Curriculum Vitae

David Keellings, Ph.D.

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Gainesville, FL 32611
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Education

Ph.D. Geography (minor in Epidemiology), University of Florida **2015**
Dissertation: Investigating Heat Waves in Europe and Florida using Extreme Value Analysis.
Supervisor: Peter Waylen

M.S. Geography (minor in Geology), University of Florida **2010**
Thesis: The Stochastic Properties of High Daily Maximum Temperatures – Application of Peak Over Threshold Extreme Value Analysis to historic temperature series in the State of Florida.
Supervisor: Peter Waylen

B.Sc. (Hon) Environmental Studies, University of Central Florida **2007**

Appointments

Associate Professor **2025-present**
Department of Geography, University of Florida

Assistant Professor **2021-2025**
Department of Geography, University of Florida

Assistant Professor **2016-2021**
Department of Geography, University of Alabama

Postdoctoral Associate **2015-2016**
Supervisor Dr. Greg Glass, Department of Geography & Emerging Pathogens Institute, University of Florida

Teaching Assistant **2012-2014**
Department of Geography, University of Florida

Graduate School Fellow **2008-2012**
Department of Geography, University of Florida

Research Interests

Climatology, Climate Extremes, Artificial Intelligence, Applied Machine Learning, Heat waves, Hazards

ORCID: 0000-0001-9932-1661

Publications

h-index: 18; Citations: 1944 (Google Scholar December 2025)

Narayanan, A., & **Keellings, D.** (2025). Rise in heat related mortality in the United States. *PLOS Climate*, 4(8), e0000610. DOI: https://doi.org/10.1371/journal.pclm.0000610

Rahaman, M., Southworth, J., Wen, Y., & **Keellings, D.** (2025). Assessing Model Trade-Offs in Agricultural Remote Sensing: A Review of Machine Learning and Deep Learning Approaches Using Almond Crop Mapping. *Remote Sensing*, *17*(15), 2670. DOI: https://doi.org/10.3390/rs17152670

Narayanan A., Rezaali M., Bunting E.L., **Keellings D.** (2025). It's Getting Hot in Here: Spatial Impact of Humidity on Heat Wave Severity in the United States. *Science of the Total Environment*, 963, 178397. DOI: https://doi.org/10.1016/j.scitotenv.2025.178397

O'Flanagan A., Senkbeil J., **Keellings D.** (2024). Understanding Public Attention to Heat Wave Information. *Papers in Applied Geography,* 1-15. DOI: https://doi.org/10.1080/23754931.2024.2388082.

Bunting E.L., Tolmanov V., **Keellings D.** (2024). What is a Heat Wave: A Survey and Literature Synthesis of Heat Wave Definitions across the United States. *PLOS Climate*, 3(9), DOI: https://doi.org/10.1371/journal.pclm.0000468

Rezaali, M., Jahangir, M.S., Fouladi-Fard, R. and **Keellings, D.** (2024). An ensemble deep learning approach to spatiotemporal tropospheric ozone forecasting: A case study of Tehran, Iran. *Urban Climate*, 55, p.101950. Doi: https://doi.org/10.1016/j.uclim.2024.101950

Moragoda N., Jones C., Liu Y., Stanley L., **Keellings D**. (2024). Assessing Climate Change Impacts on Gulf of Mexico's Water Quality: A Review. *Southeastern Geographer*. DOI: https://dx.doi.org/10.1353/sgo.2024.a929407

Narayanan, A., Peter, B. G., & **Keellings, D.** (2024). A Climate Extremes Resilience Index for the Conterminous United States. *Weather, Climate, and Society*, 16(1), 87-103. Doi: https://doi.org/10.1175/WCAS-D-23-0008.1

Du, Y., Chen, F., Zhang, Y., He, H., Wen, S., Huang, X., Song, C., Li, K., Wang, J., **Keellings, D.** and Lu, Y. (2023). Human activity coupled with climate change strengthens the role of lakes as an active pipe of dissolved organic matter. *Earth's Future*, 11(9), p.e2022EF003412. Doi: https://doi.org/10.1029/2022EF003412

Bukhari, M.H., Shad, M.Y., Nguyen, U.S.D., Treviño C, J.A., Jung, W., Bajwa, W.U., Gallego-Hernández, A.L., Robinson, R., Corral-Frías, N.S., Hamer, G.L., Wang, P., Annan, E., Ra, C.K., **Keellings, D.**, and Haque, U. (2023). A Bayesian spatiotemporal approach to modelling arboviral diseases in Mexico. *Transactions of The Royal Society of Tropical Medicine and Hygiene*, p.trad064. Doi: https://doi.org/10.1093/trstmh/trad064

Rahman, M.S., Senkbeil, J.C. and **Keellings, D.J.** (2023). Spatial and temporal variability of extreme precipitation events in the Southeastern United States. *Atmosphere*, 14(8), p.1301. Doi: https://doi.org/10.3390/atmos14081301

Wanyama, D., Bunting, E.L., Weil, N., **Keellings D.** (2023). Delineating and characterizing changes in heat wave events across the United States climate regions. *Climatic Change*, 176, 6. Doi: https://doi.org/10.1007/s10584-022-03476-y

Engström, J., Abbaszadeh, P., **Keellings, D.**, Deb, P., & Moradkhani, H. (2022). Wildfires in the Arctic and tropical biomes: what is the relative role of climate? *Natural Hazards*, 114, 1901-1914. Doi: https://doi.org/10.1007/s11069-022-05452-2

Bhuiya MMR, Hasan MMU, **Keellings D**., Mohiuddin H. (2022). Application of Machine Learning Classifiers for Mode Choice Modeling for Movement Challenged Persons. *Future Transportation*, 2(2), 328-346. Doi: https://doi.org/10.3390/futuretransp2020018

