

VITAE

Michael N. DeMers
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DATE: 3/21/2021

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EDUCATION

GCERT, Online Teaching and Learning, NMSU, 2007

Ph.D., Geography, University of Kansas, 1985

M.Phil., Geography, University of Kansas, 1983

M.S., Geography, University of North Dakota, 1980

B.S.Ed., Earth Science, University of North Dakota, 1974

CERTIFICATES

2019 Certificate of Accomplishment Population Connection Educators Leadership Institute

2016- Present: Quality Matters Certified Course Evaluator

2015-2021: Geographic Information System Professional (GISP)

2013 National Certificate of Course Recognition - Fundamentals of Geographic Information Systems (Quality Matters).

Teachers Teaching Teachers GIS (T3G) Institute Certificate (Esri)

2012 Introduction to Scripting in Unity (Digital Tutors)

Introduction to Unity (Digital Tutors)

2011 Blended Learning: Using the HyFlex Course and Design Process (Sloan-C)

2010 Learning ArcGIS Desktop (ESRI)

Creating and Editing Geodatabase Topology with ArcGIS Desktop (ESRI)

2009 Planning for a GIS (ESRI)

POSITIONS HELD

2021-present, Professor Emeritus, New Mexico State University

2011-2021, Professor, Geography, New Mexico State University

2009-2012, Courtesy Professor, Survey Engineering, Texas A&M, Corpus Christi.

1996-2011, Associate Professor, Geography, New Mexico State University

2000-2004, Department Head, Geography, New Mexico State University

1993-1996, Assistant Professor, Geography, New Mexico State University Assistant Professor, Survey Engineering, New Mexico State University

1991-1993, Courtesy Assistant Professor, Graduate Program in Environmental Science, The Ohio State University

1986-1993, Assistant Professor, Geography, The Ohio State University

1985-1986, Assistant Professor, Geography, North Texas State University

1983-1984, Assistant Professor, Dept. of Geography, Mankato State University

SCHOLARSHIPS AND AWARDS

Albert Nelson Marquis Lifetime Achievement Honoree, 2018

Albert Nelson Marquis Who's Who Humanitarian Award, 2018

New Mexico Geographic Information Council (NMGIC) Wheeler Peak Lifetime Achievement Award, 2018

Quality Matters (QM) Certification, Geography 481 (Fundamentals of GIS), 2013

Distinguished Alumni Award, University of North Dakota, 2013

Teaching Innovation Award, New Mexico State University Teaching Academy, 2011

James R. Anderson Medal of Honor in Applied Geography, 2010

Albert Nelson Marquis Who's Who in America, 2006

Albert Nelson Marquis Who's Who in Social Science Education, 2004

Highest Award for Achievement, Dale Carnegie Training, Fall, 2003.

Certificate of Completion, Dale Carnegie Course, Fall, 2003.

Teacher of the Year Nomination, Arts and Sciences, Ohio State, Spring, 1990.

PUBLICATIONS: BOOKS / MONOGRAPHS / AND BOOK CHAPTERS

DeMers, Michael N. 2019. Heutagogy, Personal Learning Environments, and Multi-Path Entry into GIS Education, Chapter 21, pp. 2284-298 in Walkington, H., J. Hill, and S. Dyer, Handbook for Learning and Teaching in Geography, Edward Elgar Publishing, Cheltenham, UK.

DeMers, Michael N., 2018. Structural Gamification of a University GIS Course. pp 195-208 In: Ahlqvist O., Schlieder C. (eds) Geogames and Geoplay. Advances in Geographic Information Science. Springer

DeMers, Michael N., 2017, GIS in Action, New York, John Wiley & Sons, Inc.

DeMers, Michael N., 2016. Zoogeography, International Encyclopedia of Geography: People, the Earth, Environment, and Technology, John Wiley & Sons, Ltd. CHOICE Outstanding Academic Title
[<http://dx.doi.org/10.1002/9781118786352.wbieg0769>].

DeMers, Michael N., 2016. Geography education, Digital and Online Trends, International Encyclopedia of Geography: People, the Earth, Environment, and Technology, John Wiley & Sons, Ltd. CHOICE Outstanding Academic Title
[<http://dx.doi.org/10.1002/9781118786352.wbieg0672>].

DeMers, Michael N., 2016. Cartesian Coordinate Systems, International Encyclopedia of Geography: People, the Earth, Environment, and Technology, John Wiley & Sons, Ltd. CHOICE Outstanding Academic Title
[<http://dx.doi.org/10.1002/9781118786352.wbieg0221>].

Dugas, D.P, M.N. DeMers, J.C. Greenlee, W.G. Whitford and A. Klimaszewski-Patterson. 2012. Rapid Evaluation of Arid Lands (REAL): A Methodology. In D.P. Albert & G.R. Dodds (Eds.), *Emerging Methods and Multidisciplinary Application in Geospatial Research*. Hershey, PA: IGI Global. 143-161.

DeMers, Michael N. 2011. Subject Matter Content Creation for Second Life Delivery: Teaching GIS in Second Life, Chapter 22 (pages 414-432) in James Braman and Giovonni Vincenti (eds), *Teaching Through Multi-User Virtual Environments: Applying Dynamic Elements to the Modern Classroom*.

- DeMers, Michael N. 2010. Linking MUVE Education and Best Educational Practices, Chapter in James Braman and Giovanni Vincenti (eds). *Multi-User Virtual Environments for the Classroom: Practical Approaches to Teaching in Virtual Worlds* (chapter 1).
- DeMers, Michael N., 2010. GIS Modeling in Raster, Arabic Translation, New York, John Wiley & Sons, Inc.
- DeMers, Michael N., 2010, "A Hitchhiker's Guide to Geographic Information Systems: A Multidisciplinary Introduction to the Subject," Chapter 4, pp. 25-40, *The Manual of GIS*, American Society for Photogrammetry and Remote Sensing
- DeMers, Michael N., *GIS For Dummies*, 2008, New York, John Wiley and Sons, Inc.
- DiBiase, David, Michael DeMers, Ann Johnson, Karen Kemp, Ann Taylor Luck, Brandon Plew and Elizabeth Wentz, 2008, "Supporting Curriculum Development in Geographic Information Science and Technology: The GIS&T Body of Knowledge," Chapter 62, pp. 1261-1271, *The Manual of GIS*, American Society for Photogrammetry and Remote Sensing.
- DeMers, Michael N., 2008. Fundamentals of Geographic Information Systems, 4th Edition, New York, John Wiley and Sons, Inc., 2008.
- DiBiase, D., Michael DeMers, et al., (Editors), 2006. *The Geographic Information Science and Technology Body of Knowledge*, Association of American Geographers, Monograph.
- DeMers, Michael N., 2005. *Fundamentals of Geographic Information Systems*, 2nd Edition, Chinese Translation., New York, John Wiley & Sons, Inc.
- DeMers, Michael N., 2004. Fundamentals of Geographic Information Systems, 3rd Edition, New York, John Wiley and Sons, Inc.
- DeMers, Michael N., 2003. Fundamentals of Geographic Information Systems, 2nd Edition (Revised with integrated laboratory exercises), New York, John Wiley and Sons, Inc., 636 pp.
- DeMers, Michael N., 2002. GIS Modeling in Raster, New York, John Wiley & Sons, Inc.
- DeMers, Michael N., 2000. Fundamentals of Geographic Information Systems, 2nd Edition, New York, John Wiley and Sons, Inc., 512 pp.
- DeMers, Michael N., 2000, Exercises in Geographic Information Systems, New York, John Wiley & Sons, Inc., 141 pp.
- DeMers, Michael N., 1999, Fundamentals of Geographic Information Systems, Moscow, (Russian Translation), John Wiley & Sons, Inc.

DeMers, Michael N., 1997. Fundamentals of Geographic Information Systems, New York, John Wiley and Sons, Inc., 504 pp.

DeMers, Michael N., 1995. "A GIS Design for Preserving Phytodiversity," in Tod F. Stuessy (ed.) *Sampling the Green World: Innovative Concepts and Methods for Collection, Preservation and Storage of Phytodiversity*, Columbia University Press, New York.

DeMers, Michael N., 1994. "Requirements Analysis for GIS LESA Implementation," in Frederick Steiner, James Pease and Robert Coughlin (eds.) *A Decade With LESA, Selected Papers from the 1st National LESA Conference, March 26-28, 1993, Kansas City, MO.*

PUBLICATIONS: ARTICLES AND PROCEEDINGS (in preparation)

DeMers, Michael N., 2022, Learner Motivation and Effectiveness of a Quest-Based Learning GIS Course, *Journal of Geography in Higher Education (in preparation)*.

DeMers, Michael N., 2022, An Experiment in Structural Gamification of an Online GIS Course, *The Geography Teacher, (forthcoming)*.

DeMers, Michael N., 2021, Learner Motivation and Effectiveness of a Quest-Based Learning GIS Course, *Journal of Geography in Higher Education (in preparation)*.

