

Ashish Sharma

Climate, Infrastructure & Urban Innovation Executive

Research Enterprise Leader | Global Center Director | Scientist | Public-Impact Innovator

sharmaa@illinois.edu | +1 312 668 9091 | [LinkedIn](#) | [DPI Climate Hub](#) | [CLEETS](#) | [AerisIQ](#)

Executive Profile

Research and innovation executive who builds interdisciplinary programs at the intersection of atmospheric science, artificial intelligence, infrastructure, transportation, energy, and public decision-making. Leads the NSF–UKRI Clean Energy and Equitable Transportation Solutions (CLEETS) Global Center and the climate and urban sustainability portfolio at the Discovery Partners Institute, University of Illinois Urbana-Champaign. Track record of translating research into operational tools, major public-private partnerships, policy guidance, and community-scale solutions. Secured more than **\$15M as principal investigator** and more than **\$41M as co-principal investigator or senior personnel**; authored **67 publications**; and developed **seven decision-support tools**.

Leadership Value Proposition

Build research enterprises

Directs complex, multi-institution initiatives and converts ambitious ideas into funded programs, partnerships, and delivery platforms.

Translate science into action

Connects high-resolution modeling, AI, Earth observations, and community knowledge to decisions about infrastructure and risk.

Convene across sectors

Aligns universities, laboratories, governments, industry, communities, and international partners around shared outcomes.

Selected Leadership Impact

- **Global center leadership:** Directs the **\$11.2M NSF–UKRI CLEETS Global Center**, a U.S.–UK collaboration advancing clean energy and equitable transportation research, innovation, education, and workforce development.
- **Research portfolio growth:** Built and leads a cross-disciplinary climate and urban sustainability portfolio spanning energy, transportation, extreme heat, flooding, air quality, and resilient infrastructure.
- **Large-scale partnerships:** Serves as co-PI/senior personnel on the **\$25M DOE CROCUS Urban Integrated Field Laboratory** and has led or helped secure programs funded by NSF, DOE, NASA, NOAA, EPA, IBM, foundations, and energy-sector partners.
- **Technology translation:** Developed seven operational and public-facing tools, including **AerisIQ**, an AI-enabled weather-to-impact early-warning platform for Illinois, and tools for infrastructure siting, urban risk, flood reporting, and nature-based solutions.
- **Policy and civic impact:** Co-authored the first **Climate Action Plan for the Chicago Region**, contributed to Illinois and Great Lakes assessments, testified before a Chicago City Council committee, and briefed federal and state decision-makers.
- **Public leadership:** Appointed by the Governor of Illinois to the **Illinois Environmental Justice Commission** and **Illinois State Museum Board**; recognized in **Crain’s Chicago Business 40 Under 40**.

Executive and Academic Appointments

Climate and Urban Sustainability Lead

Aug 2022–present

Discovery Partners Institute, The Grainger College of Engineering, University of Illinois Urbana-Champaign

Leads an applied research and innovation portfolio connecting climate science, urban systems, infrastructure, public agencies, communities, and technology development.

Director, NSF–UKRI CLEETS Global Center

Oct 2023–present

Clean Energy and Equitable Transportation Solutions

Provides strategic and scientific leadership for a transatlantic center focused on research translation, clean energy, transportation systems, equity, education, and workforce development.

Atmospheric Scientist, Joint Appointment

Feb 2022–present

Environmental Science Division, Argonne National Laboratory

Advances collaborative research in urban climate, high-impact weather, environmental observation, modeling, and actionable science.

Visiting Faculty

Jul 2026–present

Indian Institute of Technology Bombay, India

Supports international academic and research collaboration and student exchanges.

Graduate Faculty

Sep 2019–present

Department of Climate, Meteorology & Atmospheric Sciences, University of Illinois Urbana-Champaign

Mentors graduate researchers and contributes expertise in urban and regional climate, weather risk, and translational research.

Center Affiliate

Nov 2018–present

National Center for Supercomputing Applications, University of Illinois Urbana-Champaign

Collaborates on advanced computing, data-intensive research, AI, and urban decision-support applications.

Earlier appointments: Illinois Research Climatologist, Illinois State Water Survey (2019–22); Research Assistant Professor, University of Notre Dame (2016–19); Postdoctoral Researcher, University of Notre Dame (2012–16); Visiting Researcher, NSF National Center for Atmospheric Research (2014, 2016).

Strategic Program and Portfolio Leadership

Clean Energy and Equitable Transportation Solutions (CLEETS)

- Leads an **\$11.2M** NSF-UKRI Global Center linking U.S. and UK institutions around clean energy, transportation, environmental intelligence, and workforce development.
- Sets interdisciplinary direction across science, engineering, data/AI, social science, policy, education, and applied innovation.
- Builds international, academic, governmental, community, and industry relationships to accelerate research translation and societal impact.

Climate and Urban Sustainability Portfolio

- Develops programs that connect urban climate science with infrastructure planning, community needs, public health, environmental justice, and economic resilience.
- Integrates satellite observations, field measurements, high-resolution simulation, artificial intelligence, and participatory data into actionable products.
- Advances projects on heat, flooding, wildfire smoke and air quality, green infrastructure, ecological corridors, tree canopies, and weather-related operational risk.

