

Maura Hahnenberger

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OBJECTIVE:

Teaching: Innovate in student-centered STEM learning which increases motivation, engagement, and critical thinking. Improve the environment for women and minorities to pursue and succeed in science.
 Research: Develop and maintain a high quality interdisciplinary research program in the area of human-landscape interactions and their impact on water and air quality.

EDUCATION:

PhD	Atmospheric Sciences Advisor: Kevin D. Perry Dissertation Title: "Dust storms in the eastern Great Basin of Utah, U.S.A."	<i>University of Utah</i>	2014
MS	Meteorology Advisor: C. David Whiteman Thesis Title: "Topographic effects on nighttime cooling in a basin and plain atmosphere" Received High Pass on PhD Qualifying Exam, GPA: 4.0	<i>University of Utah</i>	2008
BS	Meteorology summa cum laude Valedictorian & Outstanding Senior, College of Mines and Earth Sciences Outstanding Senior, Department of Meteorology Major GPA: 4.0, Total GPA: 3.99, Eight Semesters on the Dean's List	<i>University of Utah</i>	2005

TEACHING EXPERIENCE:

Lecturer (Tenure-Track) 2014-Present

Salt Lake Community College, Geosciences Department, Salt Lake City, UT

- Developed student centered curriculum in geography and meteorology.
- Directed interactive class discussions.
- Engaged students with online learning.
- Utilized multimedia techniques for diverse learners.
- Adapted course material for disabled students.
- Courses: GEOG 1000 Physical Geography, GEOG 1700 Natural Disasters, MET 1010 Intro to Meteorology

Adjunct Instructor (BIOL 110 Environmental Biology) 2013

Westminster College, Environmental Studies Program, Salt Lake City, UT

- Directed students in data collection for an ongoing on-campus water quality study.
- Prepared and adapted instructional material.
- Developed formal and informal assessment.
- Updated multimedia, interactive, and inquiry learning modules.
- Collaborated with other instructors.

Associate Instructor (ATMOS 1010 Severe & Unusual Weather) 2012-2013

University of Utah, Department of Atmospheric Sciences, Salt Lake City, UT

- Responsible for preparing instructional material, instructing and managing course.
- Evaluated students with both formal and informal assessment.
- Integrated multimedia, interactive, and inquiry learning into traditional curriculum.
- Held office hours. Advised and mentored students.

Teaching Assistant (ATMOS 1010 Severe & Unusual Weather) 2010-2011

University of Utah, Department of Atmospheric Sciences, Salt Lake City, UT

- Responsible for developing demonstrations, experiments, and problem based lessons to enhance students' educational experience.
- Delivered interactive lectures and led student discussions.
- Held office hours. Advised and mentored students.

NSF GK-12 TGLL Fellow (Think Globally, Learn Locally) 2009-2010*University of Utah, Salt Lake City, UT*

- Planned, prepared, and taught inquiry based lessons on topics including air pollution, local ecology, habitat alteration, and Utah geology.
- Brought academic research into K-12 classrooms.
- Developed a teaching module on habitat alteration.

WEST Fellow (Water, the Environment, Science, and Teaching) 2008-2009*University of Utah, Salt Lake City, UT*

- Developed and taught inquiry based lessons on topics including meteorology, geology, adaptation, and Utah environments.
- Produced teaching material and wrote, filmed, and acted in a video introducing the scientific method using air pollution in Utah as an example.
- The Polluted WEST, part one: <http://www.youtube.com/watch?v=Y1DYFnTQy2s>
- The Polluted WEST, part two: <http://www.youtube.com/watch?v=snuuTspO-SY>

Ballet & Yoga Instructor 2009-Present*Salt Lake City School District Community Education, Salt Lake City, UT*

- Responsible for developing, planning, and instructing classes in ballet and yoga.
- Taught students with a wide range of ages and abilities.

PEER-REVIEWED PUBLICATIONS:

Hahnenberger, M. and Perry, K.D. Chemical comparison of dust and soil from the Sevier Dry Lake, UT, USA. In preparation for *Atmospheric Environment*.

