

JOSHUA UEBELHERR

uebelherr@gmail.com

Interests: Integration of climate change solutions, air quality science and policy, and quantitative analysis.

EDUCATION

PhD in Public Administration and Policy, 2017
Arizona State University, School of Public Affairs, Phoenix, AZ
Dissertation: Examining Hazard Governance from a Complex Systems Perspective
Certificate: Policy Informatics

Master of Science, 2008
Duke University, Graduate School University Program in Ecology, Durham, NC
Major: ecohydrology and ecophysiology
Master's thesis: The effects of plant-area index on precipitation throughfall and its spatiotemporal variation among deciduous and evergreen forests.

Bachelor of Arts, *magna cum laude*, 1997
University of Colorado, Boulder, CO
Double major: Environmental, population and organismic biology; and
Environmental Conservation: Climatology.
Senior thesis: Bulk canopy conductance over a grassland site in the Cooperative Atmospheric Exchange Study 1997.

EXPERIENCE

Climate Program Manager, City of Phoenix, Phoenix, AZ, 2022 – Present
Developed and implemented strategic plans, policies, communications, and evaluation tools to implement the Phoenix Climate Action Plan. Conducted policy development and coordination including strategic analysis of current and emerging policies such as climate justice to identify new initiatives and develop and implement climate policies city-wide. Coordinated, monitored, and prioritized implementation of climate projects. Conducted climate change research and developed strategies for solutions. Acted as liaison to the public designing and facilitating active, equitable community engagement efforts including workshops, webinars, and meetings.

Senior Air Quality Planner, Maricopa County Air Quality Department, Planning and Analysis Division, Analysis Unit, Phoenix, AZ, 2019 – 2022
Air Quality Planner, 2018 – 2019
Maricopa County Community Greenhouse Gas Emissions Inventory project manager for tri-annual inventory. Project manager for the NO₂ Low-Cost Sensor Study. Provided air emission permit holder stakeholder education, training, and assistance through published material and live educational outreach presentations for annual emissions inventory completion. Responsible for air pollution emissions inventories for EPA reporting. Worked on exceptional event analysis for high pollution events. Designed and implemented lawn and garden equipment exchange programs to reduce air pollution. Supervised intern's and their work.

Faculty Associate, Arizona State University, Phoenix, AZ, 2017 – Present
School of Public Affairs
Outstanding Faculty Associate Award 2021. Courses taught online and in person: graduate Public Service Research I, graduate Public Policy Analysis, undergraduate Economics and Public Policy, undergraduate Leadership and Change, undergraduate Public Service Research Methods, and graduate GIS and Analysis in Public Policy.

Faculty Associate, Grand Canyon University, Phoenix, AZ, 2018 – Present

College of Humanities and Social Sciences

Taught in person and online graduate courses Policy Studies, Public Governance, and Economics for Public Administrators to master's in public administration students.

Graduate Research Associate, Arizona State University, Phoenix, AZ, 2013 – 2017

School of Public Affairs and Center for Policy Informatics

Designed and created an agent based model of the Phoenix Heat Relief Network institutional cooling center interaction with observed meteorologic heat index.

Developed and implemented a participatory modeling process to improve the hybrid Netlogo and GIS based model to improve stakeholder decision making.

Urban Climate & Health Researcher, Arizona State University, 2016

School of Geographical Sciences and Urban Planning

Conducted stratified spatial survey sampling of households for heat waves and power outages across Phoenix. Surveyed public transit riders for their heat experience.

Assistant Research Professional, Arizona State University, Tempe, AZ, 2010-2013

Assistant Research Scientist, University of Wyoming, Laramie, WY, 2009-2010

Developed, managed, and analyzed projects with large databases using GIS, Matlab, R, OpenBUGS, and SQL. Supervised post-doctoral researchers, graduate students, and lab assistants. Researched National Science Foundation Plant Ecophysiological, theoretical, and computational framework to link tree form and function to forest diversity and productivity.

