

Accelerating Climate Progress with AI: From Science to Action Workshop

January 13-14, 2026



Artificial Intelligence (AI) is rapidly advancing frontiers in climate science, providing new insights into our understanding of the climate system and helping to transform climate science into actionable information. This workshop will explore innovative ways AI can enhance and accelerate climate action with a focus on decision-making and adaptation measures to foster resilience to climate change impacts. The workshop provides a forum for interdisciplinary, cross-sectoral dialogue to facilitate cross-sector engagement, identify critical applications where AI can inform climate action at speed and scale, and consider how AI's broader societal impacts affect approaches to addressing climate change.¹ Watch the livestream [here](#) and submit questions and comments [here](#).

TUESDAY, JANUARY 13, 2026

8:00 AM² **Breakfast**

9:00 AM **Welcome and Setting the Stage: AI in Climate Research and Action**
Stephan Sain, Jupiter Intelligence, *Workshop Planning Committee Chair*

9:15 AM **Keynote Presentation – Artificial Intelligence and climate change: opportunities, challenges, and dangers**
David Rolnick, McGill University and Mila

As AI has become a ubiquitous buzzword across society, there is increasing demand for AI tools in climate action - from accelerating global climate models to assessing impacts on agriculture. In this talk, we will consider how AI can be a meaningful tool in climate science, adaptation, and mitigation, and what kinds of AI innovations will help achieve these impacts. We will also discuss ways in which AI is making climate change worse, and how to align the development of AI more broadly with climate action.

9:45 AM **Keynote Presentation**
Angel Hsu, University of North Carolina at Chapel Hill

¹ This workshop is an activity of the [Roundtable on Artificial Intelligence and Climate Change](#). The Roundtable seeks to foster ongoing discussions, shared learning, and nimble coordination around emerging issues related to AI and climate change, including: how AI can combat climate change; the environmental impact of AI itself; and strategies for mitigating the impacts of AI energy consumption and climate effects. View past and upcoming events hosted by the Roundtable [here](#).

² All Times in PST

10:15 AM BREAK

Using AI to Advance Climate Science to Meet User Needs

This session brings together researchers, decision makers, and other users of climate information to discuss where AI can help to address knowledge gaps/information needs to facilitate improved and timely climate action. Speakers will consider the opportunities and challenges across the spectrum from research using AI in climate science, to tools using AI to inform decision making to meeting specific needs of users through a series of panel discussions on select societal impacts of climate change: wildland fires, agriculture and land management, urban planning, and water resource management.

10:25 AM Session Introduction and Goals

Stephan Sain, Jupiter Intelligence, *Workshop Planning Committee Chair*

10:30 AM Living with Wildland Fire: AI to Inform Adaptation

AI-enhanced tools can be used to both address fires when they occur and identify land management solutions for fire prevention. However, challenges exist related to accessing data for to be used in climate models, downscaling outputs for local actions, and standardizing approaches to using AI-enhanced tools for forecasting fire weather. Through moderated discussion, panelists will highlight opportunities to integrate AI into approaches to wildland fire detection and prevention, and highlight solutions to the challenges that exist in this space. A Q&A session with the audience will follow.

Moderator: Hugo Lee, National Aeronautics and Space Administration

Speakers:

- **Andre Perkins**, Allen Institute for AI (AI2)
- **İlkay Altıntaş**, WIFIRE
- **James Randerson**, University of California – Irvine
- **Alan Talhelm**, CAL FIRE

11:45 AM AI for Water Resource Management

AI can be used to advance climate action related to hydrology, water quality, water resources, and water resource management more broadly. However, challenges exist related to how AI-enhanced tools can help clarify uncertainty. Through moderated discussion, panelists will highlight activities that integrate AI with hydrologic and climate modeling and the potential use of AI for management decision-making. A Q&A session with the audience will follow.

Moderator: Adrienne Wootten, University of Oklahoma, *Workshop Planning Committee Member*

Speakers:

- **Debaditya Chakraborty**, University of Texas at San Antonio
- **Kathleen Boomer**, Foundation for Food & Agricultural Research

12:30 PM LUNCH

1:30 PM Use of AI in Agriculture and Land Management

AI-enhanced agriculture and land management tools have changed the way farmers choose agricultural practices – including what crops to plant, when to plant them, and what seasonal weather to expect during planting and harvesting seasons – and address food insecurity. Through moderated discussion, panelists will discuss data and design challenges related to getting AI tools from the R&D stage to the application space, highlighting the current state of AI-enhanced tools being used for agriculture and land management and predicting what is to come with the proper investment. A Q&A session with the audience will follow.

Moderator: Kaiyu Guan, University of Illinois Urbana-Champaign, *Workshop Planning Committee Member*

Speakers:

- **Catherine Nakalembe**, University of Maryland
- **David Lobell**, Stanford University
- **Emma Bassein**, John Deere

2:40 PM AI in Urban Planning for Climate Change Impacts/Adaptation

Through moderated discussion, speakers will highlight the challenges and opportunities for AI-enhanced tools to support the translation of data related to flooding and urban heat islands into understanding of risk for various sectors, including city-planning, reinsurance, and the general public. A Q&A session with the audience will follow.