Hahnenberger, M. and Nicoll, K., 2014. Geomorphic and land use characteristics of dust sources in the eastern Great Basin of Utah, U.S.A. *Geomorphology*, **204**, 657-672. <http://dx.doi.org/10.1016/j.geomorph.2013.09.013>

Hahnenberger, M. and Nicoll, K., 2012. Meteorological characteristics of dust storm events in the eastern Great Basin of Utah, U.S.A. *Atmospheric Environment*, **60**, 601-612. <http://dx.doi.org/10.1016/j.atmosenv.2012.06.029>

Whiteman, C.D., Muschinski, A., Zhong, S., Fritts, D., Hoch, S.W., **Hahnenberger, M.**, Yao, W., Hohreiter, V., Behn, M., Cheon, Y., Clements, C.B., Horst, T.W., Brown, W.O.J., and Oncley, S.P., 2008: METCRAX 2006 - Meteorological experiments in Arizona's Meteor Crater. *Bulletin of the American Meteorological Society*, **89**, 1665-1680. <http://journals.ametsoc.org/doi/abs/10.1175/2008BAMS2574.1>

Bell, T.L., Rosenfeld, D., Kim, K.-M., Yoo, J.-M., Lee, M.-I., and **Hahnenberger, M.**, 2008: Midweek increase in U.S. summer rain and storm heights suggests air pollution invigorates rainstorms. *Journal of Geophysical Research*, **113**, D02209, doi:10.1029/2007JD008623. <http://onlinelibrary.wiley.com/doi/10.1029/2007JD008623/abstract>

PROFESSIONAL EXPERIENCE:**Graduate Research Assistant** Advisor: Kevin D. Perry 2009-2013*University of Utah, Department of Atmospheric Sciences, Salt Lake City, UT*

- Initiated and planned a research program to study dust transport in the eastern Great Basin of Utah.
- Collaborated with scientists in meteorology, geology, and geography.
- Coordinated disparate datasets to answer specific scientific questions about dust.
- Published and presented results.

Climate Action Plan Update Intern 2012-2013*University of Utah, Office of Sustainability, Salt Lake City, UT*

- Assessed the University's progress toward climate neutrality, and identified areas of improvement.
- Engaged stakeholders in a collaborative process to update and improve the Climate Action Plan.
- Submitted a progress report to the ACUPCC and developed a draft CAP update.
- Developed a greenhouse gas report for the University of Utah.

Director, Forecaster, & Co-Founder 2003-2013*UtahSkiWeather.com, Salt Lake City, UT*

- Managed a team of forecasters and student volunteers.
- Produced a high quality weather forecast for all Utah's ski resorts on a daily basis.
- Trained students in mountain weather forecasting.

- Graduate Research Assistant** Advisor: C. David Whiteman 2005-2009
University of Utah, Department of Meteorology, Salt Lake City, UT
- Developed a field program to study stable boundary layers in complex terrain.
 - Quality controlled and collated data from field operations.
 - Analyzed multiple datasets to answer scientific questions.
 - Prepared manuscripts, publications, and presentations of results.
- Forecaster, Tethersonde Director, & Field Coordinator** 2006
METCRAX (The Meteor Crater Experiment), Meteor Crater, AZ
- Forecasted and delivered daily weather briefings for the project scientists.
 - Coordinated tethersonde launches during intensive observational periods.
 - Gathered equipment and made logistical arrangements.
 - Ensured the well being of the team during deployment.
- Summer Institute on Atmospheric, Hydrospheric, & Terrestrial Sciences** 2004
NASA/Goddard Space Flight Center, Greenbelt, MD
- Analyzed data from the TRMM satellite on precipitation in the southern United States.
 - Developed a technique to determine the weekly variability of precipitation.
 - Published results in a peer-reviewed journal.
- Undergraduate Research Assistant** 2003-2004
University of Utah, Department of Meteorology, Salt Lake City, UT
- Quality controlled data from the South American Low Level Jet Experiment (SALLJEX).
 - Collaborated with colleagues.
- Oklahoma Weather Center, Research Experience for Undergraduates** 2003
National Weather Center, Norman, OK
- Analyzed pilot balloon data from Lake Titicaca and the Salar de Uyuni in Bolivia.
 - Determined wind flows in the region.
 - Quality controlled pilot balloon data from SALLJEX.

