

*Curriculum vitae*  
*February 3, 2011*  
**Eileen G. Ernenwein, PhD**

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**Academic Degrees:**

- Ph.D. in Environmental Dynamics (2008)
- M. A. in Geography, University of Denver (2002)
- B. A. in Anthropology, University of Denver (2000)
- B. A. in Geography, University of Denver (2000)

**Present Positions:**

- Research Associate, Center For Advanced Spatial Technologies, University of Arkansas.
- Adjunct Faculty, Department of Geosciences, East Tennessee State University
- Co-Owner, Foxfire Geophysics, LLC

**Academic Interests:**

- Archaeological Geophysics and Remote Sensing
- Ground-penetrating Radar
- Archaeogeophysical data integration and fusion
- GIS applications in archaeology

**Awards Received:**

- Association of American Geographers/National Council for Geographic Education Award for Excellence of Scholarship (2000)
- Ruth Underhill Senior Anthropology Prize, University of Denver (2000)
- Arts, Humanities and Social Sciences Graduation Prize, (2000)
- Faculty of Natural Sciences, Mathematics, and Engineering Undergraduate Research Award (1999-2000)
- Partners in Scholarship Grant, University of Denver (1999)

**Honorary Societies:**

- Phi Beta Kappa (member since May 2000)
- Sigma Xi (member since March 2004)

**Recent Grant-Funded Projects:**

- *Streamlined Archaeo-Geophysical Data Processing and Integration for DoD Field Use*, funded by the U.S. Department of Defense through the Environmental Security and Technology Certification Program (ESTCP, awarded March 2006).
- *Computing and Retrieving 3D Archaeological Structures from Subsurface Surveying*, funded by the National Science Foundation (NSF), 2005-2007.
- *New Approaches to the Use and Integration of Multi-Sensor Remote Sensing for Historic Resource Identification and Evaluation*, funded by the U.S. Department of Defense through the Strategic Environmental Research and Development Program (SERDP CS-1263), 2002-2006.

**Peer-Reviewed Publications:**

Ernenwein, E. G.  
2009 Integration of multidimensional archaeogeophysical data using supervised and unsupervised classification. *Near Surface Geophysics* 7(3):147-158, DOI: 10.3997/1873-0604.2009004.

- Wachsmann, S., R. K. Dunn, J. R. Hale, R. L. Hohlfelder, L. B. Conyers, E. G. Ernenwein, P. Sheets, M. L. P. Blot, F. Castro and D. Davis  
2009 The Palaeo-Environmental Contexts of Three Possible Phoenician Anchorages in Portugal. *The International Journal of Nautical Archaeology* 38(2):pp-pp, DOI: 10.1111/j.1095-9270.2009.00224.x.
- Conyers, L. B., E. G. Ernenwein, M. Grealy and K. M. Lowe  
2008 Electromagnetic Conductivity Mapping for Site Prediction in Meandering River Floodplains. *Archaeological Prospection* 15(2):81-91, DOI: 10.1002/arp.326.
- Ernenwein, E. G.  
2008 A Geophysical View of Pueblo Escondido: Implications for the Pithouse to Pueblo Transition in the Jornada Mogollon. *Bulletin of the Texas Archaeological Society* 79: 125-145.
- Ernenwein, E. G. and K. L. Kvamme  
2008 Data Processing Issues in Large-Area GPR Surveys: Correcting Trace Misalignments, Edge Discontinuities, and Striping. *Archaeological Prospection*: 15(2):133-149, DOI: 10.1002/arp.331.
- Ernenwein, E. G.  
2006 Imaging in the Ground-Penetrating Radar near-Field Zone: A Case Study from New Mexico, USA. *Archaeological Prospection* 13(2):154-156, DOI: 10.1002/arp.286.
- Kvamme, K. L., E. G. Ernenwein and C. J. Markussen  
2006 Robotic Total Station for Microtopographic Mapping: An Example from the Northern Great Plains. *Archaeological Prospection* 13(2):91-102, DOI: 10.1002/arp.270.
- Conyers, L. B., E. G. Ernenwein and L. Bedal  
2002 Ground-Penetrating Radar (GPR) Mapping as a Method for Planning Excavation Strategies, Petra, Jordan. *E-tiquity* 1: <http://mysite.du.edu/~lconyer/petra/>.
- Conyers, L. B., E. G. Ernenwein and L. Bedal  
2002 Ground-Penetrating Radar Discovery at Petra, Jordan. *Antiquity* 76:339-340.