Hasan Bhuiyan, M.T., Mahmud Khan, I., Rahman Jony, S.S., Robinson, R., Nguyen, U.S.D., **Keellings, D**., Rahman, M.S. and Haque, U., (2021). The Disproportionate Impact of COVID-19 among Undocumented Immigrants and Racial Minorities in the US. *International Journal of Environmental Research and Public Health*, *18*(23), p.12708. Doi: https://doi.org/10.3390/ijerph182312708

Lubinda, J., Moore, A.J., Bi, Y., Haque, U., **Keellings, D**., Shad, M.Y., Hamaiza, B., (2021) Climate change and the dynamics of age-related malaria incidence in Southern Africa: A focus on Zambia. *Environmental Research,* 111017. Doi: https://doi.org/10.1016/j.envres.2021.111017

Deb, P., Moradkhani, H., Abbaszadeh, P., Kiem, A.S., Engström, J., **Keellings, D**. and Sharma, A. (2020) Causes of the widespread 2019–2020 Australian bushfire season. *Earth's Future*, 8, e2020EF001671. Doi: 10.1029/2020EF001671

Logan A., Goode J., **Keellings D.**, Hart J. (2020). Microsite Influence on Woody Plant Regeneration in a Pinus palustris Woodland Following Catastrophic Disturbance. *Forests*. 11, 588. doi:10.3390/f11050588

Keellings D., Moradkhani H. (2020). Spatiotemporal Evolution of Heat Wave Severity and Coverage Across the United States. *Geophysical Research Letters*. 47, e2020GL087097. Doi: 10.1029/2020GL087097

Skeeter, W.J., Reed, J.R., Cissell, J., Islam, R., **Keellings, D**. (2019). 'What can we do?': Exploratory study on undergraduate student climate change perceptions. *Geographical Bulletin*. 60(2), 149-161.

Haque, U.; da Silva, PF.; Devoli, G.; Pilz, J.; Zhao, B.; Khaloua, A.; Wilopo, W.; Andersen, P.; Ping, L.; Lee, J.; Yamamoto, T.; **Keellings, D.**; Wu, J.; Glass, GE. (2019). The human cost of global warming: Deadly landslides and their triggers (1995-2014). *Science of the Total Environment*. 682, 673-684. doi: 10.1016/j.scitotenv.2019.03.415

Keellings D., Hernández Ayala J. (2019). Extreme rainfall associated with Hurricane Maria over Puerto Rico and its connections to climate variability and change. *Geophysical Research Letters*. 46(5), 2964-2973. doi: 10.1029/2019GL082077

Keellings, D, Engström, J. (2019). The Future of Drought in the Southeastern U.S.: Projections from Downscaled CMIP5 Models. *Water.* 11(2), 259. doi: 10.3390/w11020259

Skeeter, W.J., Senkbeil, J.C., **Keellings, D**. (2019). Spatial and Temporal Changes in the Frequency and Magnitude of Intense Precipitation Events in the Southeastern United States. *International Journal of Climatology.* 39: 768-782. doi: 10.1002/joc.5841

Engström, J., & **Keellings, D**. (2018). Drought in the Southeastern USA: an assessment of downscaled CMIP5 models. *Climate Research*. 74(3), 251-262. doi:10.3354/cr01502

Keellings D., Bunting, E., & Engström, J. (2018). Spatiotemporal changes in the size and shape of heat waves over North America. *Climatic Change*. 147(1-2), pp.165-178. doi:10.1007/s10584-018-2140-3

Hernández Ayala J.J., **Keellings D**., Waylen P., Matyas C. (2017). Extreme Floods and their Relationship with Tropical Cyclones in Puerto Rico. *Hydrological Sciences*. doi: 10.1080/02626667.2017.1368521

Haque U., Blum P., da Silva P.F., Andersen P., Pilz J., Chalov S.R., Malet J.P., Auflič M.J., Andres N., Poyiadji E., Lamas P.C., Zhang W., Pesevski I., Pétursson H.G., Kurt T., Dobrev N., Davalillo J.C.G., Halkia M., Ferri S., Gaprindashvili G., Engström J., **Keellings D.** (2016). Fatal Landslides in Europe. *Landslides*:1–10. doi:10.1007/s10346-016-0689-3

Keellings D. (2016). Evaluation of Downscaled CMIP5 Model Skill in Simulating Daily Maximum Temperature Over the Southeastern United States. *International Journal of Climatology*. 36: 4172–4180. doi: 10.1002/joc.4612

Keellings D., Engström J., Waylen P. (2015). The Sunshine State: Investigating External Drivers of Sky Conditions. *Physical Geography*. 36(2), 113-126. doi: 10.1080/02723646.2015.1004995

Keellings D., Waylen P. (2014). Investigating Teleconnection Drivers of Bivariate Heat Waves in Florida using Extreme Value Analysis. *Climate Dynamics*, 44, 3383-3391. doi: 10.1007/s00382-014-2345-8

Keellings D., Waylen P. (2014). Increased Risk of Heat Waves in Florida: Characterizing Changes in Bivariate Heat Wave Risk using Extreme Value Analysis. *Applied Geography,* 46, 90-97. doi:10.1016/j.apgeog.2013.11.008

Photiadou, C., Jones, M. R., **Keellings, D.**, Dewes, C. F. (2014). Modelling European Hot Spells Using Extreme Value Analysis. *Climate Research*, 58, 193-207*,* doi:10.3354/cr01191

Waylen P.R., **Keellings D.**, Qiu Y. (2012). Climate and Health in Florida: Changes in Risks of Annual Maximum Temperatures in the Second Half of the Twentieth Century. *Applied Geography,* 33, 73-81. doi:10.1016/j.apgeog.2011.06.007

Keellings D, Waylen P. (2012). The Stochastic Properties of High Daily Maximum Temperatures: Applying Crossing Theory to Modeling High-Temperature Event Variables. *Theor Appl Climatol,* 108(3), 579-590. doi: 10.1007/s00704-011-0553-2

Knickerbocker, C.M., Leitholf, S., Stephens, E.L., **Keellings, D.J.**, Laird, H., Anderson, C.J.R., Fauth, J.E., & Quintana-Ascencio, P.F. (2009). Tree Encroachment of A Sawgrass (*Cladium jamaicense*) Marsh within an Increasingly Urbanized Ecosystem. *Natural Areas Journal,* 29(1), 15-26.