Fisheries Observer, NOAA National Marine Fisheries, Honolulu, HI, 2006-2009

Monitored catch and protected species interactions for birds, turtles, and mammals, totaling 494 days at sea out of the ports of Honolulu and American Samoa.

Research Diver, NOAA Coral Reef Ecosystem Division, Honolulu, HI, 2006

NW Hawaiian Islands Marine National Monument marine debris reef restoration.

Graduate Research Assistant, Duke University, Durham, NC, 2002-2005

Nicholas School of the Environment: Managed ecosystem experiments of H₂O and CO₂ flux response to inter-annual environmental variation; supervised lab assistants and managed research projects.

Research Scientist, NCAR, NSSL International H₂O Project 2002, Norman, OK, 2002

Project management for convective storm initiation & flash-flood prediction.

Environmental Planner, RI Dept. of Env. Management, Providence, RI, 2000-2001

Rhode Island Greenhouse Gas Action Plan project manager and technical director developing 1990 RI state baseline greenhouse gas emissions profile for CO₂, CH₄, and N₂O statewide. Developed portfolio of predicted greenhouse gas emissions for different gas types from all parts of the economy for stakeholder decisions. Child Lead Poisoning Reduction project manager. Wrote and maintained Air, Water and Waste Division strategic EPA work plans.

Toxicologist, Springborn Laboratories, Wareham, MA, 1999

Managed invertebrate/vertebrate toxicology studies of effluent and polluted soils.

Environmental Affairs Intern, Senator John F. Kerry, Boston, MA, 1999

Managed cases related to environmental legislation and policy to aid constituents.

Research Intern, NCAR Micro and Mesoscale Meteorology, Boulder, CO, 1999

Analyzed Cooperative Atmospheric Surface Exchange Study 1997 data.

Asst. Biome Manager, Columbia University, Biosphere 2 Center, Oracle, AZ, 1998

Managed projects for elevated atmospheric CO₂ effects on ocean coral and tree growth.

Civil Air Patrol, Colorado Air National Guard, Boulder, CO, 1995-1996
Trained as Colorado Air National Guard and Air Force ROTC pilot-in-training for search and rescue missions over the Colorado Rocky Mountains.

PUBLICATIONS

Miech, J. A., Stanton, L., Gao, M., Micalizzi, P., **Uebelherr, J. M.**, Herckes, P., Frasier, M. P. (2023). In-Situ Drift Correction for a Low-cost NO₂ Sensor Network. *Environmental Science: Atmospheres*, 3, 894.

Miech, J. A., Stanton, L., Gao, M., Micalizzi, P., **Uebelherr, J. M.**, Herckes, P., Frasier, M. P. (2021). Calibration of Low-Cost Sensors through Environmental Factor Correction. *Toxics*, 9 (11), 281.

Uebelherr, J. M., Hondula, D. M., and Johnston, E. (2017). Using participatory modeling to enable local innovation through complexity governance. In *Innovation Networks for Regional Development*, Eds. Vermeulen, B, and Paier, M., Springer series *Economic Complexity and Evolution*.

Berisha, V., Hondula, D. M., Roach, M., White, J., McKinney, B., Bentz, D., Mohammed, A., **Uebelherr, J. M.**, and Goodin, K. (2017). Assessing Adaptation Strategies for Extreme Heat: A Public Health Evaluation of the Phoenix Heat Relief Network. *Weather, Climate, and Society*, 9, 71-80.

Tor-ngern, P., Oren, R., Oishi, A.C., **Uebelherr, J. M.**, Palmroth, S., Tarvainen, L., Ottosson-Löfvenius, M., Linder, S., Domec, J., and Näsholm, T. (2017). Spatiotemporal variation of transpiration of pine forests: synthesis of new and published results. *Ecological Applications*, 27, 118-133.