DeMers, Michael N., 2021, Spatio-Temporal Analysis of K-12 Geographic in New Mexico, *Journal of Geography (in preparation)*.

Parra, Julia, DeMers, Michael N., Raymond Carr, 2021, Designing for Engaged Learning in GIS Courses Through Online, Hybrid/Blended and Collaborative Models, *Research in Geography Education Online, (in preparation)*.

DeMers, Michael N. 2021. Recoupling Theory and Application: Legitimizing U.S. Academic Applied Geography, *Applied Geography, (in preparation)*.

PUBLICATIONS: ARTICLES AND PROCEEDINGS

DeMers, Michael N., Chris Sroka, and Joseph Kerski, 2021. Effectiveness of T3G Professional Development: The First Ten Years, *Annals, American Association of Geographers*. *Annals, American Association of Geographers*, 111(4): 1160-1182.

Schultz, Richard B., and Michael N. DeMers, 2020. Transitioning from Remote Learning to Deep Online Learning Experiences in Geography Education, *Journal of Geography*, 119(5)142-146.

- DeMers, Michael N. 2019. Special Issue on Applied Geography in Academia: Content, Curricula, Status, Methods, and Future, Guest editorial preface, *International Journal of Applied Geospatial Research*, 10 (2):v-vi.
- DeMers, Michael N. 2019. Exploring Abandoned GIS Research to Augment Applied Geography Education, *International Journal of Applied Geospatial Research*, 10 (2):1-10.
- DeMers, Michael N. 2019. Heutagogy, Personal Learning Environments, and Multi-Path Entry into GIS Education, Chapter in Walkington, Helen, (ed), *Handbook of Learning and Teaching in Geography*, Edward Elgar (Publisher), in Press.
- DeMers, Michael N., 2016. Areal Differentiation Using Fuzzy Set Membership and Support Logic, Proceedings, AutoCarto 2016, <http://geo.gmu.edu/AutoCarto2016/DeMers.pdf>.
- DeMers, Michael N., 2016. Geospatial Technology in Geography Education, *The Geography Teacher* 13(1):23-25.
- Bearman, N., N. Jones, Andre, I, Cachinho, H, and DeMers, M., 2016. The Future of GIS Education in Creating Critical Spatial Thinkers, *Journal of Geography in Higher Education*, Feb 19, pp 1-15. doi: 10.1080/03098265.2016.1144729 (<http://www.tandfonline.com/doi/abs/10.1080/03098265.2016.1144729>).
- DeMers, Michael N., 2015. Categorical Boundary Analysis: Sorting Out Terminology and Methodologies, Proceedings GEOTHINK Conference, Athens,
- DeMers, Michael N. 2015. Teaching the Complexities of Map Boundaries. Proceedings of the Workshop on Teaching Spatial Thinking From Interdisciplinary Perspectives, co-located with the Conference on Spatial Information Theory XII (COSIT 2015), Santa Fe, NM, Oct. 12, 2015. [<http://ceur-ws.org/Vol-1557/paper5.pdf>].
- DeMers, Michael N., 2015. Revisiting Classical Land Classification, Assessment, and Management Literature to Inform GIS Research, Proceedings of the Retro Colloquium, Redlands, CA. http://wellar.ca/wellarconsulting/COLLOQUIUM_PROCEEDINGS.pdf.
- DeMers, Michael N., 2014. Land Classification Research: Retrospective and Prospects, *International Journal of Applied Geospatial Research*, 5(3): 82-92.
- DeMers, Michael N. 2014, The ConnectED Initiative and Geography Education 11(4):174-175.
- DeMers, Michael N. 2014. ELA Connections. *The Geography Teacher* 11(3):116-117.
- DeMers, Michael N. 2014. Collaboration Possibilities, *The Geography Teacher* 11(2):80-81.

- DeMers, Michael N. 2014. There's Geography in My Science, *The Geography Teacher* 11(1): 41-42.
- Ahearn, S., I. Ilknur, R. Datta, M. DeMers, B. Plewe, and A. Skupin, 2013. Re-Engineering the GIS&T Body of Knowledge, *International Journal of Geographical Information Science*, 27(11):2227-2245.
[<http://www.tandfonline.com/doi/full/10.1080/13658816.2013.802324#.UkYzsBaq711>].
- DeMers, M.N., 2013. A Geodesign Exercise: First Experiences. Proceedings, ESRI Education User Conference, paper 1267.
(http://proceedings.esri.com/library/userconf/educ13/papers/1267_27.pdf)
- Al-Ajlouni, M., VanLeeuwen, M, DeMers, and St. Hilaire, R., 2013. A Method to Quantitatively Classify Residential Urban Landscapes in A Desert Environment, *Horticultural Technology*, 23(4): 474-481.
- DeMers, M.N., et al. 2013. Toward an Immersive 3D Virtual BoK Exploratorium: A Proof of Concept, *Transactions in GIS* 17(3):335-352.
- DeMers, Michael N., 2012. Preliminary Analysis of GIS Workforce Education: Linking Practitioners with Educators, *Papers of the Applied Geography Conferences*, 35, 41-49.
- Mohamed, A.H., J. L. Holechek, D. W. Bailey, C. L. Campbell, and M. N. DeMers, 2011. "Mesquite encroachment impact on southern New Mexico rangelands: remote sensing and geographic information systems approach," *J. Appl. Remote Sens.* 5, 053514.
- Dugas, D., Michael N. DeMers, Janet C. Greenlee, Walter G. Whitford, and Anna Klimaszewski-Patterson), 2011. Rapid Evaluation of Arid Lands (REAL): A Methodology, *International Journal of Applied Geospatial Research* 2(3):32-49.
- DeMers, Michael N., Martha Roditti, Madeline, Gillette, and Zach Edwards, 2010. Spatio-Temporal Dimensions of Rural Family Violence: Initial Observations from Doña Ana County, New Mexico, *Papers of the Applied Geography Conferences* 33, 213-220.
- DeMers, Michael N., Daniel P. Dugas, Walter G. Whitford, and Janet Greenlee, 2010, Landform-based Eco-Regional Mapping in Arid Environments: Lessons from the Chihuahuan Desert, *Papers of the Applied Geography Conferences* 33, 1-8.
- DeMers, Michael N., 2010. Second Life as a Surrogate for Experiential Learning, *International Journal of Virtual and Personal Learning Environments* 1(2):17-31.
- DeMers, Michael N. 2010. Coyote Teaching in Geographic Education, *Journal of Geography* 109(2):1- 8.

- DeMers, Michael N., Daniel P. Dugas, Walter G. Whitford, and Janet Greenlee, 2010. Landform-based Eco-regional Mapping in Arid Environments: Lessons from the Chihuahuan Desert, *Papers of the Applied Geography Conferences* 33:1-8.
- DeMers, Michael N. 2009. Using Intended Learning Objectives to Assess Curriculum Materials: the UCGIS Body of Knowledge. *Journal of Geography in Higher Education*, 33(Suppl):1-8.
- Gillette, M., Z.L. Edwards, M. DeMers, and M. Roditti 2008. Identifying High Risk Areas of Family Violence Using GIS, Proceedings, Esri Latin America's User Conference, Santiago, Chile, Oct. 1-8.
- DiBiase, David; DeMers, Michael; Johnson, Ann; Kemp, Karen; Luck, Ann Taylor; Plewe, Brandon; Wentz, Elizabeth, 2007. Introducing the First Edition of the GIS&T Body of Knowledge, *Cartography and Geographic Information Systems*, 34(2):113-120.
- Northcott, Jason, Mark C. Andersen, Gary W. Roemer, Ed L. Fredrickson, Michael DeMers, Joe Truett, and Paulette L. Ford, 2007. Spatial Analysis of Effects of Mowing and Burning on Colony Expansion in Reintroduced Black-Tailed Prairie Dog (*Cynomys ludovicianus*), *Restoration Ecology* 16(3): 495-502.
- DeMers, Michael N., and Jeffrey S. Vincent, 2007, "ArcAtlas in the Classroom: Pattern Identification, Description, and Explanation," *Journal of Geography*, 106: 277-284.
- Johnson, A., K. Kemp, B. Plewe, and M. DeMers, 2006. Developing GIS Curricula UCGIS Body of Knowledge, 2006., *Proceedings, Fifth European GIS Education Seminar*, Sept. 7-10, 2006, Cracow-Pieniny, Poland,
- DeMers, M.N., 2005, "Coyote Medicine: Tricking Your GIS students into Learning," *Proceedings ESRI Education User Conference*, San Diego, CA.
<http://proceedings.esri.com/library/userconf/educ05/papers/pap1934.pdf>
- DeMers, M.N., 2004, "Bloom's Taxonomy and the UCGIS Model Curriculum Learning Objectives," *Proceedings ESRI Education User Conference*, San Diego, CA.
<http://proceedings.esri.com/library/userconf/educ04/papers/pap5112.pdf>
- DeMers, Michael N., 1999, "Integrating GIS Into the K-12 Curriculum," *Education West* 3(2):24-25.
- DeMers, Michael N., John W. Simpson, Ralph E.J. Boerner, Alejandra Silva, Leslie A. Berns and Francisco J. Artigas, 1996. "Fencerows, Edges, and Implications of Changing Connectivity: A Prototype on Two Contiguous Ohio Landscapes," *Conservation Biology* 9(5):1159-1168.