Keellings, D.J. (2007). Physiochemical Effects of the Wekiva River on the St. Johns River, Central Florida. *The Florida Geographer*, 38, 110-121.

Publications Under Review/ In Prep

Keellings D., Raney A., Engström J., Senkbeil J. (in prep). Heat Waves across the United States and their connections to climate variability and change, 1950-2024. *Climatic Change*.

Invited Lectures

Climate Communications Summit, University of Florida **2024**
Gave talk on rainfall and climate change attribution at event on "Science, Attribution and the Climate Story" sponsored by the Florida Climate Institute

School of Natural Resources and Environment, University of Florida **2023**
Gave lecture on climate change and associated health impacts to Climate Entrepreneurship class

Hazards Characterization Team, National Institute of Standards and Technology **2023**
Gave seminar titled "Extreme rainfall associated with Hurricane Maria over Puerto Rico and its connections to climate variability and change"

Epidemiology Branch Chronic Disease Climate Group, National Institutes of Health **2023**
Gave seminar titled "Where's the Heat? Spatiotemporal Evolution of Heat Waves Across the U.S."

Center for Complex Hydrosystems Research, University of Alabama **2019**
Gave seminar titled "Spatial and Temporal Evolution of Heat Waves over the U.S."

National Center for Atmospheric Research **2019**
Gave seminar titled "Spatial and Temporal Evolution of Heat Waves over the U.S." to Mesoscale and Microscale Meteorology Laboratory and Capacity Center for Climate and Weather Extremes.

Take a Journey in Science seminar series, University of Alabama **2019**
Gave seminar titled "Climate Change and Extreme Weather"

Water Group Seminar Series, University of Alabama **2018**
Gave seminar titled "The Future of Drought in the Southeastern U.S.: Projections from downscaled CMIP5 models"

Department of Geography and Geosciences, University of Louisville **2018**
Gave seminar titled "Hot Topics: Changes in the Size and Shape of Heat Waves over North America, Attributing Hurricane Maria's Rainfall to Climate Change, and Misconceptions about the Paris Climate Agreement"

Department of Geography, University of North Alabama **2018**
Gave seminar titled "Hot Topics: Changes in the Size and Shape of Heat Waves over North America and Misconceptions about the Paris Climate Agreement"

Environmental Council Meeting, University of Alabama **2017**
Gave lecture on the physical science of climate change and discussed misconceptions about the Paris Climate Agreement.

WRF Regional Climate Tutorial, NCAR **2014**
Gave lecture on application of Extreme Value Theory statistics to Weather Research & Forecasting model output. National Center for Atmospheric Research.

Physical Geography (GEO 2200), University of Florida **2010, 2011, 2012**
Lectured on a variety of topics within the atmosphere, hydrosphere, lithosphere, and biosphere.

Geography of Europe (GEA 3500), University of Florida **2012, 2013, 2014**
Lectured on heat waves in Europe. Including their expected conditions, drivers, future predictions and health impacts.

Teaching Experience

GeoAI: Geographic Artificial Intelligence (GIS 4123C/6106C) **2023-present**
An introduction to artificial intelligence concepts and methods applied to geographic data. Responsible for all aspects of course (development of lecture materials, exams, grading, Canvas class website). University of Florida.

Climate Change and Health (GEO 4033/6346) **2023-present**
An introduction to the effect of global climate change on health. Responsible for all aspects of course (development of lecture materials, exams, grading, Canvas class website).
University of Florida.

Geocomputation Using R Programming (GIS 4124/6125) **2023-present**
An introduction to geostatistical data analysis using R programming. Responsible for all aspects of course (development of lecture materials, labs, grading, Canvas class website).
University of Florida

Atmospheric Processes and Patterns (GY 101) **2016-2021**
An introduction to meteorology and climatology. Responsible for all aspects of course (development of lecture materials, exams, grading, Blackboard class website).
University of Alabama. Teaching Evaluation Mean Score: 4.1/5.0

Climate Change and Health (GY 414/514) **2018-2021**
An introduction to the effect of global climate change on health. Responsible for all aspects of course (development of lecture materials, exams, grading, Blackboard class website).
University of Alabama. Teaching Evaluation Mean Score: 4.82/5.0

Introduction to Geostatistics Using R (GY 416/516) **2018-2021**
An introduction to geostatistical data analysis using R programming. Responsible for all aspects of course (development of lecture materials, labs, grading, Blackboard class website).
University of Alabama. Teaching Evaluation Mean Score: 4.86/5.0

The Science of Climate Change **2020-Present**

Gave four week online class on the science of climate change to adults over the age of 50 as a volunteer lecturer for the Osher Lifelong Learning Institute.

Hands-on R Workshop **2019**

Led workshop on basic data analysis and visualization using R programming as part of the University of Alabama Libraries Data Services Workshop Series.

Spatial Risk Analysis Workshop **2016**

Presented series of lectures and tutorials on spatial analysis and identification of hotspots of Tularemia in the Ukraine using R. Organized as part of the Ukraine Cooperative Biological Engagement Program funded by the Defense Threat Reduction Agency in collaboration with Metabiota.