Moderator: Michael Méndez, University of California – Irvine

Speakers:

- **Adam Nayak**, Columbia University
- **Chris Belasco**, City of Pittsburgh Pennsylvania
- **Mariela Alfonzo**, State of Place

3:55 PM BREAK

4:15 PM **AI: Solution or Obstacle for Climate Action?**

Francesca Dominici, Harvard University

Artificial Intelligence is revolutionizing research, education, and business—unlocking unprecedented opportunities across climate, health, and beyond. In her lab, Dr. Francesca Dominici and her team are developing the first foundation model for healthy climate adaptation, pre-trained on the complete U.S. Medicare dataset and enriched with nationwide Census, weather, and pollution data. This model enables powerful “what-if” scenario forecasting, using synthetic ground-truth data to validate counterfactual predictions and guide impactful climate actions. Yet, this AI-driven progress comes at a cost: energy-hungry data centers power these advances, raising concerns about their environmental footprint and the paradox of AI’s growing electricity demand in a world striving to reduce fossil fuel reliance. In this technical presentation, Dr. Dominici will share insights from our work and explore AI’s uncertain, double-edged role in the fight against climate change. A Q&A session with the audience will follow.

4:40 PM **Day 1 Wrap-Up**

Stephan Sain, Jupiter Intelligence, *Workshop Planning Committee Chair*

5:00 PM **Adjourn**

5:00 PM **Reception**

WEDNESDAY, JANUARY 14, 2026

8:00 AM **Breakfast**

9:00 AM **Welcome & Reflections from Day 1**

Stephan Sain, Jupiter Intelligence, *Workshop Planning Committee Chair*

9:30 AM **Keynote Presentation – The Trust Deficit: How AI Can Bridge or Widen the Divide in Climate Progress**

Kieran White, KWMEDIA

Recent studies reveal a significant trust deficit between the public and perceptions of scientific expertise, government institutions, and emerging technologies like AI — a gap widened by politicization and post-COVID skepticism toward evidence-based claims. This keynote examines the legitimization pipeline — from raw data to media narrative to policy action — and how AI tools are compressing it from days to seconds, amplifying both insight and risk in climate decision-making. It explores practitioner and community needs for reliable, verifiable information and advocates for rigorous transparency, auditability, and human oversight to ensure AI serves as a controllable instrument that rebuilds stakeholder confidence rather than deepening existing divides. Without deliberate standards for provenance, communication, and accountability, AI’s integration into climate science risks undermining the very trust required for effective action.

10:00 AM **Keynote Presentation – Earth Observation for Climate Action**
Dan Hammer, Renaissance Philanthropy and LGND

Climate decisions are limited not by data availability, but by the difficulty of turning vast Earth data into usable information. Drawing on Clay's open, nonprofit AI foundation model for Earth observation, this talk will examine how transparent, open AI models — paired with clear standards, benchmarks, and policy recommendations — can enable trusted use of AI in climate decision-making.

10:30 AM **BREAK**

10:50 AM **Addressing Common Opportunities & Challenges to Accelerate Action**

This session will consider common issues in the utilization of AI in climate research and the data that is utilized and generated; and near-term opportunities to address those issues to advance opportunities for greater action across sectors/topical areas. Panelists will discuss near-term opportunities to improve the incorporation of AI into climate sciences that inform decision making and challenges that need to be overcome to accelerate climate action. A Q&A session with the audience will follow.

Moderator: John Holmes, National Academies of Science, Engineering, and Medicine

Speakers:

- **Karen McKinnon**, University of California – Los Angeles
- **Monica Morrison**, National Center for Atmospheric Research
- **Yuhan Rao**, North Carolina State University

12:00 PM **LUNCH**

1:00 PM **Enhancing Cross-Sectoral Partnerships**

This session will bring stakeholders engaged in AI development, climate sciences, climate action, decision making, and related areas to discuss how cross-sectoral partnerships may be strengthened and expanded to better meet societal needs. A Q&A session with the audience will follow.

Moderator: Amy Luers, Microsoft Corporation, *Workshop Planning Committee Member*

Speakers:

- **Tom Hamill**, The Weather Company
- **F. Paul Bertetti**, Edwards Aquifer Authority
- **Christopher Wirz**, University of Illinois Urbana-Champaign

2:10 PM

Accelerating Climate Action with AI - A Path Forward

This session aims to synthesize and reflect on the workshop while also bringing in new perspectives to consider how to move things forward. Panelists will highlight what they heard are the greatest near-term opportunities to advance AI for climate action. A Q&A session with the audience will follow.

Moderator: Katie Dagon, National Center for Atmospheric Research, *Workshop Planning Committee Member*

Speakers:

- **Alexis Hoffman**, Jupiter Intelligence
- **Elizabeth A. Barnes**, Boston University
- **Marc Alessi**, Union of Concerned Scientists

3:10 PM

Meeting Reflections and Take Aways

3:30 PM

Adjourn