- Boerner, Ralph E.J., Michael N. DeMers, John W. Simpson, Francisco J. Artigas, Alejandra Silva and Leslie A. Berns, 1996. "A Markov Chain Model of Land Use Inertia and Dynamism on Two Contiguous Ohio Landscapes," *Geographical Analysis* 28(1):56-66..
- Simpson, John W., Ralph E.J. Boerner, Michael N. DeMers, Leslie A. Berns, Francisco J. Artigas and Alejandra Silva, 1994. "48 Years of Landscape Change on Two Contiguous Ohio Landscapes" *Landscape Ecology* 9(4):261-270.
- Boryslawski, Z.R., P.S. Curtis and M.N. DeMers, 1993. "The Olawa Watershed Project: Incorporating Wetlands and Water Quality into Geographic Information Systems," In, A. Szyjikowski (ed) *Campaign for Biological Restoration of the Olawa River*, pp. 79-87, Polish Hydrological Society, Wroclow.
- DeMers, Michael N., 1993. "Roadside Ditches as Corridors for Range Expansion of the Western Harvester Ant," *Landscape Ecology* 8(2):93-102.
- DeMers, Michael N., 1992. "Data Dictionary for ARC/INFO Database: Vegetation of Southeastern Mount Desert Island, Maine," The Ohio State University, *Geographic Information Systems Laboratory, Technical Report*.
- DeMers, Michael N., 1992 "Resolution Tolerance in an Automated SCS Forest Land Evaluation Model," *Computers, Environment and Urban Systems*, 16(5):389-401.
- DeMers, Michael N., 1991 "Classification and Purpose in Automated Vegetation Maps," *Geographical Review*, Vol. 81, No. 3, pp. 267-280.
- DeMers, Michael N., Peter F. Fisher, 1991 "Comparative Evolution of Statewide Geographic Information Systems in Ohio," *International Journal of Geographical Information Systems*, Vol. 5, pp. 69-76.
- DeMers, Michael N., 1990 "SEDRULE: A Rule Based System for Interpreting the Major Sites of Sediment Deposition," *Computers and Geosciences*, Vol. 16, No. 6, pp. 833-846.
- DeMers, Michael N. 1990. "Adding Robustness to Linear Planning Models Through Simulation," *Technological Forecasting and Social Change*, Vol. 37, No. 4, pp. 139-158.
- Barnes, G., M. DeMers, E. Epstein, S. Gordon, P.C. Lai, J. Loon, D. Marble, C. Merry, H. Moellering, J. Simpson and D. Tomlin, 1990. "GIS/LIS Activities at The Ohio State University," *Proceedings GIS/LIS 90*.
- DeMers, Michael N., 1989 "The Importance of Site Assessment in Land Use Planning: A Re-examination of the SCS LESA Model," *Applied Geography*, Vol. 9, pp. 287-303.

- DeMers, Michael N., 1989 "Knowledge Acquisition for GIS Automation of the SCS LESA Model: An Empirical Study," *AI Applications in Natural Resource Management*, (Special GIS Issue) Vol. 3, No. 4, pp. 12-22.
- Fisher, Peter F. and Michael N. DeMers, 1989. "The Institutional Context of GIS: A Model for Development," *Proceedings, AUTO-CARTO 9*.
- DeMers, Michael N. 1988. "Policy Implications of LESA Factor and Weight Determination in Douglas County, Kansas," *Land Use Policy*, Vol. 5, No. 4, pp. 408-418.
- DeMers, Michael N. and Peter F. Fisher, 1988. "Evolution of Statewide GIS in Ohio: The Institutional Context," *The Ohio State University, Geographic Information Systems Laboratory, Technical Report, TR-88-02*.
- DeMers, Michael N. 1987. "Sliced Vegetation Maps," Proceedings, *International Geographic Information Systems (IGIS) Symposium: The Research Agenda*, Association of American Geographers, Nov. 15-18, Arlington, VA., Vol. III, pp. 487-498.
- Luckey, Donna and Michael N. DeMers 1986-1987. "A Comparative Analysis of Land Evaluation Systems for Douglas County," *Journal of Environmental Systems*, Vol. 16, No. 4, pp. 259-277.
- DeMers, Michael N. 1985. "The Formulation of A Rule-Based GIS Framework for County Land Use Planning," *Modeling and Simulation*, Vol. 16, pp. 93-97.
- DeMers, Michael N. 1985. "A Knowledge Base Acquisition Strategy for Expert Geographic Information System Development," Proceedings, *Geographic Information Systems in Government Workshop*, Springfield, VA, Dec. 10-13, Vol.2, pp. 837-850.
- U.S. Dept. of Education 1980. Education for Cultural Understanding, University of North Dakota, Department of Geography.
- DeMers, Michael N. 1980. "Moisture Balance as a Locational Factor for the Western Harvester Ant in North Dakota," *Association of North Dakota Geographers Bulletin*, Vol. 30, pp. 49-67.
- Bein, F., DeMers, M., et al., 1978, Impact Assessment: Columbia Road Overpass, University of North Dakota, Dept. of Geography.
- DeMers, M. N. and S. E. Lee 1978. "A Brief History of the Devils Lake Area," in W. A. Dando, et al., *Climate and Man: Cyclic Water Levels and Land Use Problems in the Devils Lake Basin*, *University of North Dakota, Dept. of Geography Technical Report*.

DeMers, M. N. and S. E. Lee 1978. "Bibliography of Devils Lake: Climate and Man," in W. A. Dando et al., *Climate and Man: Cyclic Water Levels and Land Use Problems in the Devils Lake Basin*, *University of North Dakota, Dept. of Geography Technical Report*.

ENCYCLOPEDIA ARTICLES

DeMers, M.N., 2000, "Geographic Information Systems," *Encyclopaedia Britannica*

DeMers, M.N., 2000, "Global Positioning Systems," *Encyclopaedia Britannica*

SOFTWARE REVIEWS

FASTCAD, *Professional Geographer*, Vol. 41, No. 1, pp. 89-91

DRAFIX CAD ULTRA, *Cartography and Geographic Information Systems*, Vol. 17, No. 1, pp. 114-116.

BOOK REVIEWS

Geographic Information Systems: Principles and Applications, *Geographical Review*, Vol. 93, No. 3, pp. 330-332.

GIS for Surface Water: Using the National Hydrographic Dataset, *International Journal of Applied Geospatial Research*, 10 (2): 47-48.

CONSULTING AND CONTRACT WORK

2011 – 2012

Consultant, Los Alamos National Laboratories, *The Visual Simulation Baseline Experience* (curricular design for educating the International Atomic Energy Commission nuclear power plant inspectors within a virtual world created using Unity 3d and Unity 4)

2011 – 2012

Chair, Geospatial Advisory Committee, 1105 Media Inc.

2009 – 2012

Mentor, Sloan-C Online Teaching Certification Program

Facilitator for the Sloan-C Online Teaching Certification. I taught Intermediate Second Life for two to four times per year. This prepares online teachers to use Multi-User Virtual Environments in their classrooms.

County College Instructor. I taught GIS for Non-GIS Professionals for the Agricultural Extension Service

2008

Expert Witness: John Baca VS The State of New Mexico. I was retained by Lee E. Peters of Hubert & Hernandez, (575-526-2101). I interpreted aerial photographs using a-posteriori methods (no predisposed outcome) to determine the nature of land and water use. The State of New Mexico was attempting to remove water rights for land based on lack of use of the water for irrigation. My observations, although not conclusive in themselves, suggested that the use of periodic aerial photo interpretation was not sufficient to determine that the land had not been irrigated or used for agriculture.

2006

Evidence preparation: I was retained by the Bureau of Land Management, Las Cruces Field Office to interpret aerial photographs to determine the nature of change on the landscape, and its potential causes. The complainants (off-road driving clubs represented by Hubert & Hernandez) argued that their use of the land was having no discernable or adverse effect on the Roblados Mountains land under control of the BLM and that the features visible on the aerial photos were natural. My observations and measurements disputed this conclusion. I determined an increased length of linear features through time and noted the development of loops that did not correspond to bedding planes nor to natural erosion cycles.