Extreme Weather (GEO 2242) **2010-2015, 2022**

An introduction to meteorology and climatology with a focus on extreme events and climate variability. Responsible for all aspects of course (development of lecture materials, exams, grading, Sakai/Canvas class website), University of Florida. Average enrollment 140. Teaching Evaluation Mean Score: 4.61/5.0 College Mean Score: 4.19/5.0

Physical Geography Online (GEO 2200) **2014**

Instructor of online course covering all aspects of physical geography. Responsible for all aspects of course (online exams, quizzes, assignments, grading, Sakai class website), University of Florida.

Academic Tutoring for University of Florida Athletic Association **2012-2015**

Tutored athletes in Physical Geography, Extreme Weather, Weather Forecasting, and several other Geography and Geology courses.

***Junior Achievement* of Central Florida** **2004**

Taught 4th Grade class weekly modules on the topic of regions and resources.

Competitive Grants Awarded

National Oceanic and Atmospheric Administration, SBIR Research Grant ($58,000) **2023-2024**

UF Principal Investigator: "Developing the Drought Risk Overview Product (DROP): Improving Flash Drought Forecasts and Early Warning Using Machine Learning and Extreme Value Theory Techniques"

National Institute of Environmental Health Sciences, Research Grant ($30,849) **2023-2024**

UF Principal Investigator: "Epigenetic response to extreme heat and its role in heat-related metabolic dysfunction: A paired human and mouse study"

Florida Climate Institute, Exploratory/Team building Seed Funding ($3,000) **2023**

Seed funding for collaboration between multiple PIs and graduate students working to draft external grant proposals.

National Science Foundation, GSS Research Grant ($340,528) **2019-2023**
Principal Investigator: "Spatiotemporal Dynamics of Heat Waves Across the United States"; with Erin Bunting (co-PI, Michigan State University). Award # BCS-1853775

Sonoma State University Research, Scholarship and Creative Activity Mini-Grant ($6,942) **2018**
Visitor funding to collaborate with Dr. Hernández Ayala on project titled "Extreme rainfall associated with the passage of Hurricane Maria over Puerto Rico."

University of Florida College of Liberal Arts and Sciences Dissertation Fellowship ($7,000) **2015**
Semester of funding and tuition to complete dissertation.

University of Florida Graduate School Dissertation Fellowship ($11,000) **2015**
Semester of funding and tuition to complete dissertation.

NCAR Visiting Scientist Funding ($3000) **2014**
Six week collaboration within Mesoscale & Microscale Meteorology Division, National Center for Atmospheric Research Earth System Laboratory, Boulder Colorado. Working on assessment of WRF regional climate model output for North, Central, and South America.

NCAR Early Career Scientist Assembly (ECSA) Visitor Funding ($2,500) **2013**
One week collaboration within Mesoscale & Microscale Meteorology Division, National Center for Atmospheric Research Earth System Laboratory, Boulder Colorado. Working on modeling European heat waves.

Advanced Study Program on the Statistical Assessment of Extreme Weather Phenomena under Climate Change ($4,000) **2011**
Hosted by the National Center for Atmospheric Research, Boulder, Colorado.

Summer Colloquium/Workshop on Climate and Health ($1,500) **2009**
Hosted by the National Center for Atmospheric Research, Boulder, Colorado.

University of Florida Office of Research travel grant ($300) **2015**
Conference travel grant.

University of Florida Graduate Student Council travel grants ($1750) **2010-2015**
Conference travel grants.

University of Florida College of Liberal Arts and Sciences travel grants ($1200) **2011-2014**
Conference travel grants.

Graduate School Fellowship ($70,000 & Tuition) **2008**
Teaching and Research Fellow four year appointment, University of Florida.

Grinter Fellowship ($4,500) **2008**
Recruitment award from the University of Florida Graduate School.

Awards

Nominated for U. of Alabama College of Arts and Sciences Distinguished Teaching Fellow 2021
Nominated to become member of Teaching Fellows Committee, fellows mentor other faculty, provide advice on assessment of teaching, and work with the College to support its teaching mission.

Best Graduate Presentation, Florida Society of Geographers Annual Meeting, Jacksonville 2015
Award given to best graduate student paper presentation. ($300)

Ryan Poehling Fellowship, Geography Department, University of Florida 2013
Award for excellence in graduate teaching, research, and departmental service ($1500)

Nominated for Graduate School Teaching Assistant Award, University of Florida 2012
Nominated by Geography Department for prestigious university-wide teaching award

Excellence in Graduate Teaching Award, Geography Department, University of Florida 2010, 2011
Award for graduate teaching assistants with evaluation scores in excess of 0.25 standard deviations above the entire College of Liberal Arts and Sciences mean score. ($200)

Best Paper Presentation, Florida Society of Geographers Annual Meeting, Miami 2008
Award given to best graduate student paper presentation. ($250)

Summa Cum Laude Graduation Honors, University of Central Florida 2007

Phi Kappa Phi National Honor Society, University of Central Florida Chapter 2006

Golden Key International Honor Society, University of Central Florida Chapter 2006

National Society of Collegiate Scholars, University of Central Florida Chapter 2005

U.S. President's Volunteer Service Award 2004

Conference Presentations

Keellings D., Narayanan A., Rezaali M., Bunting E. (2025). Spatiotemporal Impact of Humidity on Heat Wave Severity. American Geophysical Union. New Orleans, LA.

Keellings D., Narayanan A., Rezaali M., Bunting E. (2025). Spatiotemporal Impact of Humidity on Heat Wave Severity. Southeastern Division of the American Association of Geographers. Lexington, KY.

