MARYAM E. KARIMI, PhD, MPA, MS

Director of Research and Associate Professor
School of Public Health, University of Memphis

Current Positions

Director of Research and Associate Professor, School of Public Health, University of Memphis
Assistant Professor, Department of Environmental Health Sciences, School of Public Health, UAB
Associate Director of Public Health and Environmental Sustainability, The Sustainable Smart Cities Research Center (SSCRC), UAB
Assistant Professor, Department of Civil, Construction and Environmental Eng., UAB (Joint Appointment)

Education

2017- 2019 Columbia University, Mailman School of Public Health, Postdoctoral Fellow
2012-2017 The Graduate Center of CUNY- Ph.D. in Earth and Environmental Science
2010-2012 The Graduate Center of CUNY, M.S. in Earth and Environmental Science
2006-2010 The Baruch College of CUNY, MPA in Public Administration and Policy
2002-2006 John Jay College of CUNY, BA in International Criminal Justice

Faculty Appointments

2024- Associate Professor, School of Public Health, University of Memphis
2020- 2024 Faculty- Lung Health Center, UAB
2019- 2024 Assistant Professor, Department of Environmental Health Sciences, UAB School of Public Health, UAB
2019- 2024 Faculty, Department of Civil, Construction and Environmental Eng., UAB
2015- 2019 Visiting Assistant Professor, Rowan University
2011-2016 Adjunct Professor, City University of New York
2014-2016 Affiliated Faculty at CUNY, Geospatial Center of the CREST Institute

Patents

Inventor: An Innovative Real-Time Environmental Exposure and Respiratory Health Assessment, Connecting Environment, Patients and Health Care Providers ID: FWA00005960

Awards and Fellowships

2021 Delta Omega Honor Society, Upsilon Chapter of UAB- recognized for excellence in leadership, scholarship, research and service in public health.
2021 Exceptional Performance Award, SOPH, UAB
2016- 2018 Awarded Postdoctoral scholarship from the National Institutes of Health (NIH), Mailman School of Public Health, Columbia University
2011-2015 NOAA-CREST full scholarship, City University of New York
2012-2014 Two years scholarship by Alfred P. Sloan Foundation, PhD Program
2011 Fellowship, The Earth Science and Environmental Sustainability Program, The City University of New York

Nominations

-Senior Scientist, Center Scholar for the UAB, Center for the Study of Community Health, one of 26 Prevention Research Centers (PRCs), the UAB Center for the Study of Community Health, Feb 2023

-Dean Nomination, UAB Delegation to the United Nations 2023 Water Conference, New York, NY, April 2023

Research Interest

Urban Heat Island, urban heat mitigation strategies, mitigation strategies for dealing with urban heat and air quality, Air pollution exposure and increased risk of COPD exacerbation and asthma

attacks, Flood Resiliency Modeling and Planning Application of Remote Sensing in Environment; Water, Environment Systems and Public Health, Landfill Monitoring and Management, vulnerability to flooding and water pollution.