PRESENT RESEARCH INTERESTS

Current research efforts involve GIScience, particularly the roots of GIS literature as it applies to supporting and teaching critical spatial thinking. I study the definition of land category boundaries and aerial differentiation theory as scientific geography. My applied research focuses on the design, teaching, and development of geographic information systems models for arid and semiarid ecosystems and habitat assessment and modeling; and floral and faunal mapping. Many of my most recent publications are based on the development and refinement of the UCGIS Body of Knowledge and revolve around new methods of delivering GIS education in an age of neo-millennial students. Finally, I am deeply concerned about the future of the discipline and am working to try to link the theoretical roots of geography to the practical applications with a view toward reinvigorating the discipline.

GRANT AWARDS (total ~ 5 M)

Autumn, 2017:

PI: New Mexico Geographic Alliance, National Geographic Education Foundation,
\$27,500

Autumn, 2016:

PI: New Mexico Geographic Alliance, National Geographic Education Foundation,
\$27,500

Autumn, 2015:

PI: New Mexico Geographic Alliance, National Geographic Education Foundation,
\$27,500

Spring, 2015

PI: New Mexico Esri ConnectED Instruction, Environmental Systems Research Institute,
\$5,000

Autumn, 2014

PI: New Mexico Geographic Alliance, National Geographic Education Foundation,
\$27,500

Coordinator: New Mexico Geographic Alliance Strategic Planning Grant, National
Geographic Education Foundation, \$20,000.

Autumn, 2013

Coordinator: New Mexico Geographic Alliance, National Geographic Education
Foundation, \$27,000

Autumn, 2012

Coordinator: New Mexico Geographic Alliance, National Geographic Education
Foundation, \$34,000.

Spring, 2012

Coordinator: New Mexico Geographic Alliance, National Geographic Education
Foundation, \$32,000.

Fall, 2010

Co-PI: Foundational Research for the Geographic Information Science and Technology BoK2. National Science Foundation: (\$409,000).

PI: Online communities of practice for mentoring GIS&T professionals, Association of American Geographers (EDGE) and National Science Foundation: \$2,000.

Summer 2010

PI: Geographic Information and Technology Association \$500

Spring, 2009

PI: Geographic Information and Technology Association: \$750

Fall, 2008

PI: Intergraph Registered Research Laboratory (2 year renewal): \$116,165.

Spring, 2008

PI: Geographic Information and Technology Association: \$1,000

Spring, 2007 - 2012

PI: Geographic Information and Technology Association: \$1,000

Co-PI: GIS Analysis of Domestic Violence in Dona Ana County, New Mexico. Department of Justice. \$850,000.

Spring, 2006

PI: Geographic Information and Technology Association: \$1,000

PI: Intergraph Registered Research Laboratory: \$116,165.

Spring, 2005

PI: Geographic Information and Technology Association: \$750

PI: Development of Spatial Databases for NBII/SWIN mini-node (Phase III). USGS NBII/SWIN, \$2,000.

Spring, 2004

PI: Geographic Information and Technology Association: \$1,000

PI: Development of Spatial Databases for NBII/SWIN mini-node (Phase II). USGS NBII/SWIN, \$2,000.

Fall, 2003

PI: Intergraph Corporation, "Geomedia Research Software Grant," \$119,000.

PI: Development of Spatial Databases for NBII/SWIN mini-node (Phase I). USGS NBII/SWIN, \$2,000.

Spring, 2003

PI: Geographic Information and Technology Association, \$1,000.

Spring, 2002

PI: A Predictive GIS Model of Differential Desertification, NASA, Faculty Award for Research, \$274,000.

Co-PI: Institute for Natural Resources Analysis and Management, "Laboratory for Environmental Spatial Analysis," National Science Foundation, EPSCoR Program, \$1,971,000.

PI: Soil and Water Conservation Society, "A Survey of Agricultural Land Preservation Activities," \$26,000.

PI: Geographic Information and Technology Association, \$1,000.

Fall, 2001

PI: Intergraph Corporation, "Educational Teaching Resources Software Grant," \$101,900.

Spring, 2001

PI: Geographic Information and Technology Association, \$1,000.

Spring, 1999 – Spring, 2003

Co-PI: Bureau of Land Management, Department of Defense, Cooperative Fish and Wildlife Service, “GIS and Remote Sensing Activities in support of the Aplomado Falcon relocation Program,” approximately \$28,000.

Spring, 1998 - 1999

PI: Environmental Systems Research Institute, “Zoogeographical and Educational Uses of ArcAtlas,” \$4,000.

Fall, 1996 – 1998

PI: Hornocker Wildlife Institute and the New Mexico Department of Game and Fish, "A Predictive GIS Model of Cougar Habitat Use in the San Andres Mountains, New Mexico," \$5,962.

Fall, 1993 - Spring 1994

Cooperator: United States Department of Defense, White Sands Missile Range, and Coop. US Fish and Wildlife Service, "Feral Horse Relationships to Vegetational Communities and Wildlife Habitat in the Tularosa Basin, New Mexico," \$5,000.

Fall, 1992 - Spring 1995

Co-PI and GIS Specialist, US Agency for International Development, Program in Science and Technology Cooperation, "Reclaiming Poland's Riverine Resources," \$149,998.

Fall, 1990 - Spring 1992

Co-PI, Office of Research and Graduate Studies, Interdisciplinary Research Grant Program, The Ohio State University, "Spatio-Temporal Analysis of Ohio Vegetation: A Prototype GIS for the Northern Virginia Military District." \$34,000.

Fall, 1985 - Spring 1986

PI, Research Initiation Grant, North Texas State University, \$1255, "Rating the Transportation of Hazardous Material: A GIS Application."

Co-PI, U S Army Corps of Engineers, \$168,693, "Pre-Impoundment Environmental Studies, Ray Roberts Lake." Aerial Photo interpretation and database creation and evaluation.

PAPER PRESENTATIONS AND POSTER SESSIONS

Co-Presenter: Introducing GOLDEN: The Global Online Learning Development and Extended Network, Third International Congress on Geographical Education, Oct. 14-17, 2021.

Co-Organizer: Developing Geospatial Expertise, Spatial Cognition 2020/21 Conference, Riga, Latvia, Aug. 1, 2021.

Paper Presentation: Examining the Effectiveness of the T3G Professional Development Institute, Virtual American Association of Geographers Annual meeting, April 9, 2021.

Paper Presentation: Learner Motivation, Choice, and Time Management Analysis of a Quest-Based GIS Course, Washington, DC, American Association of Geographers annual conference, April 5, 2019

Paper Presentation: Assessing a Multi-Year Professional Development Institute for Educators (T3G), New Orleans, LA, American Association of Geographers annual conference, April 12, 2018.

Paper Presentation: The Teachers Teaching Teachers Institute: Analysis of Effectiveness, Quebec City, Quebec, National Council for Geographic Information / Canadian Association of Geographers, August 8, 2018.

Community Talk: The Role of Geographers in the Office of Strategic Services, Military Officers of America Association, Mesilla Valley Chapter, Las Cruces, February 21, 2018.

Invited Speaker: Rapid Ecoregional Mapping of Arid Lands, New Mexico Geographic Information Council, Albuquerque, NM, October 27, 2017.

Paper Presentation: Learner Motivation and Effectiveness of a Quest-Based Learning GIS Course, National Council for Geographic Education, July 28, 2017.

Panelist: Teaching and Learning About Careers in Geography, Boston, MA, American Association of Geographers annual conference, April 7, 2017.

Panelist: Learning and Applying Tools in Geography: Important Concepts in GIS, Boston, MA, American Association of Geographers annual conference, April 7, 2017.

Session Organizer: Applied Geography in Academia: Content, Curricula, Status, Methods and Future, Boston, MA, American Association of Geographers annual conference, April 4, 2017.

Paper Presentation: Exploring Abandoned GIS Research to Augment Applied Geography Education, Boston, MA, American Association of Geographers annual conference, April 5, 2017.

Paper Presentation: Learner Motivation and Effectiveness of a Quest-Based Learning GIS Course, National Conference on Geographic Education, July 27-30, 2016, Albuquerque, NM.

Paper Presentation: A Preliminary Assessment of Winter Movement and Activity Patterns of Sheep on Rangelands of Magallanes and Tierra DelFuego (Chile), 10th Latin American Association of Specialists in Small Ruminants and South American Camelids, Punta Arenas, May 2-4, 2016

Paper Presentation: New Mexico Flood Waters Association, Deming, NM, Sept. 20, 2016.

Paper Presentation: Recoupling Theory and Application: Legitimizing U.S. Academic Applied Geography, SWAAG, Applied Geography Conference, Nov. 7, 2015.

Paper Presentation: A Quest-Based Online GIS Course: Preliminary Experiences, SWAAG, Applied Geography Conference, Nov. 7, 2015.

Keynote: Categorical Boundary Analysis: Sorting Out Terminology and Methodologies, Proceedings GEOTHINK, Athens, Nov. 5, 2015 (Via Skype).

