

## ELIZABETH A. WENTZ

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### EDUCATION

<b>Doctor of Philosophy, Geography</b>	1997
The Pennsylvania State University, University Park, Pennsylvania	
<b>Master of Arts, Geography</b>	1989
The Ohio State University, Columbus, Ohio	
<b>Bachelor of Science with Honors, Mathematics</b>	1987
The Ohio State University, Columbus, Ohio	

### PROFESSIONAL EXPERIENCE

<b>Associate Professor</b>	2004 - present
Department of Geography, Arizona State University	
<b>Assistant Professor</b>	1997 - 2004
Department of Geography, Arizona State University	
<b>Teaching Assistant, Research Assistant, and Instructor</b>	1993 - 1997
Department of Geography, The Pennsylvania State University	
<b>Associate in Research</b>	1991 - 1992
Organization for Tropical Studies, Duke University	
<b>Research Associate</b>	1989 - 1991
Department of Natural Resources Science, The University of Rhode Island	
<b>Research Assistant</b>	1988 - 1989
Department of Geography, The Ohio State University	
<b>College Intern</b>	1986 - 1988
The Ohio Department of Natural Resources	

### FUNDED AND PENDING RESEARCH PROPOSALS

<b>Decision Center for a Desert City: Science and Policy of Climate Uncertainty</b>	November 2004 -
Co-PI, NSF, \$7,497,949	
<b>Monitoring Human-Environment Interactions in a Controlled Landscaping Experiment</b>	January 2004 - December 2004
Co-PI, College of Liberal Arts and Sciences Multi-investigator grant, \$11,000	
<b>Investigation of Rapid Urbanization Processes Using ASTER, MODIS, and Landsat Data</b>	July 2004-July 2007
Co-PI, NASA, \$782,225	
<b>Central Arizona – Phoenix, Long Term Ecological Research (CAP – LTER)</b>	October 2002 - present
Co-PI, NSF, \$819,990	
<b>Reconstruction of Fire History Patterns in the Greater Phoenix Area</b>	January 2001-December 2001
PI, College of Liberal Arts and Science Multi-investigator grant, \$16,140	

**Phoenix: The Im/Migrant Nexus** January 2001-December 2001  
Co-PI, College of Liberal Arts and Science Multi-investigator grant, \$14,000

**The Arizona 20-20 Challenge** January 1999-September 1999  
Co-PI, Arizona Office of Tourism, \$7,000

**Dynamics of an Urban Carbon Dioxide Dome** January 1999- December 2001  
Co-PI, NSF, \$498,367

**Development and Testing a Trivariate Shape Measure for use in Geographical Analysis** March 1999  
College of Liberal Arts and Science Travel Grant, Arizona State University, \$830

**Learning Physical Geography Through Interactive Laboratory Exercises** July 1998-July 1999  
College of Liberal Arts and Science, Arizona State University, \$11,631

## REFEREED PUBLICATIONS

- [Koerner, Brenda, Elizabeth Wentz, and Robert Balling, Jr. 2004. \*\*Projected carbon dioxide \(CO<sub>2</sub>\) for the year 2020 in Phoenix, Arizona.\*\* \*Environmental Management\* 33 Supplement: S222-S228.](#)
- [Miller, Harvey and Elizabeth Wentz 2003. \*\*Geographic Representation in Geographic Information Systems and Spatial Analysis.\*\* \*Annals of the Association of American Geographers\* 93\(3\) 574-594.](#)
- [Wentz, Elizabeth A., Aimee F. Campbell, Robert Houston 2003. \*\*Implementing and testing two methods of spatio-temporal data interpolation applied to tracking the movement of monkeys.\*\* Submitted to \*International Journal of Geographical Information Science\* 17\(7\): 623 – 645.](#)
- Day, Thomas A., Patricia Gober, Fusheng S. Xiong, and Elizabeth A. Wentz 2002. **Temporal patterns in near-surface CO<sub>2</sub> concentrations over contrasting vegetation types in the Phoenix metropolitan area.** *Agricultural and Forest Meteorology* 110(3): 229-245.
- Wentz, Elizabeth A., Patricia Gober, Robert C. Balling, Jr., Thomas Day 2002. **Spatial Patterns and Determinants of Carbon Dioxide in an Urban Environment** *The Annals of the Association of American Geographers* 92(1): 15-28.
- Wentz, Elizabeth A., Brandon J. Vogt, and Michael Kuby 2001. **Use of geographic information systems for extraction of peak and canyon locations in the State of Arizona.** *Cartography and Geographic Information Science.* 28(4): 259-271.
- Kuby, Michael, Elizabeth A. Wentz, Brandon J. Vogt, and Randall Virden 2001. **The Arizona 20-20 Challenge.** *Tourism Geographies.* 3(4):454-473.
- Wentz, Elizabeth A. and Barbara Trapido-Lurie 2001. **Structured Internships in Geographic Information Science Education.** *Journal of Geography* 100(4): 140-144.
- Wentz, Elizabeth A. 2000. **Development and Testing of a Trivariate Shape Measure for Geographic Analysis** *Geographical Analysis* 32(2): 95-112.
- Wentz, Elizabeth A., JoAnn C. Vendor, and Cynthia A Brewer 1999. **An Evaluation of Teaching Introductory Geography using Computer-based Tools.** *Journal of Geography in Higher Education* 23(2) 167-179.
- Peuquet, Donna J. and Elizabeth A. Wentz 1994. **An Approach for Time-Based Analysis of Spatiotemporal Data,** *Advances in GIS Research* 1:489-504.