Keellings D., Narayanan A., Rezaali M., Bunting E. (2025). It's Getting Hot in Here: Spatial Impact of Humidity on Heat Wave Severity in the United States. American Association of Geographers. Detroit, MI.

Keellings D., Narayanan A., Rezaali M., Bunting E. (2025). It's Getting Hot in Here: Spatial Impact of Humidity on Heat Wave Severity in the United States. Florida Society of Geographers. Gainesville, FL.

Keellings D., Senkbeil J., Raney A., Engström J. (2024). Heat Waves and Connections to Climate Variability and Change Across the United States. American Geophysical Union. Washington, D.C.

Keellings D., Senkbeil J., Raney A., Engström J. (2024). Heat Waves and Connections to Climate Variability and Change Across the United States. Southeastern Division of the American Association of Geographers. Greenville, SC.

Keellings D., Senkbeil J., Raney A., Engström J. (2024). Heat Waves and Connections to Climate Variability and Change Across the United States. International Conference on Advances in Extreme Value Analysis and Application to Natural Hazards. Venice, Italy.

Keellings D., Senkbeil J., Raney A., Engström J. (2024). Heat Waves and Connections to Climate Variability and Change Across the United States. American Association of Geographers. Honolulu, HI.

Keellings D., Narayanan A., Rezaali M., Bunting E. (2023). Spatiotemporal Tracking of Heat Waves over the United States. American Geophysical Union. San Francisco, California.

Narayanan A. and Keellings D. (2023). Concurrences of Heatwaves and Droughts in the United States 1981-2022. American Geophysical Union. San Francisco, California.

Keellings D. (2023). Where's the Heat? Spatiotemporal Evolution of Heat Waves Across the U.S. American Association of Geographers. Denver, CO.

Keellings D. (2022). Where's the Heat? Spatiotemporal Evolution of Heat Waves Across the U.S. Southeastern Division of the American Association of Geographers. Atlanta, GA.

Narayanan A., Peter B., Keellings D. (2022). Developing a Combined Climate Extremes Resilience Index for the Conterminous United States. Southeastern Division of the American Association of Geographers. Atlanta, GA.

Rezaali M., Jahangir M., Quilty J., Keellings D. (2022). Ground-level Ozone Spatiotemporal Modeling Using a Novel WRF-coupled Deep-learning Approach. Southeastern Division of the American Association of Geographers. Atlanta, GA.

Keellings D., Bunting E., Tolmanov V. (2022). What is a Heat Wave: A Survey and Literature Synthesis of Heat Wave Definitions across the United States. American Association of Geographers, Virtual.

Bunting E., Keellings D., Wanyama D., Weil N. (2022). Delineating and Characterizing Change in Heat Wave Events and Associated Landscape Impacts across the United States. American Association of Geographers, Virtual.

Keellings D. (2020). Increase in Size and Severity of Heat Waves Across the United States. American Association of Geographers, Denver, CO.

Keellings D. (2019). Spatiotemporal Dynamics of Heat Waves Across the United States. American Geophysical Union. San Francisco, California.

Engström, J. & D. Keellings, (2019). Future Outlooks of Drought in Southeastern U.S. Alabama Water Institute Symposium. Tuscaloosa, AL.

Keellings D. (2019). Spatiotemporal Evolution of Heat Waves Across the United States. American Association of Geographers. Washington, D.C.

Keellings D. (2018). Spatiotemporal Evolution of Heat Waves Across the United States. American Geophysical Union. Washington, D.C.

Keellings D. (2018). Extreme Rainfall Associated with Hurricane Maria over Puerto Rico and its Connections to Climate Variability and Change. Southeastern Division of the American Association of Geographers. Johnson City, Tennessee.

Keellings D., Engström J. (2018). The Future of Drought in the Southeastern U.S.: Projections from downscaled CMIP5 models. American Association of Geographers. New Orleans, Louisiana.

Payne E., Keellings D. (2018). Drought in Alabama: A historical assessment of downscaled models. Undergraduate Research and Creative Activities Conference. University of Alabama, Alabama.

Keellings D., Engström J. (2017). The Future of Drought in the Southeastern U.S.: Projections from downscaled CMIP5 models. American Geophysical Union. New Orleans, Louisiana.

Keellings D. (2017) Misconceptions about the Paris Climate Change Agreement. Southeastern Division of the American Association of Geographers. Starkville, Mississippi.

Keellings D., Bunting E. (2017). Spatiotemporal Trends in Heat Waves Over North America. American Association of Geographers. Boston, Massachusetts.

Keellings D., Bunting E. (2016). Spatiotemporal Trends in Heat Waves Over North America. American Geophysical Union. San Francisco, California.

Keellings D., Bunting E. (2016). Spatiotemporal Trends in Heat Waves Over North America. Southeastern Division of the American Association of Geographers. Columbia, South Carolina.

Keellings D., Bunting E. (2016). Changes in the Spatial Nature of Heat Waves Over North America. Association of American Geographers. San Francisco, California.

Keellings D. (2015). Evaluation of Downscaled CMIP5 Model Skill in Simulating Daily Maximum Temperature Over the Southeastern United States. American Geophysical Union. San Francisco, California.

Keellings D. (2015). Evaluation of Downscaled CMIP5 Model Skill in Simulating Daily Maximum Temperature Over the Southeastern United States. Southeastern Division of the Association of American Geographers. Pensacola, Florida.

Keellings D., Bruyère C., Tye M., Jaye A., & Tewari M. (2015). Evaluating Extreme Events in a High-Resolution Regional Climate Ensemble. Association of American Geographers. Chicago, Illinois.