Selected Peer-Reviewed Journal Publication

*Graduate student co-authors

1. Kaushal, A., **Karimi, M**., Nazari, R., Opare, K., Museru, M., and Nikoo, M. Beyond Smoke and Mirrors: Cross-sectional Geospatial Analysis of COPD prevalence and other factors in the Vicinity of Toxic Release Inventory Facilities using Fuzzy Analytic Hierarchy Process. PubMed, 2024, DOI: 10.1016/j.envpol.2024.124286
2. Fahad Rabbani, Maryam Karimi, Rouzbeh Nazari *, Mohammad Reza Nikoo, Modeling Surface Temperatures in Urban Settings Using Coupled Landsat Data and NLDAS-Based Interpolation, Urban Science, December 2024
3. Museru, M*., Giglou, A*, Opare, K*, Nazari, R., and **Karimi, M**., Advancing Flood Damage Modeling for Coastal Alabama Residential Properties: A Multivariable Machine Learning Approach, Science of Total Environment, Volume 907, 2024, 167872, ISSN 0048-9697, https://doi.org/10.1016/j.scitotenv.2023.167872
4. Sabrin, S*., **Karimi, M**., and Nazari, R., The cooling potential of various vegetation covers in a heat-stressed underserved community in the deep south: Birmingham, Alabama, Urban Climate, Volume 51, 2023, https://doi.org/10.1016/j.uclim.2023.101623
5. Nazari Giglou, A*., Jazaei, F., Nazari, R., and **Karimi, M**., Assessing the effects of increased impervious surface on the aquifer recharge through river flow network, a case study of Jackson, Tennessee, USA. The Science of the Total Environment: Volume 872, 2022, https://doi.org/10.1016/j.scitotenv.2023.162203
6. Sabrin, S*., **Karimi, M**., and Nazari, R., Modeling heat island exposure and vulnerability utilizing earth observations and social drivers: A case study for Alabama, USA, Building and Environment, Volume 226, 2022, https://doi.org/10.1016/j.buildenv.2022.109686.
7. Rabbani, F*., Zech, W., Nazari, R., and **Karimi, M**, Developing a Geospatial Framework for Severe Occupational Injuries Using Moran's I and Getisord Gi Statistics for Southern United States, ASCE, Volume 23, Issue 3, 2022, https://doi.org/10.1061/(ASCE)NH.1527-6996.0000566
8. **Karimi, M** and Nazari, R and Fahad, R* and Sabrin, S*, Impact of the Built Environment on Near Surface Temperatures in Complex Urban Settings, SSRN, 2022. http://dx.doi.org/10.2139/ssrn.4181530
9. Fifolt, M., Mooney, S., Nabavi, M., **Karimi, M**., Nassel, A., and McCormick, L., Examining the built environment for healthy living via virtual street audits, Journal of Environmental Health Insights, 2022, https://doi.org/10.1177/11786302221104653
10. Rabbani Fahad, MD*., Nazari, R., **Karimi, M**., Developing A Geospatial Framework for Coupled Large Scale Thermal Comfort and Air Quality Indices Using High-Resolution Gridded Meteorological and Station Based Observations, Sustainable Cities and Society, 2021,https://doi.org/10.1016/j.scs.2021.103204
11. Sabrin, S*., Zech, W., Nazari, R., And **Karimi, M,** Understanding occupational heat exposure in the United States and proposing a quantifying stress index, International Archives of Occupational and Environmental Health, 2021, https://doi.org/10.1007/s00420-021-01711-0
12. Sun, Q*., Nazari, R., **Karimi, M.,** Rabbani Fahad, MD*., and Peters, R, Comprehensive Flood Risk Assessment for Wastewater Treatment Plants under Extreme Storm Events: A

Case Study for New York City, United States, Appl. Sci. 2021, 11, 6694. https://doi.org/10.3390/app11156694

13. Sabrin, S*., **Karimi, M.,** Rabbani Fahad, MD*., Uddin, A., Nazari, R.,The Impact of Stay-At-Home Orders on Air-Quality and COVID-19 Mortality Rate in the United States, Urban Climate, 2021, https://doi.org/10.1016/j.uclim.2021.100946
14. Sabrin, S*., **Karimi, M**., Nazari, R., Pratt, J*., & Bryk, J*., Effects of Different Urban-Vegetation Morphology on the Canopy-level Thermal Comfort and the Cooling Benefits of Shade Trees: Case-study in Philadelphia. Sustainable Cities and Society, 66, 2021, https://doi.org/10.1016/j.scs.2020.102684
15. Sabrin, S*., **Karimi, M**., and Nazari, R., Developing Vulnerability Index to Quantify Urban Heat Islands Effect Coupled with Air Pollution: A Case Study of Camden, NJ, ISPRS International Journal of Geo-Information Manuscript. 9, 349, 2020, https://doi.org/10.3390/ijgi9060349
16. **Karimi, M**. Nazari, R. Dutovo, D*., Vant-Hull, B., Khanbilvardi, R., A Conceptual Framework for Environmental Risk and Social Vulnerability Assessment in Complex Urban Settings, Journal of Urban Climate, Elsevier, ISSN: 2212-0955, Journal of Urban Climate, Vol. 26, pp. 161-173, 2018, https://doi.org/10.1016/j.uclim.2018.08.005
17. **Karimi, M.,** Vant-Hull, B., Nazari, R., Mittenzwei, M*., & Khanbilvardi, R,. Predicting surface temperature variation in urban settings using real-time weather forecasts. *Urban Climate*, *20*, 192-201. 2017, https://doi.org/10.1016/j.uclim.2017.04.008
18. **Karimi, M.,** Nazari, R. Vant-Hull, B., and Khanbilvardi, R., Urban Heat Island Assessment with Temperature Maps Using High Resolution Datasets Measured at Street Level, Journal of Constructed Environment, Vol. 6, Issue 4, pp. 17-28. 2015

