

EDUCATION

- **PhD, Civil and Environmental Engineering: Hydrology and Water Resources (major) and Atmospheric Sciences (minor)**, University of California, Los Angeles, 2010 to 2014, GPA - 3.97
- **M.S., Environmental Engineering**, California State University of Los Angeles, 2008 to 2010, GPA – 4.00
- **B.S., Civil Engineering**, Shahid Bahonar University of Kerman (Iran), Feb.2002 to Feb.2006

PEER- REVIEWED PUBLICATIONS

Maina, F. Z., Siirila-Woodburn, E. R., and **Vahmani, P.** (2020), Sensitivity of meteorological-forcing resolution on hydrologic variables, *Hydrol. Earth Syst. Sci.*, 24, 3451–3474, <https://doi.org/10.5194/hess-24-3451-2020>.

Vahmani, P., A. D., Jones, C. M., Patricola, (2019), Interacting implications of climate change, population dynamics, and urban heat mitigation for future exposure to heat extremes, *Environ. Res. Lett.* <https://doi.org/10.1088/1748-9326/ab28b0>

Ullrich, P. A., Xu, Z., Rhoades, A. M., Dettinger, M. D., Mount, J. F., Jones, A. D., & **Vahmani, P.** (2018). California's drought of the future: A midcentury recreation of the exceptional conditions of 2012–2017. *Earth's Future*, doi:10.1029/2018ef001007.

Vahmani, P., A. D., Jones (2017), Water conservation benefits of urban heat mitigation, *Nature Communications*, doi:10.1038/s41467-017-01346-1.

Epstein S. A., S.-M. Lee, A. S. Katzenstein, M. Carreras-Sospedra, X. Zhang, S. C. Farina, P. **Vahmani, P.** M. Fine, and G. Ban-Weiss (2017), Air-quality implications of widespread adoption of cool roofs on ozone and particulate matter in southern California, *PNAS*, doi: 10.1073/pnas.1703560114.

Vahmani, P., F., Sun, A., Hall, and G. Ban-Weiss (2016), Investigating the climate impacts of urbanization and the potential for cool roofs to counter future climate change in Los Angeles, *Environ. Res. Lett.*, 11 124027, doi: 10.1088/1748-9326/11/12/124027.

Vahmani, P., and G. Ban-Weiss (2016), Climatic consequences of adopting drought-tolerant vegetation over Los Angeles as a response to California drought, *Geophys. Res. Lett.*, 43, 8240–8249, doi:10.1002/2016GL069658.

Vahmani, P., and G. Ban-Weiss (2016), Impact of Remotely Sensed Albedo and Vegetation Fraction on Simulation of Urban Climate in WRF-UCM: A Case Study of the Urban Heat Island in Los Angeles. *J. Geophys. Res. Atmos.*, 120, doi: 10.1002/2015JD023718.

Vahmani, P., and T. S., Hogue (2015), Urban irrigation effects on WRF-UCM summertime forecast skill over the Los Angeles metropolitan area, *J. Geophys. Res. Atmos.*, 120, doi:10.1002/2015JD023239.

Vahmani, P. and T. S., Hogue (2014), Incorporating an Urban Irrigation Module into the Noah Land Surface Model Coupled with an Urban Canopy Model, *J. Hydrometeor.*, 15, 1440–1456, doi:10.1175/JHM-D-13-0121.1.

Vahmani, P. and T. S., Hogue (2014), High-resolution land surface modeling utilizing remote sensing parameters and the Noah UCM: a case study in the Los Angeles Basin, *Hydrol. Earth Syst. Sci.*, 18, 1–16, doi:10.5194/hess-18-4791-2014.

PROFESSIONAL EXPERIENCE

- Since August 2019, Lawrence Berkeley National Lab
Research Scientist

Conducting research on urban hydro-climate modeling, urban flooding, groundwater recharge, urban resiliency and climate adaptation, extreme heat and energy demand in cities, and coupled atmospheric and hydrologic processes in urban areas.

- March 2016 – August 2019, Lawrence Berkeley National Lab
Postdoctoral Fellow (co-PIs: Dr. Andrew Jones and Dr. William Collins)
Conducting research on urban climate adaptation, extreme heat risk in cities, and land-atmosphere interactions in urban areas.
- September 2014 – March 2016, University of Southern California, Los Angeles
Postdoctoral scholar and research associate (PI: Dr. George Ban-Weiss)
Conducted research on the interaction between climate and human activities and climate adaptation in urban areas.
- September 2010 – August 2014, University of California, Los Angeles
Graduate Student Researcher (PI: Dr. Terri Hogue)
Performed research on urban micro-climate modeling, urban irrigation, and remote sensing of urban land surface.
- May 2009 – June 2010, The Center for Energy & Sustainability, CSULA, Los Angeles, California
Graduate Student Researcher (PI: Dr. Chris Khachikian)
Performed research on soil weathering due to CO₂ exposure and other environmental engineering research projects.

INVITED TALKS

- Vahmani, P., A.D. Jones (2019), “**Evolution of Extreme Heat Risk in Cities: Interacting Implications of Climate Change, Population Dynamics, and Urban Heat Mitigation**”, Invited Abstract at 2019 Fall Meeting, AGU, San Francisco, Calif.
- Vahmani, P. (2018), “**Process-based Urban Hydro-climate Modeling with Applications in Climate Change, Extremes, and Adaptation**”, University of California Irvine, Civil and Environmental Engineering Department, November 2018.