Paper Presentation: Designing a Quest-Based GIS Course, Association of American Geographers, Chicago, Illinois, April 23, 2015.

Paper Presentation: Teaching the Complexities of Map Boundaries, Workshop on Teaching Spatial Thinking from Interdisciplinary Perspectives (SPATIALTHINKING 2015), October 12, Santa Fe, NM.

Chair and Moderator: The James R. Anderson Distinguished Lecture in Applied Geography: Geography's Future in the United States, Chicago, IL, April 21, 2015.

Paper Presentation: Transitioning to a Geographically Literate Society, New Mexico State University, Arts & Sciences Colloquium Series, Las Cruces, NM, March 2, 2015.

Paper Presentation: Online High School GIS Courses and Game-Based Professional Development, Annual Alliance Coordinator Meeting, Washington, DC, Feb. 26, 2015.

Invited Speaker: Revisiting Classical Land Classification, Assessment, and Management Literature to Inform GIS Research, Retro-Colloquium, Redlands, CA, Feb. 13, 2015.

Paper Presentation: Mapping a Traditional GIS Course Onto a Quest-Based Learning Platform, ESRI Southwest User Conference, Santa Fe, NM, Dec. 3, 2014

Paper Presentation: Creating ArcGIS.com Organizational Accounts for New Mexico Schools, ESRI Southwest User Conference, Santa Fe, NM, Dec. 3, 2014

Paper Presentation: Strategic Planning for K-12 Geography Education in New Mexico: Recent Activities of the New Mexico Geographic Alliance, Joint Meeting of the Southwest and Great Plains/Rocky Mountain Divisions of the AAG, Albuquerque, NM, Oct. 23, 2014

Keynote Presentation: Geospatial Learning Opportunities of the New Mexico Geographic Alliance, New Mexico Geographic Information Council, Albuquerque, NM. Oct. 21, 2014.

Paper Presentation: Volunteered Geographic Data and Citizen Science: Empowering New Mexico Students, New Mexico Society for Technology in Education Mini-Conference, Las Cruces, NM, April 28, 2014.

Paper Presentation: Geospatial Education Opportunities with the New Mexico Geographic Alliance, New Mexico Society for Technology in Education Mini-Conference, Las Cruces, NM, April 28, 2014.

Paper Presentation: T3G: The First Five Years, Association of American Geographers Annual Meeting, Tampa, FL, April 10, 2014.

Paper Presentation: The UCGIS GIS&T Body of Knowledge: Past, Present, and Future, Geography Distinguished Alumnus Lecture, Grand Forks, North Dakota, Nov. 21, 2013.

Paper Presentation: Using GIS in Your Science Class, New Mexico Science Teachers Association, Las Cruces, NM, Nov. 2, 2013.

Paper Presentation: You've Got Geography in My Science, National Council for Geographic Education Annual Conference, Denver, CO, August 3, 2013.

Paper Presentation: Toward an Immersive 3D Virtual BoK Exploratorium: A proof of Concept, ESRI International User Conference, San Diego, CA, July 10, 2013.

Paper Presentation: A Geodesign Exercise: First Experiences, ESRI Education User Conference, San Diego, CA, July 08, 2013.

Paper Presentation: Toward a 3-D Immersive Virtual Exploratorium for the GIS&T Body of Knowledge, Association of American Geographers, Las Cruces, NM Apr. 10, 2013.

Paper Presentation: A Reality-Based Geodesign Exercise: Informing the Valles Caldera National Preserve Management Act, Geodesign Summit, Redlands, CA, Jan. 24, 2013.

Paper Presentation: A geodesign project to augment a traditional GIS course, Southwest Division, Association of American Geographers, Las Cruces, NM Oct. 25, 2012.

Paper Presentation: Preliminary comparative analysis of GIS workforce education: Comparing practitioners with educators," Applied Geography Conference, Minneapolis, MN, Oct.12, 2012.

Panel: Rethinking Applied Geography – An Open Forum, Applied Geography Conference, Minneapolis, MN, Oct. 10, 2012.

Paper Presentation: Designing for Engaged Learning in GIS Courses Through Online, Hybrid, and Collaborative Models, National Council for Geographic Education, San Marcos, TX, Oct. 6, 2012.

Anderson Distinguished Lecture in Applied Geography: Land Classification Research: Retrospective and Prospects, Association of American Geographers Annual Meeting, Seattle, WA, June, 2012.

Panelist: Developing a Conceptual Framework and Best Practices for Community Geography Research and Pedagogy 4: A Focus on Educational Practices, New York, New York, June, 2012.

Paper Presentation: Geographic Information Science and Technology BoK2: Foundational Research (Cyber-GIS Panel), Association of American Geographers Annual Meeting, Seattle, Washington, 2011.

Paper Presentation: Geographic Information Science and Technology BoK2: Foundational Research, Milwaukee, Wisconsin, American Society for Photogrammetry and Remote Sensing, 2011.

Paper Presentation: Mapping the GIS&T Body of Knowledge onto Applied Geography Curricula, Redlands, California, Applied Geography Conference, 2011.

Paper Presentation: Geospatial 101: GIS as a Decision Support Tool, Washington, D.C., FOSE Conference and Exposition, 2011.

Paper Presentation: Geographic Information Science and Technology BoK2: Foundational Research, Milwaukee, Wisconsin, American Society for Photogrammetry and Remote Sensing, 2011.

Paper Presentation: Making Geography Exercises With Short Movie Clips, Portland, Oregon, National Council for Geographic Education annual meeting, August 4, 2011.

Invited Presentation: Geospatial 101: GIS as a Decision Support Tool, Washington, D.C., FOSE Conference and Exposition, July 20, 2011.

Paper Presentation: Creating Communities of Practice for GIS Education, Seattle, WA, Association of American Geographers Annual Meeting, April 12, 2011.

Paper Presentation (Workshop): Popular Media in the Geography Classroom, Microcomputers in Education Conference, Tempe, Az, March 14, 2011.

Paper Presentation: Reinforcing the Base of the GIS Education Pyramid. Savannah, GA, National Council for Geographic Education annual meeting, October 2, 2010.

Paper Presentation: Project-based GIS Design Education in the University. Washington, D.C., Association of American Geographers Annual Meeting, April 17, 2010.

Poster Session: Using high spatial resolution satellite imagery to detect vegetation change in response to precipitation and grazing intensity in Chihuahuan Desert Rangelands. 63rd Annual Meeting of the Society for Range Management, Denver, CO, Feb. 7-11, 2010, Paper No. P-41.

Paper Presentation: "Landform-based Eco-Regional Mapping in Arid Environments: Lessons from the Chihuahuan Desert," Baton Rouge, Applied Geography Conference, October 28-30, 2009.

Paper Presentation: "A Spatio-temporal Examination of Domestic Violence Indicators," New Orleans, 10th Crime Mapping Conference, August 19-22, 2009.

Paper Presentation: Using Simple Second Life Building Tools to Create Learning Objects, June 18, 2009, San Francisco, California, Sloan-C (Emerging Technologies in Education) Conference.

Paper Presentation: Using Second Life to Augment an Online GIS Course, March 25, 2009, Las Vegas, Nevada, Association of American Geographers, annual meeting.

Paper Presentation: "Shared Intellectual Landscapes: Teaching Science in Second Life," June, 15, 2008, Carefree Arizona, Sloan-C (Emerging Technologies in Education) Conference.

Paper Presentation: "Second Life Fireside Chats: Social Presence in Online GIS Education," ESRI Education User Conference, August, 2008.

Paper Presentation: "Spatial Correspondence Analysis of Family Violence Indicators in Dona Ana County: Preliminary Results," National Institute of Justice Annual Meeting, Washington, DC, July, 2008.

Paper Presentation: "Shared Intellectual Landscapes: Teaching Science in Second Life," Sloan-C: Emerging Technologies in Education, Carefree, AZ, May, 2008.

Paper Presentation: "Coyote Teaching: A Second Life for Online Geography Instruction," Association of American Geographers Annual Meeting, Boston, March, 2008.

Paper Presentation: "Evaluation Strategies in Asynchronous Online GIS Courses," ESRI Education User Conference. June, 2007.

Paper Presentation: "Applied Research and the Basics of Geography," Association of American Geographers Annual Meeting, San Francisco, April, 2007.

Paper Presentation: “New Mexico Ecoregions Level III: An Overlay Evaluation,” ESRI International User Conference, June, 2007.

Paper Presentation: “Rapid Evaluation of Arid Lands: REAL,” US International Association for Landscape Ecology,” April, 2007.

Paper Presentation: ESRI Education User Conference, San Diego, CA, “Coyote Medicine: Tricking Your GIS Student into Learning,” July 6, 2005.

Paper Presentation: ESRI Education User Conference, San Diego, CA, “Bloom’s Taxonomy and the UCGIS Model Curriculum Learning Objectives,” August 10-13, 2004.

