

MICHAELA BUENEMANN
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EDUCATION

- Ph.D. Geography. University of Oklahoma, Norman, OK. GPA: 4.0/4.0. May 2007.
Dissertation Topic: Quantifying the Spatio-Temporal Dynamics of Woody Plant Encroachment: An Integrative Remote Sensing, GIS, and Spatial Modeling Approach (Advisor: Dr. Hans-Joachim Spaeth).
- B.A. Geography, Spanish, Media Sciences. Universität-Gesamthochschule Paderborn, Germany. June 1999.

EMPLOYMENT

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| Adjunct Lecturer | The University of Arizona, Tucson, AZ, 2007-Present |
| Instructor | James Madison University, Harrisonburg, VA, 2005-2007 |
| Teaching Assistant | University of Oklahoma, Norman, OK, 2000-2005 |
| Research Assistant | Universität-Gesamthochschule Paderborn, Germany, 1997-1999 |

REFEREED PUBLICATIONS IN PREPARATION

- Buenemann, M. and T. Rashed. Coupling Multiple Endmember Spectral Mixture Analysis and Fuzzy Logic for the Assessment of Woody Plant Encroachment. *Remote Sensing of Environment (Dissertation Chapter 4; Anticipated Submission Date: 03/10/2008)*.
- Buenemann, M. Predicting Landscape Vulnerability to Woody Plant Encroachment: A Review, Comparison, and Evaluation of Three Spatial Models. *Transactions in GIS (Dissertation Chapter 5; Anticipated Submission Date: 03/31/2008)*.
- Buenemann, M. Why We Don't Know More About Woody Plant Encroachment: A Lack of Reporting Standards and Interdisciplinary Collaboration. *Frontiers in Ecology and the Environment (Dissertation Chapter 3; Anticipated Submission Date: 04/28/2008)*.
- Buenemann, M. Woody Plant Encroachment: An Annotated Bibliography. *Frontiers in Ecology and the Environment (Dissertation Appendix A; Anticipated Submission Date: 04/28/2008)*.
- Buenemann, M. Modeling the Spatio-Temporal Dynamics of Woody Plant Encroachment: An Integrative Remote Sensing, GIS, and Spatial Modeling Approach. *Annals of the Association of American Geographers (Dissertation Summary; Anticipated Submission Date: 05/06/2008)*.

PRESENTATIONS AT CONFERENCES & SYMPOSIA

- Buenemann, M.: Accuracy Assessment of Subpixel Land Cover Fraction Estimates Derived from Medium Spatial Resolution Satellite Imagery: An Approach for Dryland Ecosystems. 2008 Association of American Geographers Annual Meeting, Boston, MA. April 14-19, 2008.
- Buenemann, M.: Geospatial Modeling of Subtle Land Cover Changes: Overview and Outlook. 2008 Arizona-Nevada Academy of Science Annual Meeting, Phoenix, AZ. March 29, 2008.
- Buenemann, M.: Quantifying the Spatio-Temporal Dynamics of Woody Plant Encroachment: An Integrative Remote Sensing, GIS, and Spatial Modeling Approach. Research Insights in Semiarid Ecosystems, RISE, Fourth Annual Symposium, Tucson, AZ. October 6, 2007.
- Buenemann, M.: Characterizing the Phenology of Drylands: Challenges and Potentials of Current and Future Remote Sensing Approaches. Southwest U.S. Region, American Society for Photogrammetry and Remote Sensing Symposium ('Towards a Southwest Phenology Network'), Tucson, AZ. October 5, 2007.
- Buenemann, M.: Vulnerability of Drylands to Creeping Environmental Phenomena: An Assessment using Three Spatial Models. 2007 Association of American Geographers Annual Meeting, San Francisco, CA. April 17-21, 2007.
- Buenemann, M.: Why We Don't Know More About Woody Plant Encroachment: A Lack of Interdisciplinary Collaboration and Participation by Geographers. 2006 Association of American Geographers Annual Meeting, Chicago, IL. March 7-11, 2006.
- Buenemann, M.: Identifying Sites for Riparian Ecosystem Restoration: Challenges and Potentials of Hyperspectral and LIDAR Imagery. Canaan Valley Institute, Blacks Run Restoration Project Implementation Meeting, Harrisonburg, VA. January 24, 2006.
- Buenemann, M.: A Coupled Remote Sensing, GIS, and Spatial Modeling Approach for the Assessment of Woody Plant Encroachment. Shenandoah Valley GIS Users Conference, Harrisonburg, VA. January 20, 2006.
- Buenemann, M.: Modeling the Spatio-Temporal Dynamics of Woody Plant Encroachment Through an Integrative Remote Sensing, GIS, and Spatial Modeling Approach. 2005 Association of American Geographers Annual Meeting, Denver, CO. April 5-9, 2005.
- Buenemann, M.: Characterization of Woody Plant Encroachment using Multiple Endmember Spectral Mixture Analysis of Multi-Temporal Landsat Thematic Mapper Data. 2004 Mid-South Region of the American Society for Photogrammetry and Remote Sensing / Southwestern Association of American Geographers Annual Meeting, Nacogdoches, TX. November 10-13, 2004.