CONFERENCE PRESENTATIONS

Evolution of Extreme Heat Risk in Cities: Interacting Implications of Climate Change, Population Dynamics, and Urban Heat Mitigation, invited talk at the *AGU Fall Meeting*, 2019.

Future of Urban Water Demand in California: Can Heat Mitigation Efforts Offset Climate Change?, *Oral Presentation* at the *10th International Conference on Urban Climate/14th Symp. on the Urban Environment*, 2018.

Implications of cool roofs for future exposure to heat extremes in California, *poster* presented at the *AGU Fall Meeting*, 2018.

Water conservation benefits of urban heat mitigation and anthropogenic warming impacts on water demand, *Oral Presentation* at the *Cities and Climate Change Science Conference*, 2018.

Water conservation benefits of urban heat mitigation: can cooling strategies reduce water consumption in California? *Oral Presentation* at the *AGU Fall Meeting*, 2017.

Interactions between cool roofs and urban irrigation: Do Cooling Strategies Reduce Water Consumption in the San Francisco Bay Area? *poster* presented at the *AGU Fall Meeting*, 2016.

Satellite-Supported Modeling of the Relationships between Urban Heat Island and Land Use/Cover Changes, *poster* presented at the *AGU Fall Meeting*, 2015.

WRF-UCM Modeling of Urban Land-Atmosphere Interactions with a Focus on Landscape Irrigation in the Los Angeles Metropolitan Area, *poster presented at the AGU Fall Meeting, 2014.*

Integrating Remote Sensing Data in Noah-UCM Parameterization and Validation: A Case Study for the Los Angeles Metropolitan Area, *poster presented at the AGU Fall Meeting, 2013.*

Vahmani, P. and T. S., Hogue (2013), Modelling and analysis of the impact of urban irrigation on land surface fluxes in the Los Angeles metropolitan area, *Climate and Land Surface Changes in Hydrology Proceedings of H01, IAHS-IAPSO-IASPEI Assembly, Gothenburg, Sweden, July 2013, IAHS Publ. 359.*

Development of an Anthropogenic Soil Moisture Contribution Module in the NOAA-UCM for the Los Angeles Metropolitan Region, *Oral presentation, at AGU Fall Meeting, 2012.*

Development and Validation of the Noah-Urban Canopy Model for Two Distinct Urban Climates in the Los Angeles Basin, *poster presented at the AGU Fall Meeting, 2011.*

Microtextural analysis of weathering in CO₂ saturated soils, *poster presented at the Spring ACS National Convention, 2010.*

AWARDS AND FELLOWSHIPS

- Early Career Enrichment Program (ECEP) participant, Earth and Environmental Sciences Area, Lawrence Berkeley National Lab, 2020.
- The Berkeley Lab's Top Science Story of 2019: *Cool Roofs Can Help Shield California's Cities Against Heat Waves*: <https://newscenter.lbl.gov/2019/12/16/berkeley-labs-top-10-science-stories-of-2019/>
- Nominated for Laboratory-Directed Research and Development (LDRD) Early Career Award by Earth and Environmental Sciences Area, 2019.
- *IAHS Best Early Career Scientist Paper Award*, the Gothenburg Assembly, 2013.
- *NASA Earth System Science Fellowship (NESSF)*, University of California, Los Angeles, 2012 and 2013.
- *Bridge to the Doctorate Fellowship*, the Center for Energy and Sustainability/California State University, Los Angeles, 2010.
- *Special Recognition in Graduate Studies*, CSULA 2010 Honors Convocation.
- *Outstanding Poster Presentation Award in Engineering*, 2010 CSULA Student Symposium.
- *Graduate Student Fellowship*, the Center for Energy and Sustainability/California State University, Los Angeles, 2009.
- *Graduate Student Scholarship*, Shahid Bahonar Uni. of Kerman (Iran), 2006.
- *First Ranked Graduating Student* in Civil Eng. Class, Shahid Bahonar Uni. of Kerman (Iran), 2006.

REVIEWER FOR

PLOS ONE, Earth's Future, Geophysical Research Letters; Journal of Geophysical Research – Atmospheres; Science of the Total Environment; Remote Sensing; Urban Climate; Urban Forestry & Urban Greening; Journal of Hydrology; Climate; and Sustainability.

PROFESSIONAL SOCIETIES

American Geophysical Union (AGU); American Meteorological Society (AMS); and American Society of Civil Engineers (ASCE)

TEACHING/WORK EXPERIENCE

- Fall and Winter 2015, Civil and Environmental Engineering, University of Southern California,

Guest Lecturer:

Responsibilities: Prepared and delivered guest lectures on topics such as land surface-atmosphere interactions, climate change mitigation, and urban climate.

- Winter 2011, Civil and Environmental Engineering, University of California, Los Angeles,
Teacher Assistant: Introduction to Water Resources Engineering,
Responsibilities: Prepared and taught weekly 1-hour lectures for a class of 75 undergraduates. Held weekly office hours. Helped with the design of assignments and course exams.
- From January 2008 to February 2009, ANM Eng. Inc., Sherman Oaks, California,
Structural Engineer,
Responsibilities: Designed residential buildings. Performed the structural drafting and required inspections.