JOSHUA UEBELHERR

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Interests: Teaching, Climate Change, Air Quality, and Environmental Policy and Management.

EDUCATION

Doctor of Philosophy in Public Administration and Policy (GPA 3.79), 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 (GPA 3.75), 2008
Duke University, Graduate School, University Program in Ecology, Durham, NC
Major: Ecology - 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 (GPA 3.3), *Magna cum laude*, 1997
University of Colorado, Boulder, CO
Double major: Environmental, Population, and Organismic Biology; and Environmental Conservation: Climatology.
Senior thesis: Penman-Monteith model bulk canopy conductance over a grassland site in the Cooperative Atmospheric Exchange Study 1997.

EXPERIENCE

Asst. Teaching Professor, Arizona State University, Phoenix, AZ, July 1, 2026 start
School of Public Affairs, Watts College of Public Service and Community Service
Full-time faculty appointment with a 4/4/2 course load (10 courses/year, 80% effort) in public administration, public policy, and emergency management across undergraduate and graduate programs in multiple modalities (in-person, online, hybrid) on the Downtown Phoenix and Tempe campuses. Mentored students and adjunct instructors; contributed to program assessment and curriculum development. Dedicate 20% effort to school, college, university, and professional service through committee work, program events, and collaborative initiatives.

Faculty Associate, Grand Canyon University, Phoenix, AZ, 2018 – Present
College of Humanities and Social Sciences
Taught 18 in-person and online graduate courses in Policy Studies, Public Governance, Economics for Public Administrators, and Public and Nonprofit Administration to master's students in public administration.

Faculty Associate, Arizona State University, Phoenix, AZ, 2018 – 2026
School of Public Affairs, Watts College of Public Service and Community Service
Instructed 44 courses in-person, online, and hybrid formats for both undergraduate and graduate students. Undergraduate courses taught include How to Survive the 21st Century, Economics and Public Policy, Public Research Methods, Leadership and Change, and Contemporary Policy Challenges. Graduate courses taught were Public Service Research I, Public Policy Analysis, Organizational Behavior, and Geographic Information Systems Analysis for Public Administration. Served as the advisor for a Barrett honors thesis, *Exploring Housing Policy Through Critical Discourse: A Podcast Analysis*. Received the ASU School of Public Affairs Distinguished Faculty Associate Award for the 2020-2021 academic year. I designed and built the ASU

PAF-591 Canvas course, Climate Change Policy and Management, with dual undergrad and graduate enrollment.

Climate Program Manager, City of Phoenix, Phoenix, AZ, 2022 – 2025
Led development of plans, policies, communications, and performance metrics for the Phoenix Climate Action Plan (CAP). Served as primary liaison between city departments and the public for the 2024 CAP Progress Report and CAP update. Authored the 2024 CAP Progress Report. Directed equitable community engagement with residents and businesses through webinars, workshops, and surveys. Maintained Phoenix's CDP A rating through accurate, timely environmental disclosure. Project manager and lead author for the 2025 CAP; modeled citywide GHG emissions (2022–2050) using the C40 Cities Pathways model to assess policy-driven reductions. I monitored the hazardous waste spill hotline and coordinated cleanup between emergency response and contractors.

Senior Air Quality Planner, Maricopa County Air Quality Department, Planning and Analysis Division, Analysis Unit, Phoenix, AZ, 2019 – 2022
Air Quality Planner, 2018 – 2019
Experience in air quality monitoring and emissions analysis. Project manager for the NO_2 Low-Cost Sensor Study published in two academic journals. Managed IMPACT, a comprehensive emissions inventory and inspections database supporting annual reporting and regulatory compliance. Reviewed air quality regulations and provided technical assistance on emissions inventories to regulated entities. Designed methodology and served as lead author for the 2018 Maricopa County Community Greenhouse Gas Inventory, detailing municipal emissions. Co-authored EPA-mandated Maricopa County triannual criteria pollutant emissions inventories (2017, 2020). Evaluated pollution control strategies and developed emissions inventories for permitted facilities. Conducted exceptional event analyses using monitoring data, HYSPLIT modeling, and satellite imagery to assess wildfire smoke and dust (haboob) impact on air quality. Applied EPA Chemical Mass Balance modeling to evaluate VOC source contributions to ozone formation. Designed and implemented electric lawn and garden equipment exchange programs to reduce emissions. Supervised interns and ensured quality and timely completion of work.

Graduate Research Associate, Arizona State University, Phoenix, AZ, 2013 – 2017
School of Public Affairs and Center for Policy Informatics
Designed and developed an agent-based model of the Maricopa County Heat Relief Network to simulate cooling center utilization and institutional interactions using observed meteorological data. Led a participatory modeling process to refine a hybrid NetLogo-GIS framework, enabling stakeholder-driven planning and decision-making. Conducted field measurements of extreme heat and administered social surveys to evaluate community exposure and heat-related health risks.

Urban Climate & Health Researcher, Arizona State University, 2016
School of Geographical Sciences and Urban Planning
Conducted stratified spatial survey sampling of households across Maricopa County to evaluate the impacts of heat waves and power outages. Surveyed public transit riders to assess heat exposure experiences while collecting micro-meteorological data. Deployed temperature and humidity sensors in Phoenix neighborhoods with varying tree cover to analyze the effects of tree canopy on localized climate conditions.