Invited Paper Presentation: Association of American Geographers / Gamma Theta Upsilon, Visiting Geographical Scholars Program. “Landforms, Cattle, and Drought: A Recipe for Landscape Dysfunction,” Sept. 24, Grand Forks, North Dakota.

Invited Paper Presentation: Association of American Geographers / Gamma Theta Upsilon, Visiting Geographical Scholars Program. “Geographic Information and Technology (GIS * T): What it is and What You Should Know,” Sept. 24, Grand Forks, North Dakota.

Invited Paper Presentation, 2nd National LESA conference, July 2003, “Survey of Agricultural Land Evaluation Strategies,” Nebraska City, Nebraska.

Invited Panel Member, Panel on Implementing GIS in Higher Education, ESRI ArcInfo User Group Meeting, July 9-14, 2001, San Diego, CA.

Invited Speaker, “Activities of the UCGIS GIScience Model Curriculum,” ESRI GIS in Higher Education Meeting, July 6-8, 2001, San Diego, CA.

Invited Speaker, New Mexico Geographic Alliance, Workshop on GIS in K-12 Education, June 7-15, 2000, Albuquerque, NM.

Invited Speaker, New Mexico Geographic Alliance, Workshop on GIS in K-12 Education, June 14-15, 1999, Albuquerque, NM.

Paper Presentation, 95th Annual AAG Meeting, "A Brief History of Zoological Mapping," April 23-26, 1999, Honolulu, Hawaii.

Invited Speaker, ESRI Latin America, Workshop on GIS in Higher Education, Teaching GIS in Latin American Universities, April 9-11, 1999, Caracas, Venezuela.

Invited Speaker, 93rd Annual AAG Meeting, "Field Work, Regional Description and the Transition to Automated Geography: Lessons Learned from the Montfort Study," April 1-5, 1997, Fort Worth, TX.

Paper Presentation (co-author), 93rd Annual AAG Meeting, "A Predictive GIS Model of Cougar Habitat in the San Andres Mountains, New Mexico," April 1-5, 1997, Fort Worth, TX.

Paper Presentation, 92nd Annual AAG Meeting, "Characterizing the Myrmecofauna Along an Engineered Riparian Corridor," April 13-17, 1996, Charlotte, NC.

Invited Workshop Paper, 11th Annual US IALE Landscape Ecology Conference, "Zoological Mapping: First Principles and Landscape Ecological Applications," March 26-29, 1996, Galveston, TX.

Paper Presentation, 91st Annual AAG Meeting, "Sympatric Speciation in Pogonomyrmex Harvester Ants," March 14-18, 1995, Chicago, IL.

Poster Session, 10th Annual US IALE Landscape Ecology Conference, "A Structural Analysis of Landuse and Landcover Change along a Riparian Landscape," April 22-26, 1995, Minneapolis, MN.

Paper Presentation, 90th Annual AAG Meeting, "Range Expansion of the Western Harvester Ant," March 29-April 2, 1994, San Francisco, CA.

Poster Session, 9th Annual US IALE Landscape Ecology Conference, "Modeling Edge Habitat Allocation Under Differing Conditions of Connectivity," March 23-26, 1994, Tuscon, AZ.

Invited Speaker, Conference on Sampling the Green World: Innovative Concepts and Methods for Collecting, Preservation and Storage of Phytodiversity, "Remote Sensing and Geographic Information Systems: Spatial Technologies for Preserving Phytodiversity," Fort Worth, TX (Nov. 19-20, 1993).

Paper Presentation, 89th Annual AAG Meeting, "Hypothesis Testing of a Vector-Based Percolation Model," April 8-11, 1993, Atlanta, GA.

Paper Presentation, 88th Annual AAG Meeting, "A Model of Species Response to Changing Edgescape," April 18-21, 1992, San Diego, CA.

Invited Speaker, 1st National Land Evaluation and Site Assessment Conference, "Requirements Analysis for GIS LESA Implementation," March 26-28, 1992, Kansas City, MO.

Paper Presentation, 2nd Ohio ARC/INFO User's Group Meeting, "A GIS Analysis of Landcover Change in the Northern Virginia Military District," Oct. 4, 1991, Columbus, OH.

Paper Presentation, Centennial Meeting, Ohio Academy of Science, "Vegetation Change in the Northern Virginia Military District, Ohio," April 26-28, 1991, Columbus, OH.

Paper Presentation, 87th Annual AAG Meeting, "Pedological and Microtopographic Influences on Western Harvester Ant Range and Eastward Expansion," April 13-17, 1991, Miami, FL.

Paper Presentation, 13th Annual Applied Geography Conference, "GIS Database Design for Archived Vegetation Map Information," Charlotte, North Carolina, Oct. 24-27, 1990.

Paper Presentation, 5th Annual US-IALE, Landscape Ecology Symposium, "A GIS Model of Jaguar Habitat Partitioning Under Conditions of Uncertainty," Oxford, Ohio, March 20-24, 1990.

Paper Presentation, 86th Annual AAG Meeting, "GIS Automation of Archived Vegetation Map Information," Toronto, Ontario, Canada, April 14-19, 1990.

Invited Speaker, GTU/AAG Visiting Scientist Program, Indiana State University Department of Geography guest lecture series, "Breathing New Life Into Old Data: GIS as Archive," July 26, 1989, Terre Haute, IN.

Invited Speaker, GTU/AAG Visiting Scientist Program, "Research Directions in GIS," Feb. 17-18, 1989, University of North Dakota, Grand Forks, and Bemidji State University, Bemidji, MN.

Paper Presentation, ASPRS/ACSM, AUTO-CARTO 9, "The Institutional Context of GIS: A Model for Development," (Peter Fisher: Senior Author), April 3-7, 1989, Baltimore, MD.

Paper Presentation, West Lakes Division, AAG Meeting, "GIS: A Tool for Identifying Potential Food Shortages via Desert Locust Activity," Oct. 26-29, 1989, St. Paul, MN.

Paper Presentation, 11th Annual Applied Geography Conference, "SEDRULE: A Rule-Based System for Interpreting the Major Sites of Sediment Deposition," Oct. 26-29, 1988, St. Paul, MN.

Paper Presentation, Ohio Academy of Science Annual Meeting, "Statewide Geographical Information Systems in Transition: The Case of the Ohio Capability Analysis Program," April 29, 1988, Newark, OH.

Paper Presentation, 84th Annual AAG Meeting, "Automating the SCS Land Evaluation Procedures for Forest Land," April 6-10, 1988, Phoenix, AZ.

Paper Presentation, 3rd Annual Landscape Ecology Symposium, "Fuzzy Overlay: Foundations and Potential," March 16-19, 1988, Albuquerque, NM.

Paper Presentation, International Geographic Information Systems Symposium, Association of American Geographers, "Sliced Vegetation Maps," Nov. 15-18, 1987, Arlington, VA.

Paper Presentation, 83rd Annual AAG Meeting, Portland, OR, "Fuzzy Sets, Natural Language Computation and Neighborhood Functions," April 21-26, 1987.

Paper Presentation, 82nd Annual AAG Meeting, Minneapolis, MN, "Rating the Transportation of Hazardous Material: A GIS Application," May 3-7, 1986.

Paper Presentation, Geographic Information Systems in Government Workshop, "A Knowledge Base Acquisition Strategy for Expert GIS Development," Dec. 10-13, 1985, Springfield, VA.

Paper Presentation, Southwest Division, AAG Meeting, Denton, TX, "Implications of LESA Weight Determination in Douglas County, Kansas," Oct. 17-19, 1985.

Paper Presentation, Sixteenth Annual Pittsburgh Conference on Simulation And Modeling, "The Formulation of A Rule-Based GIS Framework for County Land Use Planning," April 24-25, 1985

Poster Session, 48th North American Wildlife and Natural Resources Conference, Kansas City, MO, "The Agricultural Land Evaluation and Site Assessment (LESA) System: An Automated Approach," March 18-23, 1983.

Paper Presentation, Great Plains Rocky Mountain Division, AAG Meeting, Laramie, WY, "LANDSAT Data Classification for Detection of Pine Beetle Infestation," 1982.

Paper Presentation, Great Plains Rocky Mountain Division, AAG Meeting, Grand Forks, ND, "Mapping Pogonomyrmex," 1979.

