



THE OHIO STATE UNIVERSITY

Supporting Corporate Climate Action

Responding to Climate Change

The business community is taking the challenge of climate change seriously. Many companies have ambitiously pledged to cut emissions in line with the Science Based Targets Initiative, committing to pursue efforts that would limit global warming to 1.5° C. Others are evaluating and mitigating climate risks as part of ever-evolving Environment, Social, and Governance (ESG) strategies.

Climate action makes good business sense.

- Institutional investors are seeking corporate disclosures on climate risks and opportunities.
- The Securities and Exchange Commission has proposed rules on climate-related disclosures.
- Data on climate risks to employees, physical assets, and supply chains helps leadership assess vulnerabilities and improve resilience.
- Innovating climate-smart products and services can create new market opportunities.
- Corporate action on climate change can attract and retain talent while deepening customer loyalty.

Over five years, Ohio State research teams have been awarded more than \$120 million for climate change-related research from the National Science Foundation, NASA, U.S. Department of Energy, U.S. Department of Agriculture, and industry sponsors.

Many researchers and staff at The Ohio State University have the expertise and tools to help companies make progress toward climate change goals, reporting frameworks, and planning for the transition to a low-carbon future.

Featured Researchers

Steven Quiring
Climatologist



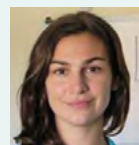
Applies data mining and analytics to model the impact of climate and weather impacts on physical assets as well as risks to products and services; generates future scenarios to help companies with planning.

Abdollah Shafieezadeh
Infrastructure Engineer



Applies probabilistic risk analysis to critical infrastructure to assess hazard resilience under climate change and aging effects, and develops robust adaptation strategies.

Kerry Ard
Sociologist



Employs sociological concepts to understand relationships between social inequality and the environment with an emphasis on how environmental determinants such as pollution affect health outcomes in vulnerable populations.



Managing Climate Risks and Planning for the Future

Nearly 150 Ohio State researchers work across multiple dimensions of climate change including climate and atmospheric science, climate data analytics, infrastructure resilience to climate-related hazards, carbon sequestration, technical innovations like battery storage, and socioeconomic issues like climate justice.

By collaborating with companies in the energy, building materials, manufacturing, and other sectors, Ohio State has provided specialized capacity necessary to define and implement climate change strategies that many businesses lack in-house.

- **Assessing climate risks:** Downscaling climate change impacts through predictive models can help companies assess localized risks from extreme weather and natural hazards. These models can identify climate-related risks posed to physical assets and the reliability of energy supplies, contributing to a broader understanding of a company's adaptive capacity. Applications include identifying operational vulnerabilities, adaptation planning, and disclosure reporting such as the Carbon Disclosure Project (CDP) and Task Force on Climate-Related Financial Disclosures (TCFD) frameworks.
- **Measuring carbon footprints:** Ohio State researchers employ life cycle analysis, carbon monitoring, and other tools to help companies measure carbon emissions from production, processing, and retailing. Specialized marketing and economic research capabilities also provide insights into consumer behavior related to the adoption of

climate-smart products. This research can augment efforts by companies to inventory Scope 1, 2 and 3 emissions and develop mitigation and offset strategies.

- **Environmental monitoring and planning:** Atmospheric scientists at Ohio State's Byrd Polar and Climate Research Center and the State Climate Office of Ohio collect weather-related data that can establish normal conditions, validate models, and identify emerging trends such as the frequency of extreme precipitation events. The data can help long-term climate resilience planning such as future site selection, transportation routes, and employee safety. Ohio State expertise can also help businesses seeking to use publicly available tools to prioritize action based on localized climate change.
- **Advancing climate and environmental justice:** Climate change impacts are disproportionately borne by society's most vulnerable groups. These groups often do not share equally in the benefits of efforts to improve climate resilience. Ohio State faculty are committed to building awareness around these issues and assisting corporate partners to develop and implement approaches that reflect principles of diversity, equity, and inclusion.

American Electric Power

Ohio State collaborated with American Electric Power to develop a Storm Outage Prediction Model that utilizes Global Forecast System prediction data and, coupled with the utility's weather alerts, enables more informed decisions around pre-storm preparations. With the predicted number of affected customers and the predicted equipment damage, the utility can be more confident in the number of resources and equipment necessary for restoration, leading to a better overall customer experience.

Owens Corning

Owens Corning is using 5, 10 and 15-year climate scenarios developed by Ohio State researchers to report on climate-related risk as part of its TCFD disclosures. The research team is also analyzing the economic implications of these scenarios for one of the company's main business lines, highlighting potential risks as well as opportunities.

For more information, please contact:

Josh Knights

Sustainability Institute at Ohio State
knights.16@osu.edu • 614-214-6260