

CURRICULUM VITAE

KRISTIE J. FRANZ

Assistant Professor
Department of Geological and Atmospheric Sciences
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EDUCATION

- Ph.D.** **Civil Engineering**, University of California, Irvine, 2006.
M.S. **Hydrology and Water Resources**, University of Arizona, Tucson, AZ, 2001.
B.S. **Geology**, University of Wisconsin-Eau Claire, 1995, graduated magna cum laude.

RESEARCH INTERESTS

Snow and rainfall-runoff modeling, climate impacts on the hydrologic cycle, probabilistic streamflow and water supply forecasting, forecast verification, and hydrologic applications of remotely sensed data.

EXPERIENCE

Assistant Professor

Department of Geological and Atmospheric Sciences, Iowa States University (08/06-present)

Graduate Research Assistant

Dept. of Civil and Environmental Engineering, University of California, Irvine (09/03-07/06)
Dept. of Hydrology and Water Resources, University of Arizona (06/00-08/03)

Research Consultant

Riverside Technology, Inc. (09/03-09/04)

Teaching Assistant

Dept. of Civil and Environmental Engineering, University of California, Irvine, (03/04-06/04).
Dept. of Hydrology and Water Resources, University of Arizona, (01/01-05/02).

Laboratory Manager and Site Operator II

Terra-Kleen Response Group, Inc., San Diego, CA (03/97-06/99)

Environmental Technician I

Solid Waste Department, Brevard County, Melbourne, FL (11/96-03/97)

Hydrogeologist and Environmental Specialist

Wisconsin Department of Natural Resources, Eau Claire, WI (04/94-06/96)

Student Researcher

Geology Department University of Wisconsin-Eau Claire (09/95-05/96)

PUBLICATIONS

Refereed Publications

- Franz, K. J., T. Hogue, S. Sorooshian: Snow model verification using ensemble prediction and operational benchmarks, *in press, Journal of Hydrometeorology*.
Franz, K. J., T. Hogue, S. Sorooshian: Operational snow modeling: Addressing the challenges of an energy balance model for National Weather Service forecasts, *in press, Journal of Hydrology*.
Schaake, J, K. Franz, A. Bradley, and R. Buizza, 2006: The Hydrologic Ensemble Prediction Experiment (HEPEX), *Hydrology and Earth System Science Discussions*, 3, 3321–3332.
Franz, K. J., N. Ajami, J. Schaake, and R. Buizza, 2005: Hydrologic Ensemble Prediction Experiment Focuses on Reliable Forecasts, *Eos*, 86(25).

Franz, K. J., H. C. Hartmann, S. Sorooshian, and R. Bales, 2003: Verification of National Weather Service ensemble streamflow predictions for water supply forecasting in the Colorado river basin. *Journal of Hydrometeorology*, 4(6), 1105-1118.

Non-Refereed Publications

Schaake, J., K. Franz, A. Bradley, and R. Buizza, 2005: The Hydrologic Ensemble Prediction Experiment (HEPEX), *GEWEX News*, 15(4).

Franz, K. J., Characterization of the comparative skill of conceptual and physically-based snow models for streamflow prediction, Ph.D. Dissertation, Dept. of Civil and Environmental Engineering, University of California, Irvine, 2006.

Franz, K. J., H. C. Hartmann, S. Sorooshian, and R. Bales, Evaluation of National Weather Service Ensemble Streamflow Predictions for the Colorado River Basin, Technical Report, HWR No. 03-010, Dept. of Hydrology and Water Resources, University of Arizona, 2003.

Franz, K. J. and S. Sorooshian, Verification of National Weather Service Probabilistic Hydrologic Forecasts, Final Report Submitted to the National Weather Service under Grant Number 40-AA-NW-217447, Dept. of Hydrology and Water Resources, University of Arizona, November 2002.

Franz, K. J., Evaluation of National Weather Service Ensemble Streamflow Prediction (ESP) Water-Supply Forecasts, M.S. Thesis, Dept. of Hydrology and Water Resources, University of Arizona, 2001.

SELECT PRESENTATIONS AND CONFERENCE PROCEEDINGS

Molotch, N., K. Franz, T. Hogue, and S. Margulis, Assimilation of MODIS snow cover products into operational hydrologic forecast models, MODIS/VIIRS science team meeting, May, 2008.

Franz, K.J., Advancing operational snow modeling systems for improved streamflow forecasts, Department of Earth Sciences, University of Northern Colorado, Greeley, CO, April 11, 2008, (*INVITED SEMINAR*).

