



Institute for Sustainability, Energy, and Environment (iSEE)

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iSEE Funds Two Start-up Projects

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An interdisciplinary proposal for a “Future Metropolis Initiative” — to address urban climate threats and make cities more sustainable — has been awarded a two-year, \$50,000 planning grant from the Institute for Sustainability, Energy, and Environment (iSEE).



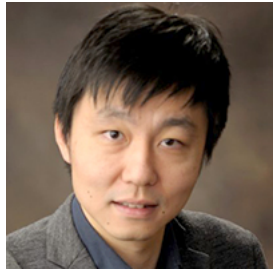
A view of the New York skyline. Credit: Pixabay

Additionally, iSEE has awarded \$30,000 in seed funding for an interdisciplinary proposal to examine the economic and human health effects of exposure to wildfire smoke on a broad scale, to help inform climate policy.

The awards are part of iSEE’s program to seed-fund multidisciplinary research, visioning, and planning activities on ambitious topics related to sustainability, energy, and environment. The goal is to support the development of strong proposals that will attract larger external grants of \$1 million or more.

“Researchers from across campus are tackling climate change issues at many different levels, from advancing our understanding of causes and effects to policy evaluations and the development of technologies to support climate mitigation, helping address emerging challenges and new realities,” said Jeremy Guest, iSEE Associate Director for Research. “With iSEE seed funding, our teams will integrate concepts and tools from across disciplines to compete for larger grants.”

The Future Metropolis Initiative, led by Civil and Environmental Engineering Assistant Professor Lei Zhao, is designed to tackle the complexity of climate change and its cascading effects on cities. Occupying just 2% to 3% of the Earth's land surface, cities house more than 50% of the world's population and contribute to about 75% of carbon emissions from global energy use. Many climate-driven threats — such as extreme weather, water scarcity, and energy insecurity — are rooted in or exacerbated by the high population densities and infrastructure of urban centers. Absent measures to understand and ameliorate these risks, they are expected to intensify with rapid urban development.



Zhao



Hultgren

The Future Metropolis Initiative will bring together an interdisciplinary team of experts in climate, the built environment, health, energy, transportation, policy, and human and community behavior — coupled with innovative geographical information systems, artificial intelligence/machine learning, and computational and data science solutions — to build an integrated platform addressing the Grand Challenges facing cities in a holistic, equitable way.

“With this planning grant from iSEE, we can begin to build a transformative and integrated system that is both science-driven and solution-oriented to foresee climate risks in cities, to foster innovative urban solutions, and to advance global sustainable growth,” Zhao said.

The wildfire proposal is led by Agricultural and Consumer Economics Assistant Professor Andrew Hultgren, who has done previous work assessing the impact of climate change on global agricultural yields. Research has demonstrated that wildfires are increasing in size and cost, with far-reaching implications for human health and the economy; further, climate change has been linked to increased exposure to wildfires. To date, however, no study has examined all of those factors combined, at either a regional or global scale, leaving a “critical gap” in our understanding of the social and economic impacts of climate change and policies needed to address them, Hultgren said.

“This project will lay the foundation for a multidisciplinary research agenda that can close this gap and potentially feed directly into U.S. environmental policy,” Hultgren said. “iSEE’s funding is critical to building out our capacity to quantify the social impacts of a changing wildfire regime under future warming — information that can be used by local, regional, and national policymakers in their climate policy decision-making.”

[Read more about these grants and other iSEE seed funding >>>](#)

— News release by iSEE Communications Specialist Julie Wurth

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