FUNDING AWARDED:

On the Cutting Edge Early Career Faculty Workshop Travel Grant	2014
Building Future Faculty Institute Travel Grant	2014
Expert Witness Training Academy Travel Grant	2013
AGU Science Policy Conference Student Travel Grant	2013
AAAS Section E (Geology & Geography) Travel Grant	2013
NSF GK-12 TGLL Fellowship	2009-2010
AMS Summer Policy Colloquium Travel Grant	2009
WEST Fellowship	2008-2009
Graduate Student Travel Grant	2008
Graduate Student Travel Grant	2006
AMS/Industry/Government Graduate Fellow, NASA's Earth Science Enterprise	2005-2006
University of Utah Kennecott Fellowship: Kennecott Scholar	2001-2005
University of Utah Full Tuition Scholarship	2001-2005

RESEARCH PRESENTATIONS:

- Hahnenberger, M.**, 2014: Dust storms in the eastern Great Basin. Presented, Department of Marine, Earth, and Atmospheric Sciences, Building Future Faculty Institute, North Carolina State University, Raleigh, NC, 2-5 Apr.
- Hahnenberger, M.**, 2013: Mountain Microclimates: Field observations for science learning. Presented, 24th Utah Environmental Education Conference, Alta Ski Resort, Alta, UT, 24-26 Oct.
- Hahnenberger, M.**, 2012: Weather in the West. Presented, 23rd Utah Environmental Education Conference, Bear River Migratory Bird Refuge, Brigham City, UT, 4-6 Oct.
- Hahnenberger, M.**, Nicoll, K., and Perry, K.D., 2011: Meteorological and physical characteristics of dust transport events in the Eastern Great Basin of Utah, U.S.A. Presented, 2011 Fall Meeting, American Geophysical Union, San Francisco, CA, 5-9 Dec., U14A-07. (Available online: <http://vimeo.com/33303991>)
- Hahnenberger, M.** and Perry, K.D., 2010: Atmospheric dust transport in the Great Basin. Presented, 4th Graduate Climate Conference: University of Washington, Pack Forest Conference Center, WA, 15-17 Oct., PB7.

- Hahnenberger, M.** and Perry, K.D., 2010: Atmospheric dust transport in the Great Basin. Presented, Natural Resource Needs Related to Climate Change in the Great Basin & Mojave Desert: Research, Adaptation, Mitigation, Las Vegas, NV, 20-22 Apr., P44. (Available online: http://www.wr.usgs.gov/workshops/ccw2010/posters/P44_Hahnenberger_DustPoster_v3.pdf)
- Hahnenberger, M.**, Whiteman, C.D., and Hoch, S.W., 2009. Topographic Amplification Factor in a Closed Basin. Presented, 5th Spring Runoff Conference and 14th Intermountain Meteorology Workshop, Climate Change and the Intermountain West: Downscaling the Future; Logan, UT, 2-3 April, 2009; Session B2.
- Hahnenberger, M.** and Whiteman, C.D., 2008: Topographic effects on nighttime cooling in a basin and plain atmosphere. Presented, 13th Conference on Mountain Meteorology, American Meteorological Society, Whistler, BC, 11-15 Aug., 8B.2.
- Hahnenberger, M.** and Whiteman, C.D., 2007: Comparison of stable boundary layer evolution in a small basin and over the surrounding plain. Presented, 29th International Conference on Alpine Meteorology, Chambéry, France, 4-8 Jun., F.3.
- Hahnenberger, M.** and Whiteman, C.D., 2006: The role of near-surface temperature data sets in Terrain-Induced Rotor Experiment (T-REX) analyses. Presented, 12th Conference on Mountain Meteorology, American Meteorological Society, Santa Fe, NM, 28 Aug.-1 Sep., P 1.12.
- Hahnenberger, M.** and Whiteman, C.D., 2006: METCRAX – The Meteor Crater Experiment: An upcoming Study of Cold Air Pools and Seiches in Arizona's Meteor Crater. Presented, 5th Student Conference, American Meteorological Society, Atlanta, GA, 28-29 Jan.
- Hahnenberger, M.**, Whiteman, C.D., Muschinski, A., Zhong, S., and Fritts, D., 2005: The Meteor Crater Experiment: An Upcoming Study of Cold Air Pools and Seiches in Arizona's Meteor Crater. Presented, 12th Workshop on Weather Prediction in the Intermountain West, DRI, Reno, NV, 3 Nov., IV.3.
- Bell, T and **Hahnenberger, M.**, 2005: TRMM evidence of a “weekend effect” for U.S. rainfall. Presented, 19th Conf. on Hydrology, American Meteorological Society, San Diego, CA, 13 Jan., 2.2.
- Hahnenberger, M.**, Galvez, J., and Douglas, M., 2004: Summertime precipitation variability and atmospheric circulation over the South American Altiplano. Presented, 3rd Student Conference, American Meteorological Society, Seattle, WA, 10 Jan., P 1.21.