Stoy P. C., Katul G. G., Siqueira M. B. S., Juang J.-Y., McCarthy H. R., Oishi A. C., **Uebelherr J. M.**, Kim H.-S., Oren R. (2006). Separating the effects of climate and vegetation on evapotranspiration along a successional chronosequence in the southeastern U.S. *Global Change Biology*, 12, 2115-2135.

Stoy P. C., Katul G. G., Siqueira M. B. S., Juang J.-Y., Novick K. A., **Uebelherr J. M.**, Oren R. (2006). An evaluation of models for partitioning eddy covariance-measured net ecosystem exchange into photosynthesis and respiration. *Agricultural and Forest Meteorology*, 2-18.

CONFERENCE PROCEEDINGS

Uebelherr, J. M. Speciated VOC Sampling to Understand VOCs and Sources Contributing to Ozone Formation in Maricopa County. *National Ambient Air Monitoring Conference, Pittsburg, PA, August 2022*.

Uebelherr, J. M. Using Low-Cost NO₂ Sensors to Understand Ozone Formation in Maricopa County. *National Ambient Air Monitoring Conference, Pittsburg, PA, August 2022*.

Miech, J., Frasier, M., Herckes, P., and **Uebelherr, J. M.**, Bi-weekly low-cost NO₂ sensor collocation for improved calibration performance. *Air Sensors International Conference, Davis, CA, May 2022*.

Uebelherr, J. M. Low Cost NO₂ Sensor Study. *Association of Air Pollution Control Agencies Conference, Salt Lake City, UT, April 2022*.

- Uebelherr, J. M.** Maricopa County 2018 Community Greenhouse Gas Emissions Inventory Overview. *Environmental Professionals of Arizona Conference, Tempe, AZ, March 2022.*
- Uebelherr, J. M.,** Valenzuela, H., Raisanen, E., Eberle, R., and Anderson, C. Arizona Regional Emissions Inventory Collaboration. *2019 International Emissions Inventory Conference – Collaborative Partnerships to Advance Science and Policy, Dallas, TX, August 2019.*
- Uebelherr, J. M.,** Hondula, D. M., and Johnston, E. W. Improved participatory model of the Phoenix Heat Relief Network. *Participatory Democracy Conference, Tempe, AZ, December 2015.*
- Uebelherr, J. M.,** Hondula, D. M., and Johnston, E. W. Improved participatory model of the Phoenix Heat Relief Network (poster), *Association for Public Policy and Management Conference, Miami, FL, November 2015.*
- Mossberger, K., Tolbert, C., Zhang, Y., and **Uebelherr, J. M.** Building a research community: new longitudinal data on internet use and inequity across cities and Counties, 1997-2013, *Association of Internet Researchers Conference, Phoenix, AZ, October 2015.*
- Mossberger, K., Tolbert, C., Zhang, Y., and **Uebelherr, J. M.** New longitudinal data on internet use and inequity across U.S. cities and counties, 1997-2013, *Partnership for Progress on the Digital Divide Conference, Scottsdale, AZ, October 2015.*
- Uebelherr, J. M.,** Hondula, D. M., and Johnston, E. W. Participatory modeling research in the Phoenix Heat Relief Network (poster), *Complex Systems Conference, Tempe, AZ, September 2015.*
- Uebelherr, J. M.,** Hondula, D. M., and Johnston, E. W. Exploring complexity governance through self-organizing approach to managing heat exposure in Arizona, *Public Management Research Association Conference, Minneapolis, MN, June 2015.*
- Mossberger, K., Gracey, K., DeSouza, K., and **Uebelherr, J. M.** Data, tools, & innovation: trending applications in U.S. cities. *Digital Governance Society Conference Workshop, Phoenix, AZ, May 2015.*
- Uebelherr, J. M.,** Hondula, D. M., and Johnston, E. W. Innovative participatory agent based modeling using a complexity governance perspective. *Digital Governance Organization Conference, Phoenix, AZ, May 2015.*
- Uebelherr, J. M.,** Hondula, D. M., and Johnston, E. W. Extreme heat relief agent based model of an ad-hoc cooling center network of community and public organizations. *Association of American Geographers Conference, Chicago, IL, April 2015.*
- Uebelherr, J. M.,** Hondula, D. M., Eneboe, J., and Johnston, E. W. Extreme heat relief agent based model of an ad-hoc cooling center network of community and public organizations. *American Meteorological Society Conference, Phoenix, AZ, January 2015.*
- Uebelherr, J. M.** Extreme heat relief in phoenix: gap analysis of cooling center accessibility. *Society for Risk Analysis Conference, Denver, CO, December 2014.*
- Hondula, D.M., Asburry, A., Bentz, D., Berisha, V., Eneboe, J., Goodin, K., Luc, M., McCullough, M., Mohamed, A., Roach, M., Salas, B., Starr, K., and **Uebelherr, J.**