Selected Peer-Reviewed Conference Proceeding

1) Ahmadi, F., Saadati, A. S., **Karimi, M**., & Hajebrahimi, M. (2025). Estimating electrical energy generation in urban spaces using piezoelectric materials: Insights from a qualitative study. Accepted for oral presentation at Smart Sustainable Cities 2025: Pioneering Novel Frontiers for Green Urban Living, Infrastructure Section.
2) Ahmadi, F., Yandra, B., Sabrin, S., Nazari, R., & **Karimi, M.** (2025). Urban heat islands and health disparities: A case study from Birmingham, Alabama. Accepted for oral presentation at Climate Health Equity Day: Our Patients, Our Planet, Our Future, March 1, 2025, Washington, D.C.
3) Kaushal, A., **Karimi, M**., Nazari, R., Opare, K., Museru, M., and Nikoo, M., Unveiling Geospatial Patterns: Analyzing COPD prevalence and TRI facilities with Fuzzy Analytic Hierarchy Process (FAHP), SOPH Poster Session, April 2024
4) **Karimi, M**., Sabrin, S.*, Kaushal, A*., and Nazari, R., Disparities in Environmental equity and Respiratory Symptoms of COPD patients in terms of Proximity to National Priorities List (NPL) sites, SOPH Poster Session, April 2023
5) Nazari, R., **Karimi, M**, High-Resolution hydrodynamic modeling and flood damage assessment in complex urban systems, IUGG23, Berlin, Germany, July 2023
6) **Karimi, M**., Sabrin, S*., and Nazari, R., Assessing the Impact of Urban Canopy Thermal Level on Pedestrian Comfort and the Benefits of Vegetation in Colling, Earth Science 2023 Congress, UAE, April 2023
7) **Karimi, M.,** Nazari, R., High-Resolution Flood Modeling and Resiliency Planning in Urban Coastal Environment, AMS Conference, Colorado, January 2023
8) Fifolt, M., Mooney, S., Nabavi, M., **Karimi, M**., Nassel, A., and McCormick, L**,** Examining the built environment for physical activity through virtual street audits, APHA, Boston, Nov 2022