## REFEREED MANUSCRIPTS UNDER REVIEW

- Wentz, Elizabeth and William Stefanov (*under review*). **Comparison of satellite imagery and aerial photography interpretation of land use and land cover in Phoenix, Arizona USA.** *Computers, Environment, and Urban Systems.*
- Edsall, Robert M. and Elizabeth A. Wentz (*under review*). **Comparing strategies for active learning in introductory undergraduate geography courses: physical models vs. computer visualization.** *Journal of Geography in Higher Education*

Williams, Emily A. and Elizabeth A. Wentz (*under review*). **Polygon Pattern Analysis based on Type, Orientation, Size, and Shape** *Geographical Analysis*

#### NON-REFEREED PUBLICATIONS

- Wentz, Elizabeth A. 2003. Review of **Modelling Scale in Geographical Information Science**, N. Tate and Atkinson (eds) *Geographical Analysis* 35(2):177-178.
- Wentz, Elizabeth A. 2002. Review of **Getting Started with Geographic Information Systems Third Edition** Keith Clarke *International Journal of Geographical Information Science* 16(2): 204-205.
- Wentz, Elizabeth, Sharolyn Anderson, William L. Stefanov, and John Briggs 2001. **Desert Fire History and Effects on the Phoenix, Arizona, Metropolitan Area**. IEEE/ISPRS Joint Workshop on Remote Sensing and Data Fusion over Urban Areas, University of Rome La Sapienza, November 8-9, 2001, 154-158.
- Hepner, George, Carolyn Merry, Dawn Wright, Elizabeth Wentz, Sharolyn Anderson, Amy Budge 2000. **Remotely Acquired Data and Information in GIScience**. UCGIS Research Initiative.
- Burns, Elizabeth K. and Elizabeth A. Wentz 1999. **Progress Toward Integrating Spatial Technologies for Urban Infrastructure Management** ACSM Proceedings.
- Wentz, Elizabeth A. and Joseph A. Bishop 1998. **Geographic Information System and Database Management at a Tropical Rainforest Research Station** Republished in *GIS Methodologies for Developing Conservation Strategies*, 1998, Basil G. Savitsky and Thomas E. Lacher Jr. (eds), Columbia University Press, New York, 83-95
- Brewer, Cynthia A. and Elizabeth A. Wentz 1997. **A Simplified GIS Interface for Learning Introductory Geomorphology**. *Geocal*, 16: 6-10.
- Wentz, Elizabeth A. 1997. **Shape Analysis and GIS**. *Auto-Carto* 13, 204-213.
- Wentz, Elizabeth A. 1996. Book review of **Innovations in GIS** Michael F. Worboys (ed.) 1994. In *Annals of the Association of American Geographers* 86:376-377.
- Wentz, Elizabeth A. and Joseph A. Bishop 1995. **Geographic Information System and Database Management at a Tropical Rainforest Research Station**. *Biology International* 30:10-19.
- Campbell, Aimee F. and Elizabeth A. Wentz 1993. **Monkeying Around with ARC/INFO: GIS Methods in the Study of Primate Ecology and Conservation**, *ARCNews* Redlands, CA: Environmental Systems Research Institute, Inc. Reprinted in *Liana* Durham, NC: Organization for Tropical Studies.
- Wentz, Elizabeth A. and Marco Vinicio Castro Campos 1993. **Management of Research Areas at a Biological Field Station**, in *Proceedings of the Thirteenth Annual ESRI User Conference*, Redlands, CA: Environmental Systems Research Institute, Inc., Vol. 1, 303-314.
- Castro Campos, Marco Vinicio and Elizabeth A. Bishop (Wentz) 1992. **Geographic Information Systems in Tropical Rain Forest Research**, in *ARC/INFO Maps 1992*, Redlands, CA: Environmental Systems Research Institute, Inc., 75.
- Hale, Stephen and Elizabeth (Wentz) Bishop 1991. **Managing an Estuarine Data Base with DBMS and a GIS**, in *RIGIS News*.
- Smith, Suzanne and Elizabeth (Wentz) Bishop 1991. **ARC/INFO and the Mac**, *RIGIS News*.
- Bishop (Wentz), Elizabeth A. 1991. **The World Prodigy Oil Spill, Rhode Island**, in *ARC/INFO Maps 1990*, 58.
- August, Peter, Stephen Hale, Elizabeth A. (Wentz) Bishop and Eric Sheffer 1990. **The Contributions of GIS Technology to Environmental Disaster Management - A Case Study of the World Prodigy Oil Spill, Rhode Island**, in *Proceedings, Oil Spills Management and Legislative Implications*, edited by Malcolm L. Spaulding and Mark Reed, 366-374. Newport, RI: American Society of Civil Engineers. Reprinted in *Proceedings NCGS '90*, 91-98. Houston, TX.
- Marble, Duane F. and Elizabeth A. Wentz 1989. **Standardized Benchmarks for Geographic Information Systems: A Progress Report**, in *ARC/INFO User Conference Proceedings*: Redlands,

