



**Institute for Sustainability,
Energy, and Environment**

Meet iSEE

ACTIONABLE RESEARCH

Foster interdisciplinary research to address fundamental challenges in sustainability, energy, and environment



EDUCATION & OUTREACH

Provide national and international leadership in iSEE specialty areas through interdisciplinary activities



CAMPUS SUSTAINABILITY

Develop and implement strategies for a sustainable environment on the University of Illinois campus and beyond



RESEARCH FOCUS AREAS



CLIMATE SOLUTIONS

- Using geospatial tools, plant modeling, novel farming approaches, and decision support tools
- Helping society mitigate — and adapt to — climate change for the benefit of human health and ecosystems



ENERGY TRANSITIONS

- Growing the economy, raising living standards, and reducing poverty through new green energy sources
- Developing sustainable biofuels and bioproducts, and designing technologies that convert waste into bioenergy



SECURE & SUSTAINABLE AGRICULTURE

- Improving land use, substituting crops, and adopting new technologies, robotics, AI, and machine learning to further regenerative ag and produce safe foods
- Recovering water, sugars, and nutrients, monitoring runoff and emissions from land, air, and space



SUSTAINABLE INFRASTRUCTURE

- Designing, building, maintaining, and updating operational and transportation infrastructure, sanitation, and more
- Addressing at-risk systems, examining policy and incentives, and planning alternatives to avert emissions



WATER & LAND STEWARDSHIP

- Protecting our air, water, forests, and grasslands — while providing sustenance for humans and wildlife
- Creating cyberinfrastructure — and policies — to reduce nutrient runoff, better use marginal land, track vector-borne diseases, and help insecure communities



MAJOR RESEARCH CENTERS & PROJECTS



Center for Advanced Bioenergy and Bioproducts Innovation (CABBI)

- FUNDED: \$115M (2017-22); \$147.5M (2022-27), U.S. Department of Energy
- PI: Andrew Leakey; 58 Co-PIs; 21 institutions
- GOAL: Provide the scientific discoveries and new technologies to develop an economically viable and ecologically sustainable domestic biofuel and bioproducts industry from dedicated bioenergy crops
- MORE INFO: cabbi.bio



Agroecosystem Sustainability Center (ASC)

- FUNDED: More than \$10M in grants from multiple agencies
- PI: Kaiyu Guan
- GOAL: Tackling climate change with new, advanced monitoring and modeling of agroecosystems; key themes for more sustainable farming include carbon, water, energy, nutrients, biosecurity, and biodiversity
- MORE INFO: asc.illinois.edu



Sustainable Colocation of Agricultural and Photovoltaic Electricity Systems (SCAPES)

- FUNDED: \$10M (four years), U.S. Department of Agriculture NIFA
- PI: Madhu Khanna
- GOAL: Addressing fundamental climate challenges while increasing crop production and simultaneously producing renewable energy – and maximizing farm profitability
- MORE INFO: scapes.illinois.edu



Institute for Geospatial Understanding through an Integrative Discovery Environment (I-GUIDE)

- FUNDED: \$15M (five years), National Science Foundation
- PI: Shaowen Wang
- GOAL: Enabling transformative discovery and innovation to tackle fundamental scientific and societal challenges; achieving significant breakthroughs by harnessing the vast, diverse, and ever-growing corpus of geospatial data
- MORE INFO: iguide.illinois.edu



Illinois Farming and Regenerative Management (I-FARM)

- FUNDED: \$3.9M (three years), U.S. Department of Agriculture NIFA
- PI: Girish Chowdhary
- GOAL: The only “Farm of the Future” funded nationwide is a testbed for synergistic, sustainable farm management practices using a wide range of digital technologies such as autonomous robots and remote sensing powered by artificial intelligence
- MORE INFO: go.illinois.edu/i-farm/



CONTACT US



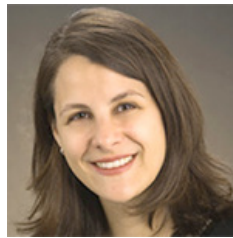
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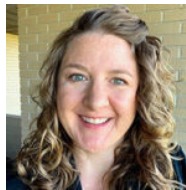
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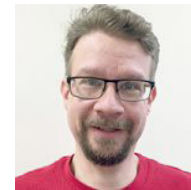
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