9) **Karimi**, M., Nazari, R., Sabrin, S*., and Rabbani, F*., Developing a Framework for Infectious Disease Transmission and Spread Using SARS, MERS and COVID19 Data, GSPHPM2022, Munich, Germany, May 2022
10) **Karimi, M**., Sabrin, S*, and Nazari, R., Effects of Different Urban-Vegetation Morphology on the Canopy-level Thermal Comfort and the Cooling Benefits of Shade Trees: Case-study in Philadelphia, FOREM, Budapest, Hungary, March 21-23, 2022
11) **Karimi, M**., Sabrin, S*, and Nazari, R., Understanding the Importance of Thermal level Comfort and Impact of Cooling Vegetations, American Water Resources Association, 2022 Geospatial Water Technology Conference, Urban and Climate, Houston, Texas, March, 2022
12) **Karimi, M**., Sabrin, S*, and Nazari, R., Built Environment and Surface Properties Impact on Human Health, Public health World Forum, Lisbon, Portugal, 2022
13) R. Nazari and **M. Karimi**, An Innovative Decision-Making Framework For Assessing Resilience And Vulnerability of Urban Coastal Communities, 14th Ecocity World Summit 2022, Ecocity 2022
14) **Karimi, M**., Sabrin, S*, and Nazari, R., Modeling Heat-Exposure and Heat-Risk Vulnerability Utilizing Earth Observations and Social Drivers of Heat Island Effects: A Case Study for Eight Cities in Alabama, USA, American Meteorological Society Annual Meeting (13th Conference on Environment and Health), Texas, Houston, January 2022
15) Fifolt, M., McCormick, L., **Karimi, M**., Mooney, S., and Nassel, A., APHA 2021 Annual Meeting and Expo, Examining the built environment for healthy living through virtual street audits, 2021
16) Gupta, S*., Sack, C., Paulin, A., Gassett, A., Sung, C., Hess, J., Woodruff, P., Dransfield, M., Paine., R., Barjaktarevic, I., Comellas, A., **Karimi, M**., Pirozzi, C., Ortega, V., Labaki, W., Hansel, N., and Kaufman, J., Effects of ambient temperature on COPD symptoms and exacerbations in the SubPopulations and InteRmediate Outcome Measures In COPD Study (SPIROMICS) cohort, European Respiratory Society Conference (https://www.ersnet.org/), 2021
17) Nazari, R., **Karimi, M.,** Assessing the Role of the Built Environment in Resiliency Planning of Vulnerable Coastal Cities, the 3rd International Conference on Sustainable Development of Water and Environment (ICSDWE2020), South Korea, Jan 2020
18) **Karimi, M**., Sabrin., S*, A Systematic Approach to Quantifying the Impacts of Built Environment and Surface Properties on Temperature Extremes and Health, 2020 Preparedness Summit, Dallas, TX 2020.
19) **Karimi, M**., and Nazari, R., Application of an Innovative Method in Assessing the Role of Vegetation on Cooling Urban Built Environment, World Sustainable Built Environment Conference, Sweden , June 2020
20) **Karimi, M**., Nazari, R., Sabrin, S*., and Pratt, J*., Understanding Urban Microclimate Using an Innovative Technology to Measure Temperature Felt by Pedestrians, World Congress Environmental Health 2020 (WCEH 2020), Malaysia, 2020.
21) **Karimi, M**., and Nazari, R., Application of an Innovative Technology in Measuring the Impact of Urban Obstacles and Vegetation on Human Health, ICSDWE2020, 3rd International Conference on Sustainable Development of Water and Environment, South Korea, 2020.
22) **Karimi, M.,** and Nazari, R., Application of RayMan Model in Quantifying the Impacts of the Built Environment and Surface Properties on Surrounding Temperature, ICCCEH, 22th International Conference on Changing Climate and Environmental Health, Phuket, Thailand, 2020
23) **Karimi, M.,** Sabrin, S*., Pratt, J*., Measuring the Impact of Urban Morphology and Green Infrastructure on Health, JIS Smart Cities, 1st Joint International Conference on Design and Construction of Smart City Components, Egypt, December 2019
24) **Karimi, M**., Pratt, J*., Bryke, J*., Sabrin, S*., and Ferriola, V*., Application of an Innovative Method in Determining the Impacts of urban Morphology and Air Quality on Human Health in Urban Settings, Ninth International Conference on The Constructed Environment, Portugal, May 2019.
25) **Karimi, M.,** Shaman, J., Nazari, R., Quantifying the Impacts of Built Environment and Surface Properties on Temperature Extremes, Environmental Pollution and Health Hazards, Osaka, Japan, October 2018.