#### **Papers Presented at National and International Meetings:**

- Hargrave, M. L., E. G. Ernenwein, J. Cothren, W. Johnston and W. F. Limp  
2010 Streamlined Archaeogeophysical Data Processing and Integration for DoD Field Use. Paper presented at the Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C.
- Ernenwein, E. G., M. L. Hargrave, J. J. Lockhart, G. Avery and H. F. Gregory  
2010 New Findings at Presidio Los Adaes, Louisiana: Results of Large-Area Geophysical Survey and Targeted Excavations. Paper presented at the 75th Annual Meeting of the Society for American Archaeology, St. Louis, Missouri.
- Hargrave, M. L., E. G. Ernenwein, J. J. Lockhart, H. F. Gregory and G. Avery  
2010 Evaluating 18<sup>th</sup> Century Maps of Presidio Los Adaes Using Geophysical Data. Paper presented at the Annual Meeting of the Society for Historical Archaeology, Amelia Island, Florida.
- Hargrave, M. L., E. G. Ernenwein, J. Cothren, W. Johnston and W. F. Limp  
2009 Streamlined Archaeogeophysical Data Processing and Integration for DoD Field Use: Results of Large-Area Geophysical Survey at Presidio Los Adaes, Louisiana. Paper

presented at the Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C.

- Ernenwein, E. G., M. L. Hargrave, G. Avery and H. F. Gregory  
2009 Geophysical Survey at Presidio Los Adaes, Louisiana. Paper presented at the 74th Annual Meeting of the Society for American Archaeology, Atlanta, Georgia.
- Cothren, J. and E. G. Ernenwein  
2009 A new grid balancing method for geophysics data. Paper presented at the Computer Applications in Archaeology Conference, Williamsburg, VA.
- Ernenwein, E. G., M. L. Hargrave, J. Cothren, W. Johnston and W. F. Limp  
2008 Streamlined Archaeogeophysical Data Processing and Integration for DoD Field Use: Results of Preliminary Field Studies. Paper presented at the Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C.
- Hargrave, M. L., E. G. Ernenwein, G. Avery and H. F. Gregory  
2008 Geophysical Investigations at Presidio Los Adaes, Louisiana. Paper presented at the 65th annual meeting of the Southeastern Archaeological Conference, Charlotte, NC.
- Cothren, J., C. Goodmaster, A. Barnes, E. G. Ernenwein, A. Vranich, W. F. Limp and A. Payne  
2008 Fusion of Three-Dimensional Data at Tiwanaku: An Approach to Spatial Data Integration. Paper presented at the Computer Applications in Archaeology Conference, Budapest, Hungary.
- Ernenwein, E. G. and L. B. Conyers  
2008 Ground-Penetrating Radar in the Lower Market, Petra, Jordan. Paper presented at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, BC, Canada.
- Koons, M. L. and E. G. Ernenwein  
2008 Geophysical Archaeology at Tiwanaku, Bolivia. Paper presented at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, BC, Canada.
- Cothren, J., W. Johnston, E. G. Ernenwein, W. F. Limp and M. L. Hargrave  
2007 Integrated Multi-Sensor Characterization of Archaeological Sites Using Archaeomapper. Paper presented at the Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C.
- Ernenwein, E. G. and M. L. Koons  
2007 Subsurface Imaging in Tiwanaku's Monumental Core. Paper presented at the Technology and Archaeology Workshop, Dumbarton Oaks.
- Ernenwein, E. G., K. L. Kvamme and M. L. Hargrave  
2007 Systematic Anomaly Testing at Pueblo Escondido, New Mexico. Paper presented at the 72nd Annual Meeting of the Society for American Archaeology, Austin, TX.
- Herrmann, J., E. G. Ernenwein and M. Koons  
2007 Geophysics at Tiwanaku: Results from the 2005-2006 Field Seasons. Paper presented at the 72nd annual meeting of the Society for American Archaeology, Austin, TX.
- Ernenwein, E. G.  
2006 From Pueblo to Pithouse: New Findings at "Pueblo Escondido," New Mexico. Paper presented at the Computer Applications in Archaeology Conference, Fargo, ND.
- Koons, M. L., E. G. Ernenwein and K. M. Lowe