Evaluation adaption strategies for extreme weather: Cooling center utilization and accessibility in Phoenix, AZ. *20th International Congress of Biometeorology, Cleveland, OH, September 2014.*

Juang, J.-Y., Porporato, A., Stoy, P. C., Siqueira, M. B. S., Oishi, A. C., Kim, H.-S., **Uebelherr, J. M.** and Katul, G. G. The effect of land cover change on the convective precipitation during the growing season in the Southeastern United States. *American Geophysical Union Conference, San Francisco, CA, December 2005.*

Stoy P. C., Katul G. G., Siqueira M. B. S., Juang J.-Y., Palmroth S., Kim, H.-S., McCarthy H., Oishi A. C., **Uebelherr J. M.**, Oren R. The carbon and water cycles in SE piedmont ecosystems: Insights from 17 site-years of eddy covariance data. *Southeastern Evolution and Ecology Conference, Athens, GA, March 2005.*

Stoy P. C., Katul G. G., Juang J.-Y., Siqueira M., Palmroth, S., Kim H.-S., McCarthy H., Oishi A. C., **Uebelherr J. M.**, Oren R. Interactions between the carbon and water cycles along a successional gradient in the southeastern US. *American Geophysical Union Conference, San Francisco, CA, December 2004.*

Grossman, R. L., Lemone, M. A., Chen, F., Yates, D., McIntyre, H., Blanken, P., **Uebelherr, J. M.** Investigation of Land-Atmosphere Interactions Across the East-West USA Continental Precipitation Gradient: CASES in the International H2O Project. *American Geophysical Union Conference, San Francisco, CA, December 2003.*

Uebelherr, J. M., Grossman, R. L., Lemone, M. A., Blanken, P. Bulk Canopy Conductance and NDVI Along a Precipitation Gradient During IHOP 2002 in the US Southern Great Plains. *American Geophysical Union Conference, December 2003.*

Grossman, R. L., Lemone, M. A., Yates, D., Chen, F., McIntyre, H., Blanken, P., Alfieri, J., **Uebelherr, J. M.** Investigation of land-atmosphere interactions across the east-west USA continental precipitation gradient: CASES in the International H2O Project (IHOP). *EGS-AGU-EUG Joint Assembly, April 2003.*

Grossman, R. L., Lemone, M. A., Chen, F., Yates, D., Cuenca, R., Alfieri, J. G., **Uebelherr, J. M.**, McIntyre, H., Blanken, P. Investigation of Meso-scale Land-Atmosphere Interactions Across the East-West Continental Precipitation Gradient: CASES in the International H2O Project (IHOP). *American Geophysical Union Conference, San Francisco, CA, December 2002.*

Uebelherr J. M., Grossman R. L. and Blanken P. D. Bulk Canopy Conductance Over a Grassland Site in CASES-97. *American Geophysical Union Conference, San Francisco, CA, December 2000.*

TEACHING ASSISTANT

Teaching Assistant: PAF 300 Public Administration & Management.
Arizona State University School of Public Affairs, 2012 (in person) and 2016 (online).
Designed exams & homework assignments for course and calculated final grades.