Hogue, T.S. and K.J. Franz, Hydrologic Tools and Products for Advancing Operational Forecast Systems, Presentation to the NWS Hydrology Laboratory and River Forecast Centers, Silver Spring, MD, March 3, 2008.

Hogue, T.S., K.J. Franz, and J. Barco, Addressing Parameter Uncertainty in Regional Forecast Basins Using Similarity Indices, American Geophysical Union fall meeting, San Francisco, CA, December 2007.

Franz, K.J., W.A. Gallus, M. Baker, K.A. Jungbluth, W.S. Lincoln, Short-term streamflow prediction for a small Midwestern watershed presented at the 3rd HEPEX workshop, Stresa, Italy, June 2007.

Hogue, T.S., K.J. Franz, S. Lopez, J. Barco, Addressing Parameter Uncertainty in Regional Forecast Basins Using Similarity Indices, presented at the 3rd HEPEX workshop, Stresa, Italy, June 2007.

Franz, K. J., T. Hogue, and S. Sorooshian, The Potential for Application of a Physically-based Snow Model in Hydrologic Forecasting, American Geophysical Union fall meeting, San Francisco, CA, December 2006.

Franz, K., Characterization of the comparative skill of conceptual and physically-based snow models for streamflow prediction (*INVITED SEMINAR*). National Oceanic and Atmospheric Administration Earth Systems Research Laboratory, Boulder, Colorado, October 11, 2006.

Franz, K. J., T. Hogue, and S. Sorooshian, Application of a satellite precipitation product for snow modeling and hydrologic forecasting (*INVITED POSTER*). American Geophysical Union fall meeting, San Francisco, CA, December 2005.

Franz, K. J., T. Hogue, and S. Sorooshian, Snow model evaluations for ensemble streamflow forecasting, National Weather Service Western Region Hydrology Research to Operations Meeting, Park City, Utah, October 2005.

Franz, K. J., J. S. Schaake, R. Buizza, and S. Mullen, The proposed THORPEX/HEPEX Hydrologic Applications Project, 2nd HEPEX workshop, NCAR, Boulder, CO, July 2005.

Franz, K. J., T. Hogue, and S. Sorooshian, Evaluation of snow model complexity within the NWS streamflow forecasting system. American Meteorological Society Annual Meeting, 16th Conference on Climate Variability and Change, San Diego, CA, January 2005.

- Franz, K. J., S. Sorooshian, E. Welles, D. Brandon, S. Townsend, and L. Teixeira, Ensemble Streamflow Forecast Verification: Putting research into practice. American Geophysical Union fall meeting, San Francisco, CA, December 2003.
- Hartmann H. C., T. C. Pagano, K. Franz, S. Sorooshian, and R. Bales, Helping Water Resource Managers Understand Hydroclimatic Variability and Forecasts, American Meteorological Society Annual Meeting, Long Beach, CA, February 2003.
- Franz, K. J., Evaluation of Operational NWS Ensemble Streamflow Predictions, National Weather Service Statistical Hydrology Workshop, Portland Oregon, September 16-20, 2002.
- Hartmann, H. C., T. C. Pagano, K. Franz, S. Sorooshian, and R. Bales, Evaluating the Uncertainty of Probabilistic Predictions: Techniques, Applications and Implications, American Geophysical Union spring meeting, Washington, DC, May 2002.
- Franz, K. J., H. C. Hartmann, S. Sorooshian, and R. Bales, Evaluation of Colorado River Basin Ensemble Streamflow Predictions, Preprints: American Meteorological Society Annual Meeting, 16th Conference on Hydrology, Orlando, FL, January 2002, J109-J112.
- Franz, K. J., J. A. Schels, and K. M. Syverson, "Glacial Geology of the Chippewa Moraine Ice Age National Scientific Reserve, Wisconsin", Poster Abstracts: Wisconsin Academy of Sciences, Arts, and Letters, 126th Annual Conference, University of Wisconsin-Steven Point, April 1996.

FUNDED PROPOSALS

Agency: University Corporation for Atmospheric Research. Title: Investigating the HEC-HMS model for watershed-scale flood prediction in the Des Moines Weather Forecast Office region. Solicitation: COMET Partners Program. Principal Investigator with partner K. Jungbluth (NOAA/NWS). Project period: 08/08-07/09.

