AB

Time	Presenter	Title
10:15-10:30	Ahmed Elkouk	Application of the Community Land Model to explore levers of water sustainability in the American Southwest
10:30-10:45	Clara Graucob	Comparison of “Objective” vs. Perception-based Resilience Assessments in Rural Cambodia
10:45-11:00	Elise Breshears	Is Mandatory Disclosure Really Mandatory? An Evaluation of the Home Energy Score Program
11:00-11:15	Natalie Overton	Who’s Going Green? Mapping Environmentalist Identity as a Function of Pro-Environmental Civic Engagement and Personal Behaviors

OVERVIEW OF THE ENVIRONMENTAL SCIENCE AND POLICY PROGRAM

GOALS OF ESPP

The Environmental Science and Policy Program (ESPP) was established in 2003 to:

- Build graduate education programs that are innovative, interdisciplinary, and campus wide.
- Facilitate interdisciplinary environmental research at MSU and, in particular, to link MSU research with national and global research priorities.
- Make MSU's areas of excellence better connected with and more visible in national and global efforts.

THE NATURE OF OUR WORK

ESPP spans traditional disciplinary boundaries to facilitate environmental research and education at MSU. As such, it enables a learning environment for creative interdisciplinary science. We work together with colleges and departments in a collaborative manner to promote innovative interdisciplinary approaches to solving environmental problems. ESPP brings together faculty and students from across campus to advance the knowledge of environmental science and policy and to address pressing environmental challenges at a variety of scales. In so doing, we recognize and value diversity, inclusion, and engagement.

ESPP STRUCTURE AND ORGANIZATION

ESPP is structured to be flexible and inclusive. Our programs and events are open to all MSU faculty and students. Although the administrative home is the College of Social Science, ESPP integrates faculty, graduate students, and resources from all schools, programs, and departments across MSU.



Environmental Science & Policy Program

**APPLY
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DUAL MAJOR PH.D.

GRADUATE SPECIALIZATION

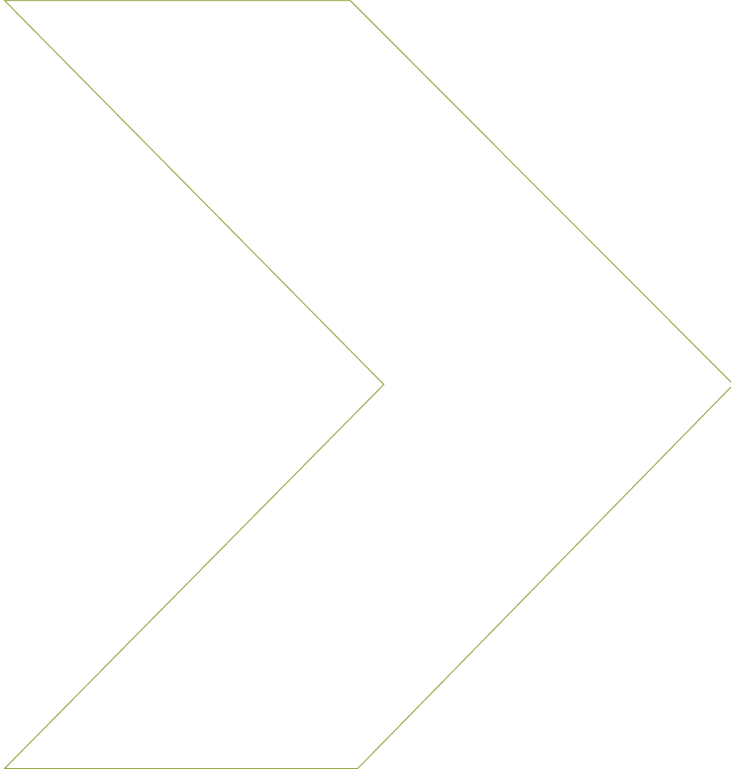
GRADUATE CERTIFICATE

**Deadline for Fall Semester:
February 1**

**Deadline for Spring Semester:
October 15**



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