OTHER CONFERENCE PARTICIPATION

- Session Chair "Validation and Assessment Issues in Remote Sensing." AAG Annual Meeting. 2008.
- Discussant "Remote Sensing Applications in Grassland Ecosystems." AAG Annual Meeting. 2008.
- Session Chair "Forest Dynamics." MS-ASPRS/SWAAG Annual Meeting. 2004.

INVITED PRESENTATIONS

Northern Arizona University, Department of Biological Sciences. "Battle on the Range: Spatio-Temporal Dynamics of Woody Plant Encroachment in the Fish Creek Watershed, OK." 02/14/2008.

Northern Arizona University, ASPRS Student Chapter. "A Geographic Information Science and Technology Approach to Monitoring and Predicting Subtle Land Cover Changes in Drylands." 02/07/2008.

GRANTS, FELLOWSHIPS & SCHOLARSHIPS

Robberson Travel Grant. Graduate College, University of Oklahoma. 2005.

Francis E. "Gene" Lortz Memorial Scholarship. American Society for Photogrammetry and Remote Sensing Central Region. 2005.

GSS Conference and Creative Exhibition Grant. Graduate Student Senate, University of Oklahoma. 2004.

Robberson Research Grant. Graduate College, University of Oklahoma. 2004.

Center for Spatially Integrated Social Science Workshop "Introduction to Spatial Pattern Analysis in a GIS Environment." University of California, Santa Barbara. Participant. 2004.

Intergraph GeoMedia Professional User Training. Intergraph, Huntsville, Alabama. Participant. 2004.

Graduate College Alumni Fellowship, University of Oklahoma. 2001-2005.

Graduate Teaching Assistantship. Department of Geography, University of Oklahoma. 2000-2005.

Ralph and Margaret Olson Geography Scholarship. Department of Geography, University of Oklahoma. 2000.

Oklahoma NASA Space Grant Scholarship. 2000.

Research Assistantship. Department of Geography, Universität Paderborn, Germany. 1997-1999.

HONORS & AWARDS

University of Oklahoma Outstanding Graduate Teaching Assistant Award. 2005.

Francis E. "Gene" Lortz Memorial Scholarship. American Society for Photogrammetry and Remote Sensing, Central Region. 2005.

John M. Caldwell Award for Excellence in Graduate Student Teaching. Department of Geography, University of Oklahoma. 2004.

First Place, Southwestern Association of American Geographers Student Paper Competition Award. 2004.

Exchange Student from the Universität-Gesamthochschule Paderborn, Germany at the University of Oklahoma. 1999-2000.

RESEARCH EXPERIENCE

Project Coordinator. Department of Geography, University of Oklahoma. Project: Design and development of a web-enabled 3D-GIS model of historical sites in Luxor, Egypt. 2004-2005.

Research Assistant. Department of Geography, University of Oklahoma. Project: Ground validation of satellite imagery in Oklahoma. 2000.

Research Assistant / Intern. German Remote Sensing Data Center, Oberpfaffenhofen, Germany. Projects: Desertification management in Ethiopia (Rift Valley); GIS Aral Sea; Visualization of Remote Sensing Data through Generation of a 3D-Animation: Virtual Flight across East Westphalia. 1999.

Research Assistant. Department of Geography, Universität-Gesamthochschule Paderborn, Germany. Various projects, including the planning of field trips for geography students; and the development, execution, and statistical analysis of field surveys. 1997-1999.