Keellings D. & Waylen P.R. (2015). Investigating Teleconnection Drivers of Bivariate Heat Waves in Florida using Extreme Value Analysis. Florida Society of Geographers. Jacksonville, Florida.

Keellings D. & Waylen P.R. (2015). Investigating Teleconnection Drivers of Bivariate Heat Waves in Florida using Extreme Value Analysis. American Meteorological Association. Phoenix, Arizona.

Keellings D. & Waylen P.R. (2014). Investigating Teleconnection Drivers of Bivariate Heat Waves in Florida using Extreme Value Analysis. Southeastern Division of the Association of American Geographers. Athens, Georgia.

Keellings D. & Waylen P.R. (2014). Investigating Teleconnection Drivers of Bivariate Heat Waves in Florida using Extreme Value Analysis. Association of American Geographers. Tampa, Florida.

Keellings D. & Waylen P.R. (2014). Increased Risk of Heat Waves in Florida: Characterizing Changes in Bivariate Heat Wave Risk using Extreme Value Analysis. American Meteorological Society. Atlanta, Georgia.

Keellings D. & Waylen P.R. (2013). Increased Risk of Heat Waves in Florida: Characterizing Changes in Bivariate Heat Wave Risk using Extreme Value Analysis. Southeastern Division of the Association of American Geographers. Roanoke, Virginia.

Keellings D. & Waylen P.R. (2013). Characterizing Climatological Heat Wave Risk in Florida using Extreme Value Analysis. Association of American Geographers. Los Angeles, California.

Keellings D. & Waylen P.R. (2013). Characterizing Climatological Heat Wave Risk in Florida using Extreme Value Analysis. The Emerging Pathogens Institute at the University of Florida. Gainesville, Florida. (Poster)

Keellings D., Photiadou, C., Jones, M. R., & Dewes, C. F. (2012). Modeling European Hot Spells Using Extreme Value Analysis. Southeastern Division of the Association of American Geographers. Asheville, North Carolina.

Keellings D. & Waylen P.R. (2012). Investigating Drivers of Maximum Daily Temperatures in Florida using Extreme Value Analysis. Association of American Geographers. New York, New York.

Keellings D. & Waylen P.R. (2012). Investigating Drivers of European Hot Spells using Extreme Value Analysis. The Emerging Pathogens Institute at the University of Florida. Gainesville, Florida. (Poster)

Keellings D., Photiadou, C., Jones, M. R., & Dewes, C. F. (2012). Investigating Drivers of European Hot Spells using Extreme Value Analysis. American Meteorological Society. New Orleans, Louisiana.

Keellings D. & Waylen P.R. (2011). Investigating Drivers of Maximum Daily Temperatures in Florida using Extreme Value Analysis. Southeastern Division of the Association of American Geographers. Savannah, Georgia.

Keellings D. & Waylen P.R. (2011). Investigating Drivers of Maximum Daily Temperatures in Florida using Extreme Value Analysis. State University System of Florida Climate Change Workshop. Gainesville, Florida. (Poster)

Keellings D. & Waylen P.R. (2011). The Stochastic Properties of High Daily Maximum Temperatures. Chaired session on Climate and Human Health and presented to the Association of American Geographers. Seattle, Washington.

Keellings D. (2011). Climatic similarity and the dispersal of *Ochlerotatus japonicus* through the global shipping network: 1980-2050. Florida Society of Geographers. Gainesville, Florida.

Keellings D. & Waylen P.R. (2011). Climate and Health in Florida: Changes in the risks of annual maximum temperatures in the latter half of the twentieth century. The Emerging Pathogens Institute at the University of Florida. Gainesville, Florida. (Poster)

Keellings D. & Waylen P.R. (2011). Climate and Health in Florida: Changes in the risks of annual maximum temperatures in the latter half of the twentieth century. University of Florida Graduate Student Council Interdisciplinary Research Conference. Gainesville, Florida.

Keellings D. & Waylen P.R. (2010). A Method of Predicting the Risks of Annual Maximum Daily Temperatures. Southeastern Division of the Association of American Geographers. Birmingham, Alabama.

Hancock P., Keellings D., Hancock G. (2010). Psychogeography: The Example of the Spatial Distribution of the Perception of Time in Life. International Conference on Human Performance. Orlando, Florida.

Keellings D. & Waylen P.R. (2010). The Stochastic Properties of High Daily Maximum Temperatures. The Emerging Pathogens Institute at the University of Florida. Gainesville, Florida. (Poster)

Keellings D. & Hancock G. (2010). Perception of Time in Life. Florida Society of Geographers. Tampa, Florida.

Keellings D. & Waylen P.R. (2009). The Stochastic Properties of High Daily Maximum Temperatures. Chaired session and presented to Southeastern Division of the Association of American Geographers. Knoxville, Tennessee.

Keellings D. & Waylen P.R. (2009). The Stochastic Properties of High Daily Maximum Temperatures. Florida Environmental Health Association. Daytona Beach, Florida.

Keellings D., Knickerbocker, C.M., Leitholf, S., Stephens, E.L., Laird, H., Anderson, C.J.R., Fauth, J.E., & Quintana-Ascencio, P.F. (2008). Tree Encroachment of A Sawgrass (*Cladium jamaicense*) Marsh within an Increasingly Urbanized Ecosystem. Southeastern Division of the Association of American Geographers. Greensboro, North Carolina.

Keellings D., Knickerbocker, C.M., Leitholf, S., Stephens, E.L., Laird, H., Anderson, C.J.R., Fauth, J.E., & Quintana-Ascencio, P.F. (2008). Tree Encroachment of Sawgrass (*Cladium jamaicense*) Marshes within an Anthropogenic Dominated Ecosystem. Florida Society of Geographers. Miami, Florida.