2006 Results and Interpretations of the Technological Research at Tiwanaku Bolivia. Paper presented at the 71st Annual Meeting of the Society for American Archaeology, San Juan, Puerto Rico.

Ernenwein, E. G. and M. Koons

2005 Multidimensional Geophysics at Tiwanaku: Results from the First Season. Paper presented at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah.

Ernenwein, E. G. and K. L. Kvamme

2005 Geophysical Data Fusion: Combining Sensor Outputs through Graphical, Mathematical, and Statistical Approaches. Paper presented at the Computer Applications in Archaeology Conference, Tomar, Portugal.

Ernenwein, E. G., K. L. Kvamme, W. F. Limp and M. L. Hargrave

2005 Fusion of Geophysical Data for Subsurface Archaeological Detection and Mapping. Paper presented at the Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C.

Hargrave, M. L., K. L. Kvamme and E. G. Ernenwein

2005 Methodological Issues in Ground Truthing the Results of Remote Sensing Surveys. Paper presented at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City, UT.

Ernenwein, E. G. and K. L. Kvamme

2004 Archaeo-Geophysical, Panchromatic, and Multispectral Data Synergy at Army City, Kansas. Paper presented at the Annual Meeting of the Society for Historical and Underwater Archaeology, St. Louis, MO.

Ernenwein, E. G. and K. L. Kvamme

2004 Ground-Penetrating Radar at the Landscape Scale: New Challenges and Possible Solutions. Paper presented at the Archaeological Sciences of the Americas Symposium, The University of Arizona, Tucson, AZ.

Kvamme, K. L., E. G. Ernenwein, W. F. Limp and M. L. Hargrave

2004 Data Fusion of Archaeological Remote Sensing from Ground-, Air- and Space-Based Platforms. Paper presented at the Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C.

Kvamme, K. L., J. A. C. Kvamme, E. G. Ernenwein and C. J. Markussen

2004 Four Years of Geophysical Prospecting at Double Ditch State Historic Site, North Dakota. Paper presented at the 62nd Annual Plains Anthropological Conference, Billings, Montana.

Markussen, C. J., E. G. Ernenwein, S. A. Ahler and K. L. Kvamme

2004 Mapping Microtopography at Double Ditch State Historic Site, North Dakota. Paper presented at the 62nd Annual Plains Anthropological Conference, Billings, Montana.

Ernenwein, E. G.

2003 High-Tech Archaeology: Multi-Dimensional Remote Sensing at Army City, Kansas: Fusing Ground, Air, and Satellite Data. Paper presented at the 87th Annual Meeting of the Arkansas Academy of Science, Fayetteville, AR.

Ernenwein, E. G.

2003 Large-Area GPR Survey at Army City Kansas: Methods, Results, and Interpretations. Paper presented at the 61st Annual Plains Anthropological Conference,

Fayetteville, AR.