ADDITIONAL PUBLICATIONS:

- Hahnenberger, M.**, 2014: Dust storms in the eastern Great Basin of Utah, U.S.A. Ph.D. Dissertation, Dept. Of Atmospheric Science, University of Utah, 153 pp.
- Hahnenberger, M.**, 9 May 2014. Letter: Do more to get ready for climate change. *The Salt Lake Tribune*. <http://www.sltrib.com/sltrib/opinion/57920959-82/climate-utah-impacts-national.html.csp>
- Hahnenberger, M.** and Kiefer, J., 11 March 2013. Weathering Change: Adapting to Earlier Snowmelt. *Explore Utah Science*. <http://www.exploreutahscience.org/science-topics/science-and-society/item/100-weathering-change-adapting-to-earlier-snowmelt>
- Hahnenberger, M.**, 26 February 2012. Taking Talisker to task. *The Salt Lake Tribune*. <http://www.sltrib.com/sltrib/opinion/53575489-82/skilink-talisker-ski-forest.html.csp>
- Hahnenberger, M.**, 2008: Topographic effects on nighttime cooling in a basin and plain atmosphere. M.S. Thesis, Dept. Of Meteorology, University of Utah, 85 pp.
- Hahnenberger, M.**, 6 December 2007. Letter: You on snow watch? Check out this link. *The Daily Utah Chronicle*. <http://www.dailyutahchronicle.com/index.php/letter-you-on-snow-watch-check-out-this-link/>

VIDEO PRODUCTIONS:

- Hahnenberger, M.**, 2012. A Dusty Story. <http://vimeo.com/49981448>
- Hahnenberger, M.**, 2012. DUST: Blowin' in the Wind. <http://vimeo.com/49981447>
- Hahnenberger, M.** and Beehler, A., 2011. Cottam's Gulch. <https://www.youtube.com/watch?v=m7pfi30u0SQ>
- Hahnenberger, M.**, Ruff, J., and Smith, E., 2009. The polluted WEST: A journey through the scientific method. <https://www.youtube.com/watch?v=Y1DYFnTQy2s>
<https://www.youtube.com/watch?v=snuatSpO-SY>

MEDIA APEARANCES:

- Strand, H., 19 June 2014. Dust in the Wind. *Wild About Utah*. <http://wildaboututah.org/dust-wind/>
- Cour, L., 7 August 2013. On campus beat: William Mitchell law school teaches scientists to talk straight. *Star Tribune*. <http://www.startribune.com/local/218774931.html>
- Isaak, A., 10 April 2013. "America's Scientist Idol" game show. *Center for Inquiry/National Science Foundation*. <https://www.youtube.com/watch?v=G1rfclMpdhw>

