

KATHERINE KRISTIN HIRSCHBOECK

Associate Professor of Climatology
Laboratory of Tree-Ring Research &
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CHRONOLOGY OF EDUCATION

Rosary College, River Forest, Illinois (attended 1969-70)
University of Wisconsin - Madison, B.S. in Geography, minor in Geology (1973)
University of Wisconsin - Madison, M.S. in Geography (1975)
University of Arizona, Ph.D. in Geosciences, minor in Geography (1985)

MAJOR RESEARCH & TEACHING FIELDS

Climatology -- with emphasis on variations in synoptic atmospheric circulation systems, the climatology of extreme events (floods and droughts), and mechanisms of climatic change.
Hydroclimatology and surface water hydrology -- with emphasis on flood analysis, flood hydroclimatology, and the response of geomorphic and hydrologic systems to spatial and temporal variations in climate.
Dendroclimatology -- with emphasis on synoptic dendroclimatology and the link between atmospheric circulation processes and regional tree-growth patterns.

EMPLOYMENT

Associate Professor of Climatology, Laboratory of Tree-Ring Research, University of Arizona, 1991 - present.

Other University of Arizona Appointments:

Chair, Global Change Graduate Interdisciplinary Program, University of Arizona, 2004 - present
Joint Appointments in the following departments: Hydrology and Water Resources (1991 – present), Geography and Regional Development (1992 –present), Atmospheric Sciences (2004 – present)

Member of Arid Lands Resources Sciences Graduate Interdisciplinary Program (GIDP) Faculty
Member of Global Change Committee / Global Change Minor GIDP Faculty Member

Associate Professor, Department of Geography and Anthropology, Louisiana State University, August 1990 - August 1991.

Assistant Professor, Department of Geography and Anthropology, Louisiana State University, August 1985 - August 1990.

Instructor, Department of Geography and Anthropology, Louisiana State University, August 1984 - August 1985.

Visiting Assistant Professor, Department of Geography, University of Oklahoma, January-May, 1984.

HONORS AND AWARDS

Provost's General Education Teaching Award, 2003.

American Meteorological Society Editor's Award for the *Journal of Hydrometeorology*, 2001.

Warren Nystrom Award, 1987. Association of American Geographers.

RECENT AND SELECTED PUBLICATIONS

- Hirschboeck, K.K.** 2003. Respecting the drainage divide: a perspective on hydrological change and scale: *Water Resources Update*, no. 126, p 54-59.
- Michaud, J.D, **Hirschboeck, K.K.** and Winchell, M., 2001. Regional variations in small-basin floods in the United States: *Water Resources Research*, v. 37, no. 5, p. 1405-1416.
- Hirschboeck, K.K.**, Ely, L. and Maddox, R.A., 2000, Hydroclimatology of meteorologic floods, in Wohl, Ellen, ed, *Inland Flood Hazards: Human, Riparian and Aquatic Communities*, Cambridge University Press p. 39-72..
- House, P.K., and **Hirschboeck, K.K.**, 1997, Hydroclimatological and paleohydrological context of extreme winter flooding in Arizona, 1993: in Larson, R.A., and Slosson, J.E., eds., *Storm-Induced Geological Hazards: Case Histories from the 1992-1993 Winter Storm in Southern California and Arizona*: Boulder, Colorado, Geological Society of America *Reviews in Engineering Geology*, v. XI, p. 1-24.
- Hirschboeck, K.K.**, Ni, Fenbiao, Wood, M.L., Woodhouse, C.A., 1996, Synoptic dendroclimatology: Overview and prospectus, in Dean, J.S., Meko, D.M. and Swetnam, T.W., eds., *Tree Rings*,
- Hirschboeck, K.K.**, 1988. Flood hydroclimatology, in Baker, V.R., Kochel, R.C. and Patton, P.C., eds., *Flood Geomorphology*, John Wiley & Sons, 27-49.
- Hirschboeck, K.K.**, 1987. Catastrophic flooding and atmospheric circulation anomalies, in Mayer, L. and Nash, D.B., eds., *Catastrophic Flooding*, Allen & Unwin, 23-56.

GRANTS AND CONTRACTS (recent and selected)

Climate Assessment of the Southwest (CLIMAS) -- ongoing projects:

- Tools for climate-informed flood mitigation: integrating flood hydroclimatology and paleodata into flood warning and floodplain management applications
- Southwest TreeFlow Project : The goal of this project is to transfer the knowledge and record length that paleodata provide into useful tools for hydrologic decision making

Improved Tools for Drought Planning and Management, R.F. Shangraw (Lead P.I., ASU) with P.I.'s: P. Miller (ASU), K.K. Hirschboeck (UA), T.Makinen (East Valley Water Forum), J. Block (ASU) Arizona Water Institute (ongoing)

The Current Drought In Context: A Tree-Ring Based Evaluation of Water Supply Variability for the Salt-Verde River Basin P.I. K.K. Hirschboeck , Co.I. D. M. Meko The Salt River Project. (in progress)

Fractional Snow Cover Estimation in Complex Alpine Forested Environments Using Landsat and MODIS (Supervising P.I. for graduate student submission by E. Czyzowska) NASA Earth System Science (ESS) Graduate Student Fellowship (in progress)

A Tree-Ring Based Hydroclimatic Assessment of Synchronous Extreme Streamflow Episodes in the Upper Colorado and Salt-Verde River Basins 2003-2004 P.I. K.K. Hirschboeck, Co.I. D. M. Meko The Salt River Project.

Katherine K. Hirschboeck is an associate professor of climatology at the Laboratory of Tree-Ring Research of the University of Arizona where she is involved in both teaching and research in climatology and climatic variability. She has interdisciplinary ties with the departments of Hydrology and Water Resources (Joint Appointment), Atmospheric Sciences (Joint Appointment), Geography and Regional Development (Joint Appointment), Geosciences, Office of Arid Lands Studies, and the Institute for the Study of Planet Earth. In addition, she holds an administrative position as Chair of the University of Arizona's Global Change Graduate Interdisciplinary Program. Hirschboeck's research involves the climatology and hydroclimatology of extreme events – especially floods and paleofloods -- which she analyzes from the perspective of their meteorological and climatological causes and their long-term variability. She also uses synoptic climatology and dendroclimatology to link tree-ring responses to anomalous atmospheric circulation patterns.