Intern. AAA Travel Agency, Westerkappeln, Germany. 1997.

Field work in various settings in Germany, Austria, Norway, Egypt, Nicaragua, Costa Rica, and the United States. Field work included activities such as geomorphological mapping, land evaluation, collection of calibration and reference data for remote sensing studies, vegetation and soil sampling; and interviews.

TEACHING EXPERIENCE

2007-Present. Department of Geography and Regional Development, University of Arizona.

Earth's Environment: Introduction to Physical Geography (NATS 101)

Our Diverse Biosphere (GEOG 220)

Field Study in Environmental Geography (GEOG 303)

Environmental and Resource Geography (GEOG 461)

2005-2007. Department of Integrated Science and Technology, James Madison University.

Introduction to Physical Geography, Lecture & Lab (GEOG 210)

Introduction to Remote Sensing, Lecture & Lab (GEOG 285)

Advanced Remote Sensing, Lecture & Lab (GEOG 385)

U.S. National Parks (GEOG 450)

The World's Drylands: Land Degradation and Sustainable Development (GEOG 450)

Field Studies (GEOG 315)

Special Studies in Geography (GEOG 490)

International Renewable Energy Perspectives and Applications (ISAT 480, GSCI 104)

International Field Experience in Nicaragua and Costa Rica (various ISAT/GEOG)

2000-2005. Department of Geography, University of Oklahoma.

Physical Geography, Lecture & Lab (GEOG 1114)

PROFESSIONAL SERVICE & OUTREACH

2007-Present, University of Arizona

University Activities

University of Arizona Student Chapter of the American Society for Photogrammetry and Remote Sensing. Faculty Advisor; helped initiate Student Chapter. 2007-Present.

2005-2007, James Madison University

Departmental Activities

Environment, Information Systems, and Global Studies Teams. 2005-2007.

Geospatial Science Task Force. 2005-2006.

College Activities

Organized and contributed to the College of Integrated Science and Technology Open House activities of the Geographic Science Program. 2005-2006.

2000-2005, University of Oklahoma

Departmental Activities

Association of Geography Graduate Students (AGGS). Initiated movement to found a registered geography student organization at the University of Oklahoma and helped write constitutional guidelines. Vice President, 2002-2003; Member, 2002-2005.

College Activities

College of Geosciences EduTech Advisory Committee. Student Representative. 2000-2005.

University Activities

Graduate Council. Student Representative. 2003-2005.

Graduate Student Senate. Senator. 2001-2003.

Other Professional Service

Peer Reviewer for *Remote Sensing of Environment*.

Outreach

Instructor "Pre-Collegiate Enrichment Program." 2002.

Presenter, Instructor "GIS Day at the University of Oklahoma." 2000, 2004.

PROFESSIONAL AFFILIATIONS

Ecological Society of America (ESA). 2007-Present.

Society for Range Management (SRM). 2007-Present.

Association for Arid Land Studies (AALS). 2004-Present.

Verband der Geographen an Deutschen Hochschulen (VGDH). 2004-Present.

World Habitat Society GmbH (WHS). 2004-Present.

American Society for Photogrammetry and Remote Sensing (ASPRS). 2004-Present.

Association of American Geographers (AAG). 2000-Present.

Gamma Theta Upsilon (GTU), Geographical Honors Society. 2000-Present.

LANGUAGE SKILLS

German – Reading, Writing, Speaking fluent

English – Reading, Writing, Speaking fluent

French – Reading fluent, Writing and Speaking functional

Spanish – Reading fluent, Writing and Speaking functional

Italian – Reading, Writing, Speaking basic

COMPUTER SKILLS

GIS/Spatial Analysis: ArcGIS, ARC/INFO, ArcView, IDRISI, FRAGSTATS*ARC,
Geomedia Professional, GeoDa, GWR

Remote Sensing: ERDAS Imagine, ENVI

Cartography: Adobe Photoshop, Adobe Illustrator, Corel Draw

Statistics: Excel, SAS, SPSS, CANOCO

Programming: IDL, AML

Web Design: Dreamweaver, Microsoft FrontPage

General: MS Office, UNIX/Linux, MS Windows, Mac OS

Learning Management Systems: BlackBoard, Desire2Learn, WebCT