Decision Intelligence and Technology Translation

- **AerisIQ:** AI-powered weather-to-impact intelligence platform supporting situational awareness and response planning in Illinois.
- **e-JUST:** urban scalable toolkit combining Earth observations, climate outputs, and social/environmental data to assess neighborhood-scale heat and air-quality risk.
- **Infrastructure and flood tools:** Fuel Station Flood Risk Mapper, Flood Tracker, Quad Cities nature-based solutions tool, HiTAB high-resolution tree/building maps, and Ecological Corridor Network.

Selected Funded Initiatives and Partnerships

- **NSF-UKRI Global Centers: CLEETS** — PI and Center Director; **\$5.0M U.S. share; \$11.2M total;** 2023–28.
- **DOE CROCUS Urban Integrated Field Laboratory** — Co-PI / Senior Personnel; **\$25M;** 2022–27.
- **NSF International Partnerships for Climate-Ready, Sustainable, and Clean Urban Transportation** — PI; **\$1.5M;** 2023–25.
- **NSF Interactions of Urban Systems with Storms and Heatwaves** — PI; **\$852,918;** 2022–26.
- **Walder Foundation, From Science to Nature-Based Solutions in the Chicago Region** — Co-PI; **\$583,085;** 2021–23.
- **ComEd / Exelon Energy partnerships** — PI or Co-PI; climate training and resilient canopy initiatives totaling **\$483,875;** 2023–25.
- **NASA e-JUST: Environmental Justice using Urban Scalable Toolkit** — PI; **\$250,000;** 2022–24.
- Additional collaborations with the University of Chicago, National Wildlife Federation, Metropolitan Planning Council, IBM Research, EPA Great Lakes Restoration Initiative, NOAA, DOE, NASA, and DoD.

Governance, Advisory and Public Service

- **Appointed Member**, Illinois Environmental Justice Commission, 2024–present.
- **Appointed Member**, Illinois State Museum Board, 2024–present.
- **Board Member**, Board of the Urban Environment, American Meteorological Society, 2026–present.
- **Member**, Illinois 3D Mesonet Internal Steering Committee, 2026–present.
- **Executive Committee Member**, Illinois Center for Urban Resilience and Environmental Sustainability, 2019–present.
- **Panel Member**, U.S. EPA Science Advisory Board EJScreen Review Panel, 2023–24.
- **Steering Committee Member**, Chicago Metropolitan Climate Action Plan, 2024–25.
- **Technical Advisory Committee Member**, Trust for Public Land Natural Solutions Tool, 2022–23.
- **Editor**, *Climate and Sustainable Engineering, Engineering* (Chinese Academy of Engineering), 2021–present; **Associate Editor**, *Frontiers in Environmental Science*, 2021–present.

Policy, Public and External Engagement

- Provided expert testimony to the Chicago City Council Committee on Environmental Protection and Energy on urban heat impacts and solutions (2021).
- Briefed members of the U.S. Senate and House of Representatives on findings from the Great Lakes climate assessment (2019).
- Briefed the NOAA Administrator on the Chicago Region Climate Action Plan (2022).
- Co-authored the *2021 Climate Action Plan for the Chicago Region*, the *Illinois Climate Assessment*, and Great Lakes climate assessments (2019 and 2025 update).
- Regular invited speaker and panelist for government, universities, laboratories, industry forums, professional societies, the UN World Urban Forum, and international institutions.

Selected Recognition

- **Crain's Chicago Business 40 Under 40**, 2023.
- **C2ST Inaugural Societal Impact Award**, CROCUS team, 2023.
- **American Planning Association Strategic Plan Award**, 2022.
- **American Planning Association State/Regional Award of Merit in Sustainability**, 2022.
- **Climate Leadership Award**, Innovative Partnership Category, 2021.
- **Fellow**, Royal Meteorological Society, 2016–present.

Selected Thought Leadership and Scholarship

- Sharma, A., Kumar, R., Klinenberg, E., & Chow, W. T. L. (2026). Five shifts to rethink urban heat assessment and action. *npj Urban Sustainability*.
- Sharma, A. (2025). Urban climate science needs to step out. *Nature Cities*.
- Sharma, A., Kumar, K., et al. (2025). Advancing urban water resilience through civic-academic global partnerships. *Bulletin of the American Meteorological Society*.
- Sharma, A., Wuebbles, D. J., & Kotamarthi, R. (2021). The need for urban-resolving climate modeling across scales. *AGU Advances*.
- Metropolitan Mayors Caucus (2021). *Climate Action Plan for the Chicago Region* (co-author).
- Wuebbles, D., et al. (2021). *An Assessment of the Impacts of Climate Change in Illinois* (contributor).
- Wuebbles, D., et al. (2019; updated 2025). *An Assessment of the Impacts of Climate Change on the Great Lakes* (co-author).

Education

2012 **Ph.D., Aerospace Engineering**, Arizona State University
2009 **M.S., Aerospace Engineering**, Arizona State University
2007 **B.Tech., Electronics and Communication Engineering**, Jaypee University of Information Technology

Complete academic publication, funding, teaching, mentoring, and service records are available in the comprehensive curriculum vitae.