## RESEARCH PRESENTATIONS

<b>Projected carbon dioxide (CO<sub>2</sub>) for the year 2020 in Phoenix, Arizona</b> Annual meeting of the Association of American Geographers New Orleans, LA	March 2003
<b>Atmospheric Carbon Dioxide in an Urban Environment</b> Department of Geological Sciences Arizona State University, Tempe, AZ	February 2003
<b>GIS Research Opportunities in Health</b> Department of Exercise and Wellness Arizona State University East, Mesa, AZ	November 2002
<b>University Consortium for Geographic Information Science Model Curriculum and the ASU Curriculum</b> Arizona Geographic Information Council Annual Meeting, Mesa, AZ	August 2002
<b>GIS Applications for Open Space Planning and Acquisition</b> APRA Open Space Conference, Phoenix, AZ	February 2002
<b>Desert Fire History and Effects on the Phoenix, Arizona, Metropolitan Area</b> IEEE/ISPRS Joint Workshop on Remote Sensing and Data Fusion over Urban Areas University of Rome La Sapienza, November 8-9, 2001, 154-158.	November 2001
<b>Spatial Patterns and Determinants of Carbon Dioxide in an Urban Environment</b> Annual meeting of the Association of American Geographers New York, New York	February 2001
<b>Implementing and testing two methods of spatio-temporal data interpolation applied to tracking the movement of monkeys (colloquium presentation)</b> Department of Mathematics and Statistics, Arizona State University Department of Geography, University of Colorado – Boulder Department of Geology, University of Mississippi, Oxford, MS Department of Environmental Fluid Dynamics, Arizona State University	April 2004 February 2001 March 2001 November 2001
<b>Implementing and testing two methods of spatio-temporal data interpolation applied to tracking the movement of monkeys (conference presentation)</b> GIScience 2000, Savannah, Georgia	October 2000
<b>GIS research and teaching from a North American perspective</b> Department of Human Geography, University of Oslo	September 2000
<b>Development of techniques for spatio-temporal data interpolation</b> Department of Geography, University of Utrecht, The Netherlands	October 1999
<b>The Role of Internships in GIS Education</b> Annual meeting of the Association of American Geographers Honolulu, Hawaii	March 1999
<b>Challenges in GIS Education</b> Arizona Pacific Coast Geographers Annual Meeting, Flagstaff, Arizona Arizona Geographic Information Council Annual Meeting, Arizona State University, Tempe, Arizona	October 1998 August 1998
<b>Teaching Concepts of Physical Geography with GIS-based tools</b> Annual meeting of the Association of American Geographers Honolulu, Hawaii Geographic Alliance GeoFest, Phoenix, Arizona	March 1999 September 1998
<b>GIS User Interface Design for Applications in Archaeology</b> Annual meeting of the Association of American Geographers Boston, Massachusetts	March 1998