- Zastrow, M., 15 February 2013. The trouble with naming #Nemo. *ZastrowPhysics*.
<https://zastrowphysics.wordpress.com/2013/02/15/the-trouble-with-naming-nemo/>
- Evans, W. and Bammes, D., 4 December 2012. Utah Facing Tough New Air Quality Regulations. *KUER*.
<http://kuer.org/post/utah-facing-tough-new-air-quality-regulations>
- Achey, J., February 2012. The Sandstone Alps. *Climbing Magazine*. <http://www.climbing.com/?archive=the-sandstone-alps>
- Engkilterra, S, 25 January 2012. Rally Opposes SkiLink and FCOZ changes. *Examiner.com*.
<http://www.examiner.com/article/rally-opposes-skilink-and-fcoz-changes>
- Finlinton, R., 24 June 2011. Man Beast: UEN SciFi Friday, Science to go with the show. *Utah Education Network*.
<http://www.uen.org/tv/scifi/man-beast.shtml>
- Totten, R., 11 November 2009. 2nd climate forum makes progress. *The Daily Utah Chronicle*.
<http://www.dailyutahchronicle.com/index.php/2nd-climate-forum-makes-progress/>
- Fahys, J., 29 May 2009. Gentlemen, ladies: Stop your engines. *The Salt Lake Tribune*.
http://www.sltrib.com/news/ci_12472296
- Teigland, D., 23 April 2004. Where everybody knows your name: Smaller majors dot U campus. *The Daily Utah Chronicle*. <http://www.dailyutahchronicle.com/index.php/where-everybody-knows-your-name-smaller-majors-dot-u-campus/>

LEADERSHIP:

President	2012-2013
Vice President	2010-2012
Secretary	2008-2010
Vice President	2007-2008
<i>Utah Chapter of the American Meteorological Society & National Weather Association</i>	
Director	2009-2013
Forecaster	2003-2013
Co-Founder	2003
<i>UtahSkiWeather.com</i>	
Leader	2012-2013
<i>Career Discussion Group, University of Utah, Department of Atmospheric Sciences</i>	
Forecaster & Group Leader	2001-2011
<i>Campus Forecast, University of Utah, Department of Atmospheric Sciences</i>	
President	2004-2005
Vice President	2003-2004
Secretary	2002-2003
Educational Outreach Coordinator	2002-2003
<i>American Meteorological Society, University of Utah Chapter</i>	
Student Representative	2003-2004
<i>Student Advisory Committee, University of Utah, Department of Meteorology</i>	
SERVICE:	
Reviewer	2014-Present
<i>Journal of Applied Meteorology and Climatology</i>	
Reviewer	2013-Present
<i>Atmospheric Environment</i>	
Educational Outreach Presenter & Science Fair Judge	2002-Present
<i>Salt Lake City and Canyons School Districts</i>	
Developer, Climate Action Plan, Research & Curriculum Committee	2009-2011
<i>Climate Action Plan, Office of Sustainability, University of Utah</i>	

Mountain Host <i>Solitude Mountain Resort</i>	2002-2007
Volunteer Cast Member <i>Opening Ceremony, 2002 Salt Lake City Paralympics</i>	2002
Course Crew, Women's Downhill <i>Snowbasin, 2002 Salt Lake City Olympics</i>	2002

HONORS:

Contestant, America's Science Idol, AAAS Annual Meeting	2013
Member of the Year, Student Chapter of the AMS, University of Utah	2009
Member of the Year, Student Chapter of the AMS, University of Utah	2008
Valedictorian, College of Mines and Earth Sciences, University of Utah	2005
Outstanding Senior, College of Mines and Earth Sciences, University of Utah	2005
Outstanding Senior, Department of Meteorology, University of Utah	2005
Dean's List, University of Utah	2001-2005
Mortar Board Honor Society	2004
Barry M. Goldwater Scholarship Nominee	2003
The Honor Society of Phi Kappa Phi	2002
Golden Key International Honor Society	2002
Phi Eta Sigma National Honor Society	2002

WORKSHOPS & CONFERENCES:

On the Cutting Edge Early Career Faculty Workshop <i>University of Maryland, College Park, MD</i>	2014
AGU Science Policy Conference <i>American Geophysical Union, Washington, DC</i>	2014
Building Future Faculty Institute <i>North Carolina State University, Raleigh, NC</i>	2014
Professional Development Day 2014 <i>Salt Lake Community College, South City Campus, Salt Lake City, UT</i>	2014
Utah Environmental Education Conference <i>Utah Society for Environmental Education, Alta, UT</i>	2013
Workshop: Tree-ring reconstructions of streamflow and applications in Wasatch water management <i>Western Water Assessment, Salt Lake City, UT</i>	2013
Expert Witness Training Academy (Funded Participant) <i>William Mitchell College of Law, Saint Paul, MN</i>	2013
AGU Science Policy Conference (Funded Participant) <i>American Geophysical Union, Washington, DC</i>	2013
41st Annual Water Resources Conference, "Water: The Common Thread" <i>Utah Section of the American Water Resources Association (AWRA)</i>	2013
Environmental Justice Simulation <i>Utah Society for Environmental Education (USEE)</i>	2013
From Particles to People: Air Quality, Health and Society Retreat <i>Program for Air Quality, Health, and Society, University of Utah</i>	2013
Self Promotion Skills Workshop <i>Graduate and Advanced Lady Scientists (GALS), University of Utah</i>	2013
Intermountain Sustainability Summit <i>Weber State University, Ogden, UT</i>	2013
AAAS 2013 Annual Meeting (Funded Participant) <i>American Association for the Advancement of Science (AAAS), Boston, MA</i>	2013
Teaching Dossier Workshop <i>Center for Teaching and Learning Excellence, University of Utah</i>	2012
Utah Environmental Education Conference <i>Utah Society for Environmental Education, Bear River Migratory Bird Refuge, Brigham City, UT</i>	2012
NSF Science Becoming the Messenger Workshop <i>National Science Foundation, Marriot City Creek, Salt Lake City, UT</i>	2012

Annual Teaching Symposium	2012
<i>Center for Teaching and Learning Excellence, University of Utah</i>	
Lower Atmospheric Observing Facility User's Workshop (Funded Participant)	2012
<i>National Center for Atmospheric Research, Boulder, CO</i>	
Roles of the Scientist in Society	2012
<i>Research Administration Training Series, University of Utah</i>	
Alternatives to the Lecture in Large Classes	2012
<i>Center for Teaching and Learning Excellence, University of Utah</i>	
3-Day Science Filmmaking Course by ScienceFilm (Partially Funded Participant)	2011
<i>Center for Science and Mathematics Education, University of Utah</i>	
Cottam's Gulch (produced during the course): http://www.youtube.com/watch?v=eQnC4GbdVxk	
Putting Your Science to Work, Peter Fiske	2011
<i>Marriott Library, University of Utah</i>	
Master Naturalist: Deserts	2011
<i>University of Utah, Department of Parks, Recreation, and Tourism</i>	
AMS Summer Policy Colloquium (Funded Participant)	2009
<i>American Meteorological Society Policy Program, Washington, DC</i>	
Wallace Stegner: His Life and Legacy	2009
<i>Wallace Stegner Center, University of Utah, S.J. Quinney College of Law</i>	
Level II Avalanche Course	2009
<i>Friends of Utah Avalanche Center</i>	
Glen Canyon Institute Water Conference	2008
<i>Glen Canyon Institute, Salt Lake City, UT</i>	
Bridging the Gap Between Research and Forecasting	2008
<i>Mountain Weather Workshop: AMS/COMET/MSU, Whistler, BC</i>	
Alternative Energy: Seeking Climate Change Solutions	2008
<i>Wallace Stegner Center, University of Utah, S.J. Quinney College of Law</i>	
The Colorado River Compact in the 21st Century: Time for Change?	2006
<i>Wallace Stegner Center, University of Utah, S.J. Quinney College of Law</i>	
STORM Project, Studies in Weather Analysis and Forecasting (Funded Participant)	2002
<i>University of Northern Iowa, Department of Earth Science</i>	

COMPUTER SKILLS:

Programming/Computing Languages:

MATLAB, Fortran, C, C++, IDL, HTML, Maple

Meteorological Applications:

NMAP, GARP, NSHARP

GIS Application:

ArcGIS, Envi

Video Editing:

Pinnacle Studio HD, iMovie

Writing/Presenting/Editing:

Excel, Word, Powerpoint, Emacs, Vi, LaTeX/LyX, Jabref, Framemaker, Photoshop, InDesign, and others

Learning Platforms:

Canvas, Blackboard

Operating Systems:

Unix, Linux, Windows

SOCIETY MEMBERSHIPS:

American Geophysical Union

American Meteorological Society

American Meteorological Society, Utah Chapter

National Association of Geoscience Teachers

Utah Society for Environmental Education