HONOR SOCIETIES

Member: Gamma Theta Upsilon, Honorary Geographic Society
Member: Sigma Xi, National Science Honor Society

PROFESSIONAL SOCIETIES

Fellow: Royal Geographical Society
Member: American Association of Geographers
Member: National Council for Geographic Education
Member: National Council for the Social Studies
Member: New Mexico Geographic Information Council
Member: New Mexico Science Teachers Association
Member: International Society for Technology in Education
Member: New Mexico Society for Technology in Education
Member: Urban and Regional Information Systems Association
Member: Cartography and Geographic Information Society

PROFESSIONAL ACTIVITIES: PROPOSAL REVIEWS

Proposal Review, NSF Geography Division, 2010, 2013, 2015
Proposal Review Team, NSF Geography Division, 2006 - 2008
Proposal Reviewer, NSF Geography Division, 2001, 2002, 2003, 2004, 2008
Proposal Reviewer, NSF Economics Division, 2000.
Proposal Reviewer, New Mexico State University, Arts & Sciences, 1998-99.
Proposal Reviewer, NOAA, Coastal Change Analysis Program, 1992-1998.
Proposal Reviewer, National Fish and Wildlife Foundation, 1992.
Proposal Reviewer, NSF, Geography and Regional Science Division, 1989.
Proposal Reviewer, NOAA, C-CAP, 1989, 1990
Proposal Reviewer, Center for Teaching Excellence, The Ohio State University, 1986-88.

PROFESSIONAL ACTIVITIES: EDITORIAL BOARDS

Editorial Board, Review of International Geography Education Online, (2012 – present)

Associate Editor: Section Editor (Remote Sensing and GIS) Geography Compass (2012 – present)

Associate Editor: International Journal of Virtual and Personal Learning Environments (2010 – present)

Editorial Board: International Journal of Applied Geospatial Research (2011 – present)

Member, Editorial Board: Geography Compass – GIScience Division (2008 – present)

Task Force Member: Editorial Board, Geography Education National Implementation Project (2012 – 2013)

Member, Advisory Panel, National Science Foundation, Geography and Regional Science Division, 2006 - 2008

Secretary and Editor, US-IALE Newsletter, Newsletter of the US Regional Division, International Association for Landscape Ecology, (6/1994 - 5/1996)

Board of Directors, Editor, The Biogeographer, Newsletter of the AAG Biogeography Specialty Group, 3 year elected position (9/1991 - 5/1997).

Editorial Review Board: Computers, Environment and Urban Systems, 1989 to December 1997.

PROFESSIONAL ACTIVITIES: EDITORIAL REVIEWS

Articles reviewed for:

ISPRS International 2017 (2)
Remote Sensing 2020
The Geography Teacher, 2017, 2021
International Journal of Geographical Information (2017)
PLOS (2017)
Review of Geography Education Online (2012, 2017)
International Journal of Virtual and Personal Learning Environments (2012, 2014 - 2017)
Papers of the Applied Geography Conferences (2012, 2013)
Cartography and GIS (2011, 2017, 2019)
Transactions in GIS (2011, 2012, 2015 – 2017, 2020)
Journal of Geography (2005, 2009, 2010 - 17)
Applied Geography Conferences (2010, 2013 [3])
International Journal of Applied Geospatial Research (2010, 2013, 2014, 2017)
Journal of Virtual Worlds Research (2009, 15, 16, 17)
Journal of Geography in Higher Education (2009 [2])
Geography Compass (2007, 2013, 14-17)
Annals, Association of American Geographers, (2005, 2011, 2021)
Geographical Analysis (2001, 2000)
Geographical Sciences (2003)
Landscape Ecology (2000)
Environmental Monitoring (1999)
Journal of Arid Environments (1999, 2001, 2003)
Landscape Ecology (1997, 1996, 1994)
Int'l Journal of Geographical Information Science (2001, 1999, 1998, 1997, 1993,
1992, 1989, 2009, 2010, 2015, 2017)
Photogrammetric Engineering and Remote Sensing (2005, 2003, 2002, 1996, 1995, 1994,
1993, 1991, 1990, 1989)
AI Applications in Natural Resource Management (1996, 1993, 1991)
Computers, Environment and Urban Systems (1992, 1990)
Journal of the Soil and Water Conservation Society (1992)
Computers and Geosciences (1991, 1989, 2012)
Journal of Agricultural, Biological and Environmental Statistics (1997)
Wetlands Journal (1997)

PROFESSIONAL ACTIVITIES: REVIEW BOARDS

GIS External Review Panel, Southwest Indian Polytechnic Institute (1993-2021)

GIS External Review Panel, Technical Vocational Institute, (1993-2021).

GIS External Review Panel, San Juan College, Farmington, (1993-2021)

PROFESSIONAL ACTIVITIES: PROGRAM REVIEWS

2007: Northern Arizona University, Geography Department

PROFESSIONAL ACTIVITIES: QM COURSE REVIEWS

2020: LOCI 4100 Spatial Programming (North Park University) (Subject Matter Expert)

2019: LOCI 4000 Development of Web Apps (North Park University) (Subject Matter Expert)

2018: CIEC 4600/4610 Supporting Math and Science in Early Childhood Education (University of Toledo) (Reviewer)

2018: FWCE 301 Wildlife Ecology (New Mexico State University) (Chair)

2017: URP 4403 Sustainable Cities (Florida Atlantic University) (Subject Matter Expert)

2017: MSW 521 Social Work Practice II (NMSU) (Reviewer)

2016: GIS 4930 Special Topics in Geographic Information Science (University of West Florida) (Subject Matter Expert)

2016: GIS 5100 Applications in GIS (University of West Florida) (Reviewer)

PROFESSIONAL ACTIVITIES: OUTSIDE P&T REVIEWS

2021: Dr. Andrew Jolly-Ballantine, University of Connecticut, for promotion to Full Professor.

2017: Dr. Ziyang Jiang, Miami University of Ohio – Westchester for promotion to Associate Professor with Tenure

2017: Dr. John Kostelnick, Illinois State University for promotion to Professor

2016: Dr. Dennis Jelinski, University of Victoria for promotion to Professor

2014: C.P. Lai (University of Hong Kong) for promotion to Professor

2011: Aniruddha Banerjee (Indiana University, Purdue University at Indianapolis) - for promotion to Associate and Tenure

2010: Geoffrey Duh (Portland State) – for promotion to Associate and Tenure
Jun Luo (Missouri State) – for promotion to Associate and Tenure

2009: Sharolyn Anderson (University of Denver) – for promotion to Associate and Tenure

PROFESSIONAL ACTIVITIES: ORGANIZATIONAL

2015 – Present, Past President, National Council for Geographic Education.
2014 – Dec. 31, 2014 – President, National Council for Geographic Education
2011 – present – Chair, Anderson Medal of Honor Committee, Association of American Geographers
2011 – 2014 – Delegate, Task Force, National Geography Education Implementation Project
2011 – 2014 Board, Applied Geography Conferences
2011 – Present - Alliance Coordinator, NGS New Mexico Geographic Alliance
2011 – March - July 30, 2011 – Steering Committee: National Geographic Society New Mexico Geographic Alliance
2011 – 2013 – Vice Chair (External Relations) National Council for Geographic Education
2008 – 2013 – Vice Chair: Geography Education Specialty Group, AAG
2007 – 2009 – Board member, Geography Education Specialty Group, AAG
2006 – present – Board member, Applied Geography Specialty Group, AAG
2001 – 2003 – Chair UCGIS Sponsored Programs Committee
2002 – Present: Director: Laboratory for Environmental Spatial Analysis
2002 – Present: Board of Directors, Institute for Natural Resources Assessment and Management, EPSCoR, National Science Foundation.
2002 – Present: University Information Science Strategic Planning Committee
2001 – Present: Geography Department Capitol Campaign Development Coordinator
1999 – Organizer, Zoogeography Session, Association of American Geographers' Annual Meeting, Honolulu, Hawaii.
1998 – 2006: Member, GIS Model Curriculum Working Group, Sponsored by University Consortium for Geographic Information Science.
1997 – 2002 – Faculty Senate, New Mexico State University
1997 – 1999: Member, Arts and Sciences Curriculum Review Committee, NMSU.
1996 – Organizer, Zoogeography Session, Association of American Geographers' Annual Meeting, Fort Worth, TX.
1994-1996 – Secretary, US Regional Division, International Association for Landscape Ecology.
1991-1997 –Member, Board of Directors, Biogeography Specialty Group, Association of American Geographers
1995 – Member Arts & Sciences Ad Hoc Committee on Social Science Education, NMSU.
SW Division, Association of American Geographers Arrangements Committee
Organizer: Landscape Ecology Sessions, Association of American Geographer's Annual Meeting, Charlotte, North Carolina.
1993 –1995 – Treasurer: US Division International Association for Landscape Ecology

1993 –1996 – Board Member, Biogeography Specialty Group, Association of Am. Geographers
 1993 – present – Advisor, Kappa Xi Chapter, G.T.U., New Mexico State University
 1995 – 1996 – Chair, Science Review Panel, NOAA Coastal Change Analysis Program.
 1991 – 1997 – Member, Science Review Panel, NOAA's Coastal Change Analysis Program.
 1991 – 1993 – Board of Directors, NASA Center for Mapping, The Ohio State University.
 1991 – Workshop Participant, NOAA's Coastal Ocean Program - Great Lakes workshop, Coastwatch: Change Analysis Program (invited participant).
 Local Arrangements Chair, Geography Branch, Ohio Academy of Science.
 1988 – AAG, GIS/LIS Program Committee.
 1987 – 1993 – Member, Ohio Remote Sensing Steering Committee, Fall 1987-present.
 1986 – 1988 – Member, Educational Enhancement Grants Review Panel, Center for Teaching Excellence, The Ohio State University.
 1985 – 1986 – Associate Director, GIS Laboratory, North Texas State University.
 1984 – Advisor/Organizer, Zeta Phi Chapter, G. T. U., Mankato State University.
 1981 – 1983 – President, Iota Upsilon Chapter, G. T. U., University of Kansas.
 1976 – 1978 – Public Relations Officer, Psi Chapter, GTU, University of North Dakota.