Organization: Center for Global and Regional Environmental Research (CGRER), The University of Iowa. Title: Climate Change Impacts on Cold Season Hydrologic Processes and Spring Soil Moisture Recharge in the Upper Midwest. Solicitation: Seed Grant Program – 2008. Principal Investigator. Project period: 07/08-06/09

Agency: National Aeronautics and Space Administration (NASA). Title: Assimilation of MODIS snow cover products into operational hydrologic forecast models. Solicitation: NNH06ZDA001N-EOS Earth System Science Research Using Data and Products from TERRA, AQUA, and ACRIMSAT Satellites. Co-investigator with N. Molotch, S. Margulis, and T. Hogue (UCLA). Project period: 12/07-11/10.

Agency: National Oceanic and Atmospheric Administration, National Weather Service (NOAA/NWS). Title: Data Assimilation in Operational Watershed Models for Short and Long-term Hydrologic Forecasting. Solicitation: Hydrologic Research – CFDA #11.462. Co-investigator with T. Hogue and S. Margulis (UCLA). Project period: 11/07-10/10.

FELLOWSHIPS AND AWARDS

- Newkirk Center for Science and Society Fellowship, University of California, Irvine (07/05)
- AMS Science and Policy Colloquium Fellowship, June 1-10, 2003, Washington, D.C. (06/03)
- Verification of National Weather Service Probabilistic Hydrologic Forecasts, NWS Grant Number 40-AA-NW-217447, Dept. of Hydrology and Water Resources, University of Arizona (06/02)
- HWR Award of Excellence, Poster Presentation, Departmental Symposium, Univ. of Arizona (04/02)
- HWR Award of Excellence, Oral Presentation, Departmental Symposium, Univ. of Arizona (04/01)
- Kenneth D. Schmidt 2000 Summer Field Camp Stipend, University of Arizona (05/00)
- National Science Foundation Trainee Fellowship, University of Arizona (01/00-06/00)
- Graduate College Fellowship, University of Arizona (09/99-06/00)
- Casper Foundation College Scholarship, University of Wisconsin-Eau Claire (09/91-05/95)

PROFESSIONAL AFFILIATIONS

Member of American Geophysical Union (AGU)
Member of American Meteorological Society (AMS)

ACADEMIC AND PROFESSIONAL SERVICE

Upper Mississippi River Basin Observatory (UMBRO) Hydrologic Modeling Task Force (08/07-present)
Hydrologic Ensemble Prediction Experiment (HEPEX) science steering group (07/05-present) and webmaster (01/05-present)
Manuscript Reviewer: Journal of Applied Meteorology and Climatology, Journal of Hydrometeorology, Water Resources Research, Journal of Spatial Hydrology, Advances in Atmospheric Sciences, Bulletin of the American Meteorological Society, Journal of Hydrology
Proposal Reviewer: NOAA Climate Prediction Program for the Americas (CPPA), NOAA Small Business Innovation Research Program (SBIR), ISU Iowa Agriculture and Home Economics Experiment Station (IAHEES), Iowa Science Foundation
Improving the Quantitative Training of Earth Science Graduate Students NSF Workshop participant, Carleton College, 02/06

ADVISING

M.S. Thesis Students: Scott Lincoln, Environmental Science (F07-present); Phil Butcher, Meteorology, (F07-present), Kayla Conrad, Meteorology (F08-present)
Undergraduate Research Students: Lisa Stewart (AY06-07); Jesse Reese (F07); Kayla Conrad (F07)
Committee member: Shih-Yu (Simon) Wang, (Ph.D. Meteorology), John Baranick (M.S. Agronomy), Jenq-dar (Paul) Tsay (Ph.D. Meteorology), Jason Carroll (M.S. Civil Engineering), Adam Clark (Ph.D. Meteorology), Kevin He (Ph.D. Civil Engineering, UCLA)

COURSES TAUGHT

Geology 416X/516X, Hydrologic Modeling and Analysis, ISU
Environmental Science 402/502, Watershed Hydrology, ISU
Meteorology 160X, Water Resources of the World, ISU
Environmental Science 690, Seminar in Environmental Science, ISU

ADDITIONAL TRAINING

- Large Class Faculty Learning Community, CELT, ISU, AY07-08
- National Weather Service River Forecast System Training, University of California, Irvine, (04/05).
- University of Arizona Leadership Enrichment Seminar Series – Level 1, Spring Semester 2003.
- AMS Land-Surface Climate Interaction short course, Orlando, FL, (01/02).
- Conversational Spanish, 6 credits, University of California, San Diego Extension
- Terra Kleen 40-hr Hazardous Waste Operations Training Course, San Diego, CA (03/97).
- EPA Hazardous Materials 24-Hour Training, Nicolet Area Technical College, Rhinelander, WI (06/95).