



Shaleen Jain Ph.D.

Associate Professor of Civil and Environmental Engineering, Department of Civil and Environmental Engineering, University of Maine

Cooperating Associate Professor, Climate Change Institute and School of Policy and International Affairs

Researcher, Research Council Member and Stewardship Council Member, Senator George J. Mitchell Center and the Sustainability Solution Initiative

Profile:

Shaleen Jain is an environmental engineer, hydrologist, and a faculty member at the University of Maine. His research examines the interplay of human and natural forces that shape water availability, and distribution on watershed to regional scales. His work emphasizes on understanding the nature and causes of regional hydrologic change, and using climate information for adaptive environmental management.

Jain's research with the Sustainability Solutions Initiative focuses on adaptation strategies for Maine's coastal communities, developing decision tools for lake-watershed systems, and conducting analysis of water use policies in Maine. He is expanding this research to understand the nature of climate-hydrologic systems linkages in the northeastern United States, western North American, the Korean peninsula, the African Sahel, and the North Atlantic hurricane region.

In collaboration with schools across Maine and the University of Maine's New Media Internet Technologies Laboratory, Jain is developing immersive learning approaches centered on teaching watershed sustainability in middle school classrooms. The objective of this project is to provide substantial learning tools that quantify impacts of humans and ecosystems, and tests and assesses the adequacy of policy in the face of changing and uncertain forecasts.

Jain's research has been funded by the National Science Foundation, the National Oceanic and Atmospheric Administration (NOAA), Maine Water Resources Research Institute (WRRI), Maine SeaGrant, Maine EPSCoR, U.S. Geological Survey, Maine Department of Environmental Protection, and the Senator George J. Mitchell Center and the Sustainability Solutions Initiative.

He has published in several peer reviewed journals including *Climate Change*, *Environmental Monitoring and Assessment*, *Geophysical Research Letters*, *International Journal of Climatology*, *Journal of Environmental Management*, *Journal of Climate*, and *Water Resource Research*. Jain is currently on the editorial board of the *International Water Journal*.

Degrees:

Utah State University, Ph.D. (Civil & Environmental Engineering)
Utah State University, M.S. (Civil & Environmental Engineering)
Indian Institute of Technology, Bombay, BTech (Civil Engineering)

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Research Interests:

Hydroclimatology
Environmental Flows
Climate Variability and Change
Hydrosystems Modeling
Adaptive Management
Sustainability Science
Programmable multi-media
for K-12 STEM education



Media Expertise:

Flood Management
Climate Change
Economic Development
Geophysics
Hydrology
Knowledge to Action
Water Resource Management

SSI Projects:

Helping Communities
Weather Storms
Safeguarding Vulnerable
Watersheds
Effects of Climate Change on
Organisms (ECCO)

Courses:

CIE 100: Introduction to Civil Engineering
CIE 455: Hydrology
CIE 456: Groundwater Hydraulics and Hydrology
CIE 552: Physical Hydrology
CIE 553: Water Resources Sustainability
CIE 598: Managing our Water Resources

Selected Publications:

Jong-Suk Kim, Shaleen Jain, and Sun-Kwon Yoon. "Warm season streamflow variability in the Korean Han River Basin: links with atmospheric teleconnections." *International Journal of Climatology* Volume 3, Issue 4 (2012): 635-640.

John Peckenham, David Hart, Sean Smith, Shaleen Jain, and Whitney King. "The Path to Sustainable Water Resources Solutions." *Maine Policy Review* Volume 21, Issue 1 (2012): 46 -57.

Jong-Suk Kim, Shaleen Jain, and Young-II Moon. "Atmospheric teleconnection-based conditional streamflow distributions for the Han River and its sub-watershed in Korea." *International Journal of Climatology* Volume 32, Issue 10 (2011): 1466-1474.

Sen Gupta, A., Shaleen Jain, and Jong-Suk Kim. "Past climate, future perspective: An exploratory analysis using climate proxies and drought risk assessment to inform water resources management and policy in Maine, USA." *Journal of Environmental Management* Issue 92 (2011): 941-947.

Jong-Suk Kim, Shaleen Jain, and Young-II Moon. "Atmospheric teleconnection-based conditional streamflow distributions for the Han River and its sub-watersheds in Korea." *International Journal of Climatology* Volume 32, Issue 10 (2011): 1466-1474.

Jong-Suk Kim, Shaleen Jain, and Stephen A. Norton. "Streamflow variability and hydro-climatic change at the Bear Brook Watershed in Maine (BBWM), USA." *Environmental Monitoring and Assessment*, Volume 171, Number 1-4 (2010): 47-58.

Jong-Suk Kim, and Shaleen Jain. "High-resolution streamflow trend analysis applicable to annual decision calendars: A western United States case study." *Climatic Change*, Volume 102, Number 3-4 (2010): 699-707.

Shaleen Jain, Martin P. Hoerling, and Jon Eischeid. "Decreasing reliability and increasing synchronicity of western North American streamflow." *Journal of Climate*, Volume 18, Issue 5, (2005): 613-618.

Shaleen Jain and Upman Lall. "Floods in a Changing Climate: Does the Past Represent the Future?" *Water Resources Research*, Volume 37, Issue 12 (2001): 3193-3205.

Shaleen Jain and Upman Lall. "Magnitude and Timing of Annual Maximum Floods: Trends and Large-Scale Climatic Associations for the Blacksmith Fork River, Utah." *Water Resources Research*, Volume 36, Issue 12 (2000): 3641-3651.

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