- Ernenwein, E. G., K. L. Kvamme, W. F. Limp, D. Harmon, M. L. Hargrave, T. Sever and L. E. Somers  
2003 Multi-Dimensional Remote Sensing: Fusion Ground, Air, and Satellite Data from Archaeological Sites. Paper presented at the 68th Annual Meeting of the Society for American Archaeology, Milwaukee, WI.
- Kvamme, K. L., E. G. Ernenwein, T. Sever, D. Harmon, W. F. Limp, M. L. Hargrave and L. E. Somers  
2003 Archaeo-Geophysical, Panchromatic, Thermal, and Multispectral Data Synergy at Four DoD and DoE Archaeological Sites. Paper presented at the Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C.
- Ernenwein, E. G. and K. L. Kvamme  
2002 Multi-Dimensional Remote Sensing at Army City, Kansas: A SERDP Project Fusing Ground, Air, and Satellite Data. Paper presented at the 60th Annual Plains Anthropological Conference, Oklahoma City, OK.
- Limp, F. W., K. L. Kvamme, E. G. Ernenwein, D. Harmon, M. L. Hargrave, T. Sever and L. E. Somers  
2002 Multi-Dimensional Remote Sensing: A SERDP Project Fusing Ground, Air, and Satellite Data from Archaeological Sites. Paper presented at the Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C.
- Ernenwein, E. G.  
2001 GIS Applications in Site Survey and Predictive Modeling, Rocky Mountain National Park. Paper presented at the 67th Annual Meeting of the Society for American Archaeology, New Orleans, LA.

#### **Other Reports and Publications:**

- Ernenwein, E. G.  
2008 *Advancing Archaeological Geophysics: Interpreting the Archaeological Landscape, Ground-Penetrating Radar Data Processing, and Multi-Sensor Fusion*. unpublished Ph. D. dissertation, University of Arkansas.
- Daniilidis, K., W. F. Limp, A. Vranich, J. Shi, G. Biros, A. Barnes, J. Cothren, E. G. Ernenwein, C. Goodmaster, A. Payne and Q. Zhu  
2007 *Computing and Retrieving 3d Archaeological Structures from Subsurface Surveying*, Unpublished report submitted to the National Science Foundation.
- Kvamme, K. L., E. G. Ernenwein, M. L. Hargrave, T. Sever, D. Harmon, F. Limp, B. Howell, M. Koons and J. Tullis  
2006 *New Approaches to the Use and Integration of Multi-Sensor Remote Sensing for Historic Resource Identification and Evaluation*. Unpublished report submitted to Strategic Environmental Resource Development Program (SERDP), Washington, D.C.
- Lukowski, P. D., E. Perez, M. L. Hargrave, K. L. Kvamme and E. G. Ernenwein  
2006 *Ground-Truthing Remote Sensing Data at the Escondida Site (La 458), Otero County, New Mexico*, Unpublished report submitted to Engineer Research and Development Center Construction Engineering Research Laboratory, Champaign, Illinois.
- Ernenwein, E. G. and K. L. Kvamme

2004        *Geophysical Investigations for Subsurface Fracture Detection in the Savoy Experimental Watershed, Arkansas*, Report submitted to Indrajeet Chaubey, Department of Biological and Agricultural Engineering, University of Arkansas, Fayetteville.

Ernenwein, E. G. and K. L. Kvamme

2003        *Ground-penetrating Radar Investigations in the Vicinity of the Alfred Corum Graves, Near Kemmerer, Wyoming*, Report submitted to Tom Larson, LTA, Inc. Laramie, WY.

Ernenwein, E. G.

2003        Quick-Take Review: IDRISI Kilimanjaro. *Geoworld* August, 2008.

Ernenwein, E. G.

2002        *Establishing a Method for Locating Buried Oxbow Lake Deposits Using Electrical Conductivity, Sacramento Valley, California*. Unpublished Master's thesis, Department of Geography, University of Denver, Denver, Colorado.

Ernenwein, E. G.

2002        Quick-Take Review: Surfer 8. *Geoworld* December, 2002.

Kvamme, K. L. and E. G. Ernenwein

2002        *Geo-Radar Investigations at the Fort Riley Post Cemetery, Kansas.*, Unpublished report submitted to Directorate of Environment and Safety, U.S. Department of Defense, Fort Riley, Kansas.