TEACHING EXPERIENCE

1993-2021: Assistant / Associate Professor / Professor, New Mexico State University

- GIS for Water Management
- GIS Design
- GIS Capstone
- Geodatabase Design
- Introduction to Remote Sensing
- Introduction to Cartography (Cartography and GIS)
- World Regional Geography
- Map Reading and Aerial Photo Interpretation
- Fundamentals of Geographic Information Systems
- Advanced Geographic Information Systems
- GIS Modeling and System Design
- Advanced Spatial Analysis
- Landscape Ecology
- Geodatabase Design

1986-1993: Assistant Professor, The Ohio State University

- Geographic Information Systems
- Geographical and Land Information Systems
- Advanced GIS Applications in Botanical Mapping and Modeling
- Advanced GIS Applications in Biogeographical Modeling
- Seminar in Geographic Information Systems
- Principles of Cartography

Numerical Cartography
Map Reading

1985-1986: Assistant Professor, North Texas State University

Physical Geology
Physical Geography
Geomorphology
Geographic Information Systems

1984-1985 Graduate Teaching Associate (Full Responsibility)

Conservation of Natural Resources

1983-1984 Assistant Professor, Mankato State University

Air Photo Interpretation
Digital Remote Sensing
Map Reading
Geomorphology
Glacial Geomorphology
Seminar in Geographic Information Systems

TEACHING INTERESTS

GIScience, Land Classification, GIS applications, Spatial Statistics, GIS Education, Landscape Ecology

THESES SUPERVISED (* indicates subsequent PhD)

Current Advisees:

Arthur Guerrero – MAG

Graduates:

31. Lalitha, Subramanian, MAG 2020, LANDMET: Landscape Metrics Tool in QGIS to Study Landscape Variability.
30. *Aaron Adams, MAG 2019, A Comparative Usability Assessment of Augmented Reality 3-D Printed Terrain Models and 2-D Topographic Maps.
29. Lee, Christopher, MAG 2015, GIS in Viticulture: An Analysis of Marginality and Wineries in New Mexico.

28. Habrock, Christopher D., MAG 2013, An Analysis of Migration from The Caucasus to Russia
27. *Klimaszewski-Patterson, Anna, MAG 2011. Assessing synthetic predictive vegetation boundaries in the Chihuahuan Desert
26. Molinar, Marcos, MAG 2009, Documenting Business Requirements: A Bureau of Land Management Field Office Approach.
25. Chacon, Jose, MAG, 2008. A GIS Design Analysis for the Las Cruces Office of the Bureau of Land Management.
24. Gronemeyer, Peg, MAG, 2007. The Role of Vegetation Cover on the Spatial Distribution of African Wild Dogs, *Lycaon pitus*.
23. Koehler, Nori L., MAG, 2007. Impacts of Cattle Grazing on *Opuntia macrocentra* Mounds, in the Norther Chihuan Desert.
22. Fiori, Francis, MAG, Spring 2004. A Conceptual GIS Design for the Liquid Waste Program, District 3, New Mexico Environment Department.
21. La Cava, Jennifer, MAG, Spring 2004. "The Impact of Roads on Adjacent Vegetation in the Chihuahuan Desert.
20. Lanser, Julie, MAG, Summer 2003. "Spectrally Driven Predictive GIS Habitat Models for Aplomado Falcons (*Falco femoralis*) in Northern Chihuahua, Mexico."
19. *Campbell, Carol, MAG, Spring 2002. "A Descriptive Model of the Avian Community in a Semi-arid Riparian Landscape."
18. *Kulas, Christina, MAG, Spring 2001. "The Effects of Lehmann Lovegrass (*Eragrostis Lehmanniana*) on Semiarid Desert Ecosystems: Biopedorturbation as an Ecosystem Indicator."
17. Surface, Laura, MAG, Autumn, 1999, "Effects of Riparian Corridors on Wintering Birds Along the Rio Grande."
16. Hangen, James, MAG, Autumn, 1999, "A Biogeographic Survey of the Ants of the Tularosa Valley, New Mexico."
15. *Davis, James, MAG, Summer 1999, "Ant Biodiversity along the Rio Grande Riparian Corridor."
14. *Vincent, Jeffrey, MAG, Summer 1999, "A Descriptive Geographic Information System Model of the Cotton Boll Weevil (*Anthonomus Grandis Grandis*) in Doña Ana County."

13. Dappen, Patricia R., MAG., Spring 1999, "Remote Sensing Techniques to Map and Monitor C₃ and C₄ Chihuahuan Desert Plant Communities Using NOAA AVHRR Satellite Data."
12. Campbell, Ralph J., MAG, Summer 1998, "A Predictive GIS Model of Cougar Habitat, San Andres Mountains, New Mexico."
11. *Dogan, Hakan M., MAG., Spring, 1998. "Visualizing Spatio-Temporal Mesquite Variation on Desert Grasslands Under Different Grazing Management Applications."
10. Huck, Terence W. Jr., MAG, Spring, 1998, "Evaluation of Interannual Precipitation and NDVI Using AVHRR Satellite Data."
9. Beavers, Michael, MAG, Autumn, 1996 "Visualizing Spatio-Temporal Forage Conditions on a Continuously Grazed Desert Pasture."
8. Groothusen, Rhonda, MAG, Summer 1996, "A Landscape Ecological Assessment of the Rio Grande River Corridor."
7. Gerth, Jeffrey D., MA 1993, "Towards Improved Spatial Analysis with Areal Units: The Use of GIS to Facilitate the Creation of Dasymeric Maps."
6. Klein, Ronald J., MA 1993, "A GIS Exploration of Inertia and Dynamism in Two Ohio Landscapes"
5. Tabler, Mary, MA 1993, "Design and Implementation of a GIS Application for Site Selection of Sanitary Solid Waste Landfills"
4. Bremer, Richard C., MA 1992, "A Technique for the Quantification of Positional Error Distributions for Geographic Database Feature Classes"
3. Coffeen, Stephen L., MA 1992, "GIS in Geographic Education: An Empirical Study"
2. *Thompson, James A., MA 1992, "Predicting Soil Mapping Unit Inclusion Locations Using Detailed Topographic Data Within a Geographic Information System"
1. *Mesev, Victor T., MA 1992, "Suitability of Ancillary Data for Improving Post-Image Classification of Mixed Hardwoods"

PROFESSIONAL ACTIVITIES:

Session Organizer, AAG, Boston, Applied Geography in Academia: Content, Curricular, Status, Methods, and Future.

Member, Outside Review Panel, Southwest Indian Polytechnic Institute, Geospatial Information Systems Program

Member, Outside Review Panel, TVI, GIS program
Member, Outside Review Panel, San Juan College, GIS program
Teacher Training, New Mexico Geographical Alliance, Summer, 1999, 2000
Visiting Professor, Indiana State University, NSF Summer GIS Program, 1997
Teacher Training, Ohio Geographical Alliance, Summer, 1992
Visiting Geographical Scientist, AAG/GTU, 1988-1989, 2003

PROFESSIONAL ACTIVITIES: CONSULTING

Education Consultant, Expert Reviewer, Proof of Concept for LEVERS learning validation system, CB Technology, 2015-present

Virtual World Consultant, Los Alamos National Laboratories, 2012-13

GIS Workshop Consultant, 1105 Media Corporation, Inc., 2008-9

GIS Education Consultant, GIS in Higher Education, Environmental Systems Research Institute, Spring 1998-present.

GIS Consultant, El Paso Electric Corporation, Introduction to Geographic Information Systems and AM/FM for managing their operations, (Spring 1997)

GIS Consultant, Botanical Research Institute of Texas, Review of Needs for GIS Implementation and Hiring, (Spring, 1994).

GIS Consultant, Lake Erie Geographic Information System, Product-Level Design Study, Funded by the Ohio Department of Natural Resources. (Summer, 1993)

SKILLS

Experienced in online teaching, field mapping techniques, air photo interpretation, digital image processing, radar image interpretation, image segmentation, and geographic information system applications using ArcView 3.x (with extensions), ArcGIS 10, ArcGIS Pro, Geomedia Professional, Softchalk, Articulate, Blender, Unity3D, Unity, Maya, Mudbox, Python.