26) **Karimi, M.,** Shaman, J., Quantifying the Impacts of Built Environment and Surface Properties on Temperature Extremes, 4th International Conference on Pollution Control and Sustainable Environment, Rome, Italy, 2018.
27) **Karimi, M.,** Vant-Hull, B., Nazari, R., and Khanbilvardi, R. Surface Temperature Variation Prediction Model Using Real-Time Weather Forecasts, American Meteorological Society (AMS) New Orleans, LA, 2016.
28) Vant-Hull, B., **Karimi, M.**, Sossa, A*., Waxman, L., Giterez, E., and Khanbilvardi, R. Some Validations Results of a Spatially Fine Scale Air Temperature Statistical Model in New York City, American Meteorological Society (AMS), New Orleans, LA, 2016
29) Nazari, R., **Karimi, M.**, Goins, C., Musili, A., Ghandehari, M., and Khanbilvardi, R. A Framework to Conceptualize Environmental and Social Vulnerability to High Temperatures in Urban Landscapes, American Meteorological Society (AMS), New Orleans, LA, 2016
30) **Karimi, M**., Vant-Hull, B., Nazari, R., and Khanbilvardi, R. Impact of Environmental Factors in Variation of Temperature in Respect to Urban Heat Island, Manhattan, New York, American Meteorological Society (AMS), Phoenix, AZ, 2015.
31) **Karimi, M.,** Vant-Hull, B., Nazari, R., Khanbilvardi, R. Land Surface and Climate Change Impacts on Temperature Variation in New York City. 9th International Conference on Urban Climate, France, 2015.
32) Nazari, R., Ghandehari, M., **Karimi, M.,** Vant-Hull, B., and Khanbilvardi, R. New York City Thermal Cycle Assessment and Neighborhood Temperature Variations Due to the Urban Heat Island, American Meteorological Society (AMS), Phoenix, AZ, 2015.
33) Vant-Hull, B., **Karimi, M**., Sossa, A., Nazari, R., and Khanbilvardi, R., A Simple Statistical Model for Predicting Fine Scale Spatial Temperature Variability in Urban Settings, ICUC, 9th International Conference on Urban Climate, At Toulouse, France, 2015
34) **Karimi, M**., Vant-Hull, B., Nazari, R., and Khanbilvardi, R. Investigating Uneven Heating of Neighborhoods Due to Urban Heat Island for Climate Health Impacts in New York City, American Meteorological Society (AMS), Atlanta, GA, 2014.
35) Sossa, A., **Karimi, M.,** Khanbilvardi, R., and Vant-Hull, B. Establishing a Correlation Between the Urban Heat Island Effect in New York City and The Land Cover, American Meteorological Society, GA 2014.
36) Arend, M., Gutiérrez, E., Moshary, F., Bornstein, R., Khanbilvardi, R., **Karimi, M.**, Vant Hull, B., and Gonzalez, J. Monitoring and Modeling Urban Climates to Better Understand Climate Risks, AAG Annual Meeting, Los Angeles, California, 2013.
37) **Karimi, M.,** Vant-Hull, B., Khanbilvardi, R., and Nazari, R. Characterizing Temperature Variations Due to the Urban Heat Island for Climate Health Impacts in New York City, American Meteorological Society (AMS), Austin, TX. 2013.
38) **Karimi, M**., Vant-Hull, B., Nazari, R., and Khanbilvardi, R. Thermal Neighborhood Observations and Effects on Human Health Neighborhood Variations in Urban Northeast Urban Heat Island, IEEE International Geoscience & Remote Sensing Symposium, Germany, 2012.
39) **Karimi, M.,** Vant-Hull, B., Nazari, R., and Khanbilvardi, R. Characterizing Environmental Factor for Climate Health Impacts and Asthma, The Sixth Education and Science Forum, NOAA Educational Partnership Program, Florida A&M University, 2012.
40) Nazari, R., Ghandehari, M**., Karimi, M**., Vant-Hull, B., and Khanbilvardi, R. New York City Thermal Cycle Assessment and Neighborhood Temperature Variations Due to the Urban Heat Island, American Meteorological Society (AMS), GA, 2014.
41) Vant-Hull, B., **Karimi, M.,** and Khanbilvardi, R. Fine Scale Mapping of the Manhattan Heat Island for Health Impacts, American Meteorological Society, GA, 2014.