Teaching Assistant: PAF 505 Public Policy Analysis.
Arizona State University School of public Affairs, 2012
Intensive course using Netlogo agent based models, game theory, and framing of political interest distribution to evaluate likely success of policy proposals.

Teaching Assistant: Environmental Science and Policy.
Duke University Nicholas School of the Environment, 2005.
Responsible for leading field trips as well as grading exams and assignments.

Teaching Assistant: Energy and the Environment.

Duke University Nicholas School of the Environment, 2003.
Assisted with design of the course, and taught climate policy and energy issues.

Teaching Assistant: Sources, not symptoms, of Environmental Problems
Duke University Nicholas School of the Environment, 2002-2003.
Co-taught seminar style course; responsible for critical thinking discussions.

Lab Instructor: Human Biology Laboratory. University of Colorado at Boulder,
Environmental, Population, & Organismal Biology 1998.
Laboratory teaching methods included lecture and applied lessons such as dissection.

AWARDS, GRANTS, & SCHOLARSHIPS

Student Travel Grant: Arizona State University School of Public Affairs for the
Association for Public Policy and Management Conference, Miami, FL, 2015.

Student Travel Grant: Arizona State University School of Public Affairs for the
Professional Management Research Association Conference, Minneapolis, MN, 2015.

Student Travel Grant from Society for Risk Analysis Conference, Denver, CO, 2014.

Graduate Fellowship, Arizona State University School of Public Affairs, 2012-2015.

University Program in Ecology Graduate Fellowship, Duke University, 2002-2003.

Environmental Protection Agency, 2001 (\$25,000) "Rhode Island Department of
Environmental Management Child Lead Paint Risk Reduction" Joshua Uebelherr
and Janet Keller (RI Dept. of Environmental Management).

Environmental Protection Agency, 2000 (\$100,000) "Rhode Island Department of
Environmental Management Greenhouse Gas Action Plan" Joshua Uebelherr and
Janet Keller (RI Dept. of Environmental Management).

HONORS

Pi Alpha Alpha National Honor Society for Public Affairs and Administration, and
Sigma Xi Scientific Research Society

SERVICE ACTIVITY

Conference Co-Chair and managing local host, Partnership for Progress on the Digital
Divide Conference, Scottsdale, AZ, Oct. 2015.

Student Volunteer, Complex Systems Conference, Tempe, AZ, Sept. 2015.

Workshop and Tutorial Co-Chair, Digital Government Society Conference, Phoenix,
AZ, May 2015.

Workshop Instructor: *Data, tools, & innovation: trending applications in U.S. cities.*
Digital Governance Society Conference Workshop, Phoenix, AZ, May 2015.

Household Survey Volunteer, Center for Disease Control, Community Assessment for
Public Health Emergencies (CASPER) in Maricopa County, AZ, March 2015.

Student Volunteer, Society for Risk Analysis Conference, Denver, CO, December 2014.

Manuscript Review: Mangel, Marc. *The Theoretical Biologist's Toolbox: Quantitative
Methods for Ecology and Evolutionary Biology*, Cambridge University Press, 2006.

SCHOLARLY AFFILIATIONS

Association of American Geographers, American Geophysical Union, American
Meteorological Society, American Society for Public Administration, Association for
Policy Analysis and Management, Association of Internet Researchers, Digital
Governance Organization, Complex Systems Society, Public Management

Resource Association, Partnership for Progress on the Digital Divide, and Society for Risk Analysis.

OTHER SKILLS

Word, Excel, Access, Power Point, ArcGIS (ESRI certified), Atlas.ti, MS Office, Matlab, R, Netlogo, OpenBUGS, S-Plus, Sigma Plot, NOLS Wilderness First-Aid, DAN Oxygen First-Aid and CPR trained; certified NOAA Coxswain (class III vessels), PADI Dive Master & NOAA trained Scientific Diver.