**Shape Analysis and GIS**

Department of Geography, University of Utah

January 1999

Department of Fluid Dynamics, Arizona State University

November 1998

Department of Geography, University of Arizona

February 1998

Auto-Carto 13, Seattle, Washington

April 1997

**Advancing the Analytical Capabilities of GIS**

Annual meeting of the Association of American Geographers

April 1997

Fort Worth, Texas

- Student Use of Simplified GIS Interface for Learning Introductory Geomorphology**  
 Annual meeting of the Association of American Geographers April 1997  
 Fort Worth, Texas  
 Presented by Cynthia Brewer  
 Research in conjunction with Cynthia Brewer and JoAnn Vender
- An Approach for Time-Based Analysis of Spatiotemporal Data**  
 Sixth International Symposium on Spatial Data Handling September 1994  
 Edinburgh, Scotland  
 Presented with Donna Peuquet
- Space, Shape, and Time: The shape of things to come**  
 Annual meeting of the Association of American Geographers March 1994  
 San Francisco, California
- GIS and Research in Tropical Biology**  
 International Union of Biological Sciences, La Selva, Costa Rica October 1992  
 Organization of Biological Field Stations, La Selva, Costa Rica October 1992
- GIS and Environmental Disaster Management: *World Prodigy Oil Spill***  
 Department of Geography, The Ohio State University, Columbus, Ohio November 1990  
 Emergency Response Workshop, Innovative Emergency Management, Inc. October 1990  
 Salt Lake City, Utah
- National Computer Graphics Association, Houston, Texas August 1990
- Exploring Pattern in Complex Multidimensional Environmental Datasets**  
 Department of Natural Resources Science, The University of Rhode Island April 1990  
 Kingston, Rhode Island
- GIS and Management of the Narragansett Bay**  
 American Society for Photogrammetry and Remote Sensing New England Chapter February 1990  
 Kingston, Rhode Island

### HONORS and AWARDS

- Faculty sponsor** January-May 2000  
 ASU College of Liberal Arts and Sciences Interdisciplinary Fellows Program  
 For Brian Gratton, Professor of History
- Student Paper Award** April 1997  
 Auto-Carto 13, Seattle, Washington
- GIS Specialty Group Student Paper Award** April 1997  
 Annual meeting of the Association of American Geographers, Fort Worth Texas
- Graduate Research Fellowship**  
 Earth Systems Science Center, The Pennsylvania State University August 1994 - August 1995
- GIS Specialty Group Student Paper Award** March 1994  
 Annual meeting of the Association of American Geographers, San Francisco, California
- Student Travel Award** September 1993  
 National Center for Geographical Information and Analysis  
 GIS and Environmental Modeling Conference, Breckenridge, Colorado
- Student Travel Award** November 1988  
 National Research Council, GIS in Geoscience Conference, Denver, Colorado

## POSTER PRESENTATIONS

- Desert Fire History and Effects on the Phoenix, Arizona, Metropolitan Area** January 2002  
Arizona State University CAP-LTER, Tempe, AZ
- Use of geographic information systems for extracting peaks and canyons** March 2000  
Association of American Geographers, Pittsburgh, PA
- Progress toward Integrating Spatial Technologies for Urban Infrastructure Management,** August 1998  
Arizona Geographic Information Council Annual Conference, Arizona State University

## COURSES

**Geographic Information Technologies:** This course is intended as an introduction to modern geographic information technologies and mapping sciences for sophomore/junior undergraduates. These technologies include cartography, geographic information systems, remote sensing, global positioning systems, and statistical analysis. Enrollment ranges from 40-60 students per semester.

**GIS I:** Introduction to the conceptual aspects of GIS. Laboratory exercises utilize ArcView software. Students are typically junior or senior level geography majors. Enrollment ranges from 25-60.

**GIS III:** GIS programming concepts. Student exercises involve programming in Visual Basic and Arc Objects. Students are typically seniors or graduate students in geography. Enrollment ranges from 10-15.

**Geographic Information Analysis:** Advanced spatial analysis. Course objectives are to cover the basics of advanced spatial data analysis. Topics include point pattern analysis, line descriptors, spatial autocorrelation, and geostatistical kriging. Typical students are advanced undergraduate or graduate students from a variety of disciplines (e.g., geography, plant biology, engineering). Enrollment ranges from 15-18 students.

**Geography Internship:** Supervising students on the progression of their internships. Course involves resume and cover letter writing and emphasizes other job searching skills. Students are typically senior geography majors. Enrollment ranges from 3-15 students.

**Introductory Physical Geography:** Course covers basic concepts in physical geography from climatology to geomorphology. Enrollment, 250 students.

**Special Topics in Geographic Information Science Research:** Research seminar on various aspects of research in geographic information science. Enrollment has ranged from 5 to 15 students depending on topic.