Keellings D. (2007). Physiochemical Effects of the Wekiva River on the St. Johns River, Central Florida. Florida Society of Geographers. Jacksonville, Florida.

Service

Graduate Student Supervision:

Capps Herron, Holli
Precipitation Extremes across Chile
PhD of Geography, University of Florida 2026

Narayanan, Anuska
Extreme Heat and Relationships to land surface processes
PhD of Geography, University of Florida 2026

O'Flanagan, Angela
Spatiotemporal Patterns of US Heat Waves Awareness
Master of Science Geography, University of Alabama 2022

Rezaali, Mostafa
Applications of GeoAI for Investigating Heat Waves
PhD of Geography, University of Florida 2026

Suhi, Kazi
PhD of Geography, University of Florida 2029

Graduate Student Committees:

Brey, Haley
Estimating Potential Dune Vulnerability to Storm Sequences
Master of Science Geography, University of Alabama 2018

Bissainte, Donal
PhD of Geography, University of Florida 2027

Butler, Robert
Barchan Morphometrics: Analyses from Earth and Mars
Master of Science Geography, University of Alabama 2019

Chaudhary, Anusha
The Future of Namibian Landscape in A World of Changing Climate
PhD of Geography, University of Florida 2026

Dambe, Natalia
Drivers of Renewable Energy across the United States and Southern Africa
PhD of Geography, University of Florida 2026

Goode, Davis
Effective restoration of shortleaf pine ecosystems to improve biodiversity and promote resiliency
PhD of Geography, University of Alabama 2022

Hasan, Muyeed
Vegetation Dynamics in Bangladesh and the Gulf Coast
PhD of Geography, University of Florida 2026

King, Aaron
Authority, Institutions, and Governance: Understanding CBNRM Performance in Southern Africa
PhD of Geography, University of Florida 2026

Levy, Hazel
Geospatial determinants of STEM precollege access
PhD in Higher Education Administration and Policy, College of Education, University of Florida 2025

Li, Shuai
PhD of Geography, University of Florida 2028

Munasinghe, Dinuke
Drivers and Trends of Large River Deltas' Morphological Dynamics in the 21st Century
PhD of Geography, University of Alabama 2021

Quadrado, Gabrielle
Physical Processes contributing to Extreme Water Levels on the Gulf and Atlantic Coasts of the U.S.
PhD of Geography, University of Florida 2024

Rahaman, Mashoukur
Examining Machine and Deep Learning Techniques to Predict Almond Crop Locations in Central Valley California Using Remote Sensing Technologies
Master of Science Geography, University of Florida 2023

Rahman, Siddiqur
Spatial and Temporal Variability of Extreme Precipitation Events in the Southeastern United States
Master of Science Geography, University of Alabama 2023

Raney, Austin
Improving bank-full condition estimation for better representation in hydrological models
Master of Science Geography, University of Alabama 2020

Reed, Jacob
PoP Problem: Developing New Ways to Communicate Precipitation Forecasts to Maximize Perceived Forecast Accuracy
Master of Science Geography, University of Alabama 2019

Sabrina, Sabiha
PhD of Geography, University of Florida 2028

Sami, Shamsudduha
PhD of Geography, University of Florida 2027

Skeeter, Walker
Synoptic Characteristics of Intense Precipitation Events in the Southeastern United States
Master of Science Geography, University of Alabama 2018

Stanley, Lydia
Urban Heat Island Dynamics and Assessment of Mitigation Techniques
Master of Science Geography, University of Alabama 2021

Thomas, Courtney
Predicting COVID-19 Compliance Behaviors in College Students using the Health Belief Model
Master of Science Community Health Science and Population Health, University of Alabama 2022

Tomko, Brianna
Identifying and Analyzing Flood Transition Zone Variation Across Multiple Atlantic and Gulf Coast Rivers
Master of Science Geography, University of Florida 2024

Wang, Hongsheng
Extreme Precipitation Associated with Mid-Latitude Storms
PhD of Geography, University of Florida 2023

Reviewer for:
Advances in Statistical Climatology Meteorology and Oceanography
Annals of the American Association of Geographers
Applied Geography
Applied Meteorology and Climatology
Atmosphere
Atmospheric Research
Climate Change and Health
Climate Dynamics
Climate Research
Climatic Change
Communications Earth & Environment
Discover Public Health
Earth's Future
Environmental Earth Sciences
Environment International
Environmental Sciences Europe
Geophysical Research Letters
International Journal of Biometeorology
International Journal of Climatology
Journal of Climate
Journal of Geophysical Research: Atmospheres
Journal of Hydrology
Journal of the Royal Statistical Society
Natural Hazards
Nature Communications
One Earth
Papers in Applied Geography

Physical Geography
Scientific Data
Scientific Reports
Stochastic Environmental Research and Risk Assessment
Sustainability
Sustainable Cities and Society
Theoretical and Applied Climatology
Urban Sustainability
Water

Book Reviews:
Halverson J.B. & Rabenhorst T.J. (2010). Severe Storms and Their Environmental Impacts: Causes and Responses. Oxford University Press. New york, New York.

Gervais B. (2018). Living Physical Geography, 2nd Edition. WH Freeman.

