

# Leading Innovative Solutions in Climate & Energy

One of the most pressing challenges of the 21<sup>st</sup> century is confronting the climate crisis and producing scalable, sustainable energy solutions. Developing balanced approaches to meet these goals requires cutting-edge science and technology and deep collaboration with policy, economics, and law. UChicago has embarked on an ambitious plan to lead the world in addressing these significant challenges.

UChicago has launched the Institute for Climate and Sustainable Growth, an ambitious effort combining frontier research in economics and climate policy, key energy and climate technologies, and a pioneering approach to education. This first-of-its-kind institute will produce new and deeper understandings of the climate challenge as well as practical, effective solutions.

## Research Spotlight

Prof. David Keith is a pioneer in climate systems engineering, bringing together research at the interface of climate science, technology, and public policy for more than three decades.



## Stopping, Then Reversing Climate Change

Experts say that even the rapid elimination of carbon emissions cannot address the climate risks posed by pollutants already in the atmosphere. Blunting the effects of rapid climate change and potentially reversing them will require human technological intervention.

UChicago's Climate Systems Engineering initiative (CSEi), one of the initiatives of the Institute for Climate and Sustainable Growth, focuses on both the technological and social aspects of this issue, advancing understanding of the potential benefits and risks of technologies such as solar geoengineering. With interdisciplinary teams of experts, the University is at the forefront of the challenge to manage and mitigate the impact of climate change.

## CLIMATE & ENERGY ADVANTAGE

- Poised for global impact with centers or campuses in China, India, France, the UK, and Egypt
- Partnerships with Argonne National Laboratory and the Marine Biological Laboratory that expand access to experts and resources in the fields of energy production and Earth sciences
- The first-of-its-kind Institute for Climate and Sustainable Growth, with initiatives in energy policy, climate systems engineering, and energy technologies
- Two affiliated Department of Energy-sponsored Energy Frontier Research Centers: UChicago's Catalyst Design for Decarbonization Center and Argonne's Advanced Materials for Energy-Water Systems Center
- Resurgence Cleantech Accelerator, powered by Polsky Center for Entrepreneurship and Innovation, jumpstarts ventures across the clean tech spectrum

## Shaping Social and Economic Impact

While technology is important to addressing climate issues, we must also understand the social and economic factors that surround these challenges and conduct research that informs the policies that can address them.

Home to world leaders in economics, business, law, and policy, the University has a long tradition of defining new fields in these areas to solve key societal challenges. The Institute is addressing these areas through the Energy Policy Institute at the University of Chicago (EPIC), which is working with the Urban Lab's Energy and Environmental Lab to support innovative research that influences local, national, and international agendas on climate and energy. This work is key to enabling the adoption of scientific and technological solutions to climate change and communicating to the world the value of environmental health.



### Partnership Spotlight

The University's partnership with Argonne fosters collaboration on some of the biggest challenges in climate and energy, including plastic pollution through the BOTTLE consortium and energy storage through the Argonne Collaborative Center for Energy Storage Science (ACCESS).

## New Tech for Energy Conversion and Storage

Affordable energy storage is a central piece of the clean energy transition—accelerating the switch to electric vehicles and balancing intermittent renewable electricity sources on the grid. Recognizing this, the third of the Institute's initiatives, the Energy Technologies Initiative (ETI), is driving major advancements in energy storage technologies through a combination of research and partnerships.

Researchers at the Pritzker School of Molecular Engineering (PME) and partners at Argonne National Laboratory collectively make up the nation's largest cluster of energy technology experts. Argonne is now home to the Energy Storage Research Alliance (ESRA), one of only two Department of Energy battery innovation hubs.

The most effective solutions to improved energy sourcing and storage take a collective, systems-level approach. As a major hub for energy storage and conversion research and development, we play a leading role in developing sustainable solutions to one of today's biggest environmental challenges.

## CLIMATE & ENERGY AT-A-GLANCE

# 100+

Faculty

# 20+

Degree Programs in  
Climate & Energy-  
related topics

# 2

Affiliated Department  
of Energy Frontier  
Research Centers

# 200+

Courses on Climate &  
Energy-related topics

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## CONTACT US

[sciencescale@uchicago.edu](mailto:sciencescale@uchicago.edu) • [science.uchicago.edu](http://science.uchicago.edu)