## GUEST LECTURES

- GIS in an Urban Environment** February 2003  
GIS Studio, School of Planning and Landscape Architecture, Arizona State University
- GIS and Natural Resources** November 1999  
Natural Resources, Department of Geography, Arizona State University
- GIS and Transportation** September 1997  
Pavement Management, Department of Civil Engineering, Arizona State University

<b>Monitoring the Earth Systems</b>	March 1996
Geographic Perspectives on Humans and the Environment, Department of Geography, Pennsylvania State University	
<b>Ecosystems and their Processes</b>	November 1994
Introduction to Physical Geography, Department of Geography, Pennsylvania State University	
<b>Introduction to Spatial Data Models</b>	October 1993
Spatial Data Systems, Department of Geography, Pennsylvania State University	
<b>Introduction to ARC/INFO modules</b>	February 1993
Spatial Data Systems, Department of Geography, Pennsylvania State University	
<b>Topographic Modeling and Visibility Analysis</b>	October 1993
Introduction to Digital Terrain Models, Department of Geography, Pennsylvania State University	

### MEMBERSHIPS

Association of Pacific Coast Geographers (APCG)	1998 - present
American Congress on Surveying and Mapping (ACSM)	1997 - present
Arizona Geographic Information Council (AGIC)	1997 - present
Association of American Geographers (AAG)	1993 - present
GIS Specialty Group	

### JOURNAL REVIEWER

<i>International Journal of Remote Sensing</i>	2003 - present
<i>The Professional Geographer</i>	2003 - present
<i>The Annals of the Association of American Geographers</i>	2003 - present
<i>Computers, Environment, and Urban Systems</i>	2003 - present
<i>Journal of Geographical Systems</i>	2001 - present
<i>Geographical Analysis</i> (editorial board member from 2003-present)	2000 - present
<i>IEEE Computer Society Transaction on Knowledge and Data Engineering</i>	2000 - present
<i>International Journal of Geographical Information Science</i>	1999 - present

### OTHER SERVICE ACTIVITIES

Proposal reviewer for the <i>National Science Foundation</i>	2003 - present
Member of the GIS Core Curriculum Group	
University Consortium for Geographic Information Science	June 1998 - present
Board member for <i>Discovering Geographic Knowledge in Data-Rich Environments</i>	January - March 1999
NCGIA-Varenus Specialist Meeting	
Reviewer for Thirty-Second Annual Hawai'i International	1998
Conference on System Sciences Minitrack on "GIS and Decision Support"	
Graduate Student Representative to the GIS Specialty Group	1993 - 1994
Association of American Geographers	
Graduate Student Representative	1988 - 1989
Department of Geography, The Ohio State University	

## **CHAIR OF STUDENT COMMITTEE**

Corene Matayas, MA 2001, co-chair with Randall Cerveny  
Sharolyn Anderson, PhD 2002  
Karen Blevins, MA 2002  
Seth Paine, MA 2002  
Jennifer McCulley, GIS graduate certificate, 2003  
Robert Murray, Undergraduate honors thesis, 2003  
Emily Atwood, MA in progress  
Eva Reid, MA in progress  
Michael Zoldak, PhD in progress  
David Nelson, PhD in progress  
David Lucio, MA in progress  
Shea Lemar, MA in progress  
Cayla Buelle, MA in progress

## **MEMBER OF STUDENT COMMITTEE**

Charlene Howard McDonald, MA 1998, Elizabeth Burns chair  
Jordon Chamberlain, MA 1998, Rodrigo Sierra chair  
Steven Gordon, PhD 1999, Ronald Dorn chair  
Curtis Sommer, MA 1999, Michael Kuby chair  
Antonio Matamoros, MA 2000, Rodrigo Sierra chair  
Mary Richardson, MA 2000, Interdisciplinary Studies, Andrew Smith chair  
Michael Henze, MA 2000, Ronald Dorn chair  
Brandon Vogt, MA 2000, Ronald Dorn chair  
Sean Whitcom, MS Plant Biology, 2002, Jean Stutz chair  
Santiago Lopez, MS 2002, Patricia Fall chair  
Jana Heisler, M.S. Plant Biology, 2003, John Briggs chair  
Colleen Garrity, Ph.D. in progress, Randall Cerveny chair  
Brandon Vogt, PhD. in progress, Robert Edsall chair  
Timothy Leslie, MA in progress, Breandan O hUallachain chair  
Ernesto Camelo de Castro, PhD Plant Biology, in progress, Jeff Klopatek chair  
Brenda Koerner, PhD Plant Biology, in progress, Jeff Klopatek chair  
Lisa Young, PhD in progress, Robert Edsall chair  
Christopher Eisenger, PhD Geological Sciences, in progress, Phil Christensen chair  
Brandon Adair, MA in progress, Robert Edsall chair  
Sarah Boyle, PhD Biology, in progress, Andrew Smith chair