Montgomery D., Bierman P., Ziegler S. (2025) Physical Geography. W.W. Norton

College Service
- Featured in UF CLAS magazine Ytori as part of the UF AI Initiative (2021)
- Participated in "Q&A with A&S" live facebook faculty-public question and answer session (2019)
- University of Alabama College of Arts and Sciences Technology Faculty Advisory Committee (2017-2020).
- Faculty advisor for UA Environmental Council student organization (2018-2021)

Department Service
- Member of GIS/GeoAI Instructor search committee
- Member of Geography Department Chair search committee
- Member of AI committee assisting with development of AI curriculum
- Member of Alumni committee organizing alumni events, dept. promotion, fundraising
- Geography Department Faculty Technology Representative (2017-2020).
- Co-Chair search committee for UA 2017 full professor in climate modeling
- Awards Committee for faculty nominations
- Search Committee for UA 2016 water-energy-food and political ecology positions.
- Faculty advisor for UA Club Geography student organization (2016-2021)
- Organization of transportation to national conferences 2011-2015.
- Promotion of department at national conferences through manning department display 2011-2015.
- Sitting on graduate student advisory panel as part of undergraduate senior seminar class 2008-2015.
- Promoting geography and department course offerings through development of a lecture aimed at introducing the discipline, current research, and available courses to non-major undergraduates.
- Assisting with arrangements for luncheons and visiting faculty 2008-2015.

Service to the Discipline
- Student presentation judge at the annual meeting of the American Geophysical Union.
- Florida State Representative to the Southeast Division of the American Association of Geographers
- Organizing presentation sessions and panel discussions at the American Association of Geographers

Service to the Community
- Invited talk titled "Heat Waves and Climate Change" to Tuscaloosa YMCA Men's Group (2019)
- Invited talk titled "Heat Waves and Health" to Tuscaloosa Kiwanis International Club (2019)
- Gave speech at Global Climate Strike event organized on University of Alabama campus (2019)

Media Coverage
- 2024 New Scientist Magazine, UK, asked for comment on global climate change impacts on heat wave size and movement.
- 2023 WUFT News interview on how farmers in North Central Florida have been impacted by climate change.
- 2023 Florida Alligator News interview on changing hot temperature extremes in Gainesville and the impact on UF's athletes.
- 2022 Yahoo! News interview on Hurricane Fiona and how climate change may be impacting tropical storms in Puerto Rico.
- 2022 CBS interview on Hurricane Fiona and how climate change may be impacting tropical storms.
- 2022 Yale Climate Connections cites my research on Hurricane Maria when discussing climate change impacts on Hurricane Fiona.
- 2022 Washington Informer interview on the heat waves impacting Washington D.C. and discussed the role of climate change.
- 2021 NBC News interview on Hurricane Ida and how climate change may be impacting tropical storms.
- 2019 CBS This Morning, NPR, CNN, Scientific American, The Weather Channel, AGU News, etc. Coverage of my paper linking Hurricane Maria to climate change.
- 2019 University of Alabama news coverage of Tuscaloosa heat wave.
- 2019 WVUA TV. "Ring of Fire" heat wave over the southeast, update and discussion.
- 2019 University of Alabama news coverage of my heat wave research and awarded NSF grant.
- 2019 Tuscaloosa News, NBC, ABC, CBS, Fox news coverage of my heat wave research and awarded NSF grant.
- 2019 Our House Media interview for documentary on extreme weather and climate change.
- 2019 EOS interviewed for "Heat Waves Are Blowing in the Wind"
- 2019 University of Alabama Alumni Magazine interview for featurette on "What Does the Future Hold?" on topic of future weather and climate.
- 2018 WVUA TV. Hurricane Florence update and discussion of potential for intense flooding.

Academic Field Experience

Remote Sensing: Collection of training samples within Paynes Prairie State Preserve
Limnological studies in Central Florida.
Ecological Studies (Graduate Level): Study of and Fieldtrips to each ecosystem type throughout Florida.
Plant Ecology research (Graduate Level): Lake Wales Ridge State Forest (Plant Demographic Species Studies), MacKay Tract Orlando (Plant Community Composition and Change), Wekiva State Park (Study of Lichen Distribution).
Psychological data collection.

Professional Experience

Environmental Consultant **2003-2010**
Conducted environmental assessments with Storm L. Richards & Associates, Inc.

Independent Environmental Consultancy **2006-present**
Independent environmental assessments.

Review of Cultural Training Programs in the U.S. Department of Defense **2008**
Worked in collaboration with the Behavioral Consultants Group (BCG) in association with Human Resources Technology (HRT) Inc. on behalf of the Culture Research Program at Department of Defense Equal Opportunity Management Institute (DEOMI), at Patrick Air Force Base, Cocoa Beach, Florida.

Professional Field Experience

Wetland Delineation
Species Surveying
Gopher Tortoise Relocation
Hazardous Material Assessments (ASTM: Phase 1)
Cultural Resource Assessments

Technical Skills

Proficient in Microsoft Office Suite, SQL Server, NCSS, Systat, ArGIS, ERDAS Imagine.
Advanced programming experience in R (including Machine Learning libraries Keras and Tensorflow).
Basic programming experience with Visual Basic and Python.

Language Skills

English – native speaker
French, German, Spanish, Swedish - basic

Professional Membership

Association of American Geographers (AAG)	2008-present
American Geophysical Union (AGU)	2015-present
Climate Specialty Group of AAG	2010-present
Southeastern Division of AAG	2008-present
American Meteorological Society	2012-present
Florida Society of Geographers	2007-2015

Volunteer Work

Gainesville Rabbit Rescue **2015-2016**
Care for rescued/abandoned rabbits

Science Fair Judge **2011-2012**

Evaluated 6th – 8th grade Science Fair projects for scientific merit, presentation, and communication of science. Westwood Middle School, Gainesville, Florida.

HIV Health Services Planning Council, Orlando **2005**

Designed new member orientation materials as part of a service-learning course on technical and professional communication.

Primrose Center for people with developmental disabilities, Orlando **2006**

Designed employee training materials as part of a service-learning course on risk communication.

Freedom Ride Orlando **2004**

Assisted in therapeutic horseback riding for children and adults with disabilities.

Habitat for Humanity **2004**

Assisted in construction of home in Winter Park, Florida.