Assistant Research Professional, Arizona State University, Tempe, AZ, 2010-2013
Assistant Research Scientist, University of Wyoming, Laramie, WY. 2009-2010
Managed Dr. Kiona Ogle's plant physiology and hierarchical Bayesian statistics modeling laboratory, overseeing research operations, personnel, and regulatory compliance. Directed and analyzed large-scale research projects using GIS, Matlab, R, OpenBUGS, and SQL to manage and interpret complex datasets. Supervised and

mentored postdoctoral researchers, graduate students, and laboratory assistants. Conducted research for National Science Foundation–funded studies, developing plant ecophysiological, theoretical, and computational frameworks linking tree form and function to forest diversity, productivity, and atmospheric carbon and water exchange. Maintained laboratory operations, including hazardous materials management, chemical inventory control, and waste disposal compliance.

Fisheries Observer, NOAA National Marine Fisheries, Honolulu, HI, 2006-2009
Monitored catch and protected species interactions (birds, turtles, mammals) across 17 contracts, completing 494 days at sea from the ports of Honolulu, Hilo, and American Samoa.

Research Diver, NOAA Coral Reef Ecosystem Division, Honolulu, HI, 2006
Conducted reef habitat restoration within the NW Hawaiian Islands National Marine Monument and collected population data on target species.

Graduate Research Assistant, Duke University, Durham, NC, 2002-2005
Nicholas School of the Environment
Managed ecosystem studies examining H_2O and CO_2 flux responses to interannual environmental variability; supervised laboratory assistants.

Research Scientist, International H_2O Project, Norman, OK, 2002
National Center for Atmospheric Research and National Severe Storms Laboratory
Project management for convective storm initiation and flash-flood prediction in Kansas, Oklahoma, and Texas. Deployed and managed micrometeorological surface stations measuring energy flux and leaf area index data for satellite data analysis.

Environmental Planner, RI Dept. of Env. Management, Providence, RI, 2000-2001
Project manager and technical director for the Rhode Island Greenhouse Gas Action Plan, leading development of the 1990 statewide baseline GHG inventory (CO_2, CH_4, N_2O). Developed and analyzed a portfolio of projected emissions reductions across economic sectors to support stakeholder policy decisions. Served as the child lead poisoning policy project manager, developing enforcement policy and ensuring lead-safe practices through inspections and cross-agency coordination. Authored and maintained strategic EPA Performance Partnership work plans for the Air, Water, and Waste Divisions.

Toxicologist, Springborn Laboratories, Wareham, MA, 1999
Managed invertebrate and vertebrate toxicology studies of effluent and polluted soils.

Environmental Affairs Intern, Senator John F. Kerry, Boston, MA, 1999
Worked on federal environmental legislation. Managed cases related to environmental legislation and policy to aid constituents.

Research Intern, National Center for Atmospheric Research, Boulder, CO, 1999
Micro and Mesoscale Meteorology Division
Analyzed the Cooperative Atmospheric Surface Exchange Study 1997 data of the ecosystem effect on convective storm initiation.

Asst. Biome Manager, Columbia University, Biosphere 2 Center, Oracle, AZ, 1998
Managed projects for elevated atmospheric CO_2 effects on ocean coral growth rates and tree growth. Deployed coral samples at different depths in the ocean biome and measured weight weekly to develop a regression model of light impact on coral growth rates. Analyzed variation in leaf nitrogen concentration from trees grown in elevated CO_2.

Lab Instructor: Human Biology Lab, University of Colorado, Boulder, CO, 1998

Environmental, Population, & Organismic Biology Department
Laboratory teaching methods included lectures and applied lessons, such as the dissection of organisms.

Civil Air Patrol, Colorado Air National Guard, Boulder, CO, 1995-1996
Participated in pilot training with the Colorado Air National Guard and Air Force ROTC, preparing for search and rescue missions over the Colorado Rocky Mountains. Piloted and navigated training flights supporting search and rescue operations along the Rocky Mountain Front Range.

STUDENT MENTORING

Honors thesis advisor for Arizona State University Barrett Honors College, 2024
Honors thesis advisor for Corinn Cruz: *Exploring Housing Policy Through Critical Examination: A Podcast Analysis.*

TEACHING ASSISTANT

Teaching Assistant: PAF 300 Public Administration and Management, 2012; 2016
Arizona State University School of Public Affairs, in-person and online.
Graded exams and homework assignments for the course and calculated final grades.

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

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

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

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

CERTIFICATIONS

Hazardous Waste Operations and Emergency Response (HAZWOPER) 24-hour course certified (OSHA 29CFR 1910.120(e)). DOT and EPA Waste Shipment certified (DOT 49CFR 172.704 and EPA 40CFR Part 262). RCRA Waste Management and Generator certified (EPA 40CFR 262.16).

SKILLS

C40 Cities Pathways greenhouse gas (GHG) forecast model, GHG and criteria air pollutant emission inventories, EPA Chemical Mass Balance Model, EPA exceptional event analysis, CDP reporting, Word, Excel, Access, PowerPoint, ArcGIS (ESRI certified), Atlas.ti, Matlab, R, NetLogo, S-Plus, Sigma Plot, NOLS Wilderness First-Aid, DAN Oxygen First-Aid, CPR, certified NOAA Coxswain (class III vessels), PADI Rescue Dive Master, and NOAA-trained Scientific Diver.

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 NO_2 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 NO_2 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 NO_2 sensor collocation for improved calibration performance. *Air Sensors International Conference, Davis, CA, May 2022.*

Uebelherr, J. M. Low Cost NO_2 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.*

AWARDS, GRANTS, AND SCHOLARSHIPS

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

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

Student Travel Grant, 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 Grant ($25k), 2001
Rhode Island Dept. of Environmental Management
"Rhode Island Department of Environmental Management Child Lead Paint Risk Reduction," Joshua Uebelherr and Janet Keller.

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

HONORS

Pi Alpha Alpha National Honor Society for Public Affairs and Administration, 2013

Sigma Xi Scientific Research Society, 2001

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.