***Students Included in Presentations**

Press and News

- The Division of Research and Innovation, University of Memphis; NIH Funds Grant for Groundbreaking Medical device: https://www.memphis.edu/research/impact/newsletter_2024/october24_stories/nih_funds_grant_groundbreaking_medical_device.php, 2024
- The University of Memphis Media Room, The University of Memphis, UofM Researchers Awarded Prestigious NIH Grant for Innovative Wearable Health Monitoring Device; https://www.memphis.edu/mediaroom/releases/2024/november/uofm-researchers-receive-nih-grant-for-wearable-health-monitoring-device.php, 2024
- Birmingham Business Journal, CanAiry, Wearable Health Tech device, Startup funded by UAB professor aims to improve asthma respiratory diseases, https://www.bizjournals.com/birmingham/inno/stories/news/2023/10/03/canairy-this-startup-is-honed-in-on-air-quality.html, https://m.facebook.com/story.php?story_fbid=pfbid0sCfU8zGX2Mt7DkZj6EY2xnxwq43QJ2siCSXxDeRKwBKNrBeeqZeMqxmFzy7522Fkl&id=100064208641168&mibextid=Nif5oz , October 2023
- School of Public Health Faculty Research Spotlight, https://www.uab.edu/soph/home/research/faculty-research-spotlight/october-2023-maryam-karimi-phd-ms-mpa , October 2023
- ProPublica, North Birmingham Air Quality, August 2022
- WBHM, WBHM 90.3 | Public Radio for the Heart of Alabama, North Birmingham Air Quality, October 2020
- CGTNTV, The Climate Change Extinction Rebellion, September 2020, https://www.youtube.com/watch?v=1FVVsJZ-c2Y
- CGTN TV, The Climate Change and Extreme Weather Events in Latin America, July 2020 https://www.youtube.com/watch?v=ewqPE10PbbI
- School of Public Health Faculty Research Spotlight, January 2020
- BirminghamWatch**,** how rising temperatures and other aspects of climate change affect (or might affect) health of people living in rural Alabama, November 20, 2019
- Newsweek, Tech and Science, Climate Change is Going to Make Extreme Weather Events Worse: Here's Why, September 20, 2019 https://www.newsweek.com/climate-change-extreme-weather-events-worse-1460125
- New Jersey Healthy Communities Network, A New Path Forward, May 2019, http://www.njhcn.org/a-new-path-forward/
- New Jersey Healthy Communities Network, Leveraging Partnership: Addressing the Quality of Air in Camden. March 2019, http://www.njhcn.org/leveraging-partnership-addressing-the-quality-of-air-in-camden/
- New Jersey Healthy Communities Network, Could Planting a Tree Help Manage Asthma? July 2019, http://www.njhcn.org/could-planting-a-tree-help-manage-asthma/
- New Research Shows Temperatures Vary Block by Block. Pix11 News, August 2014, http://pix11.com/2014/08/27/think-it-was-a-mild-summer-new-research-shows-it-varies-block-by-block/

Selected Invited Talks- Keynote Speaker

- **September 2022**, Karimi, M., UAB Sigma Xi Chapter, Modeling Urban Health Vulnerability and Heat Risk for Best Mitigation Strategies, ***Invited Speaker*****April 2021**, Karimi, M., CUNY Climate Change Education Virtual Conference- ***Keynote speaker***
- **February 2020**, Karimi. M.,. EnviroDay Research Forum and Symposium (2020), the University of Virginia (UVA), ***Keynote speaker***

- **September 2019**, Karimi, M., NASA TEMPO Health Conference, New Application in the Use of Satellite Data Monitoring for Population Health, University of Alabama in Huntsville, ***Invited Speaker***
- **November 2021**, UAB PHSA Coffee Hour- on Environmental Racism, ***Panelist Speaker***
- **March 2021**, Karimi, M , UAB MPA Alumni Luncheon- on equity and justice in public health, ***Panelist Speaker***

Selected Journal Editorial And Referee

2023- Sustainability Journal, Exploring Urban Health Islands: A Special Issue on the Environmental Impacts and Root Causes, ***Guest Editor***
2022- Journal of Health and Environmental Research, ***Editorial Board member***
2021- Science Opinion Panel Survey (SciOPS), ***Expert***
2020- Remote Sensing, MDPI l- ***Reviewer***
2020- De Gruyter, Open Health Peer Reviewed Open Access Journal- ***Advisory Board***
2020- Urban Science, MDPI- ***Advisory Panel***
2020- 2020 Lancent Countdown U.S. Policy Brief –***Brief Working Group***
2020- International Journal of Environmental Monitoring and Analysis - ***Reviewer***
2020- Open Health- ***Advisory Board***
2017- Urban Climate, Elsevier- ***Reviewer***
2016- PLOS ONE- Open access journal**- *Reviewer***