

Jeffrey D. Hamerlinck

Education

- 1988 **Bachelor of Science**, Geography, *magna cum laude*, University of North Dakota
Grand Forks, North Dakota
- 1992 **Master of Planning**, University of Wyoming
Laramie, Wyoming
- 2002 - **Doctoral Candidate**, Department of Geography, University of Colorado
Boulder, Colorado (degree anticipated 2006)

Academic Positions

- 2004-Present **Director**, Wyoming Geographic Information Science Center, University of Wyoming
- 2001-Present **Associate Director**, Wyoming Geographic Information Science Center, University of Wyoming
- 2000-2001 **Interim Director**, Spatial Data and Visualization Center, University of Wyoming
- 1999-2000 **Acting Co-Director**, Spatial Data and Visualization Center, University of Wyoming
- 1997-Present **Research Scientist**, Spatial Data and Visualization Center, University of Wyoming
- 1996-1999 **Technical Coordinator**, Spatial Data and Visualization Center, University of Wyoming
- 1994-1998 **GIS Coordinator**, Wyoming Water Resources Center, University of Wyoming
- 1994-1997 **Assoc. Research Scientist**, Wyoming Water Resources Center, University of Wyoming
- 1992-1994 **Research Associate II**, Wyoming Water Resources Center, University of Wyoming

Honors and Awards

Member, Phi Kappa Phi honor society (1991); Inaugural Recipient, B.L. Wills Memorial Geography Scholarship, Univ. of North Dakota (1986); Member, Gamma Theta Upsilon geography honor society (1986); University Scholarship, University of North Dakota (1984-1988)

Office in Professional Societies

Secretary, University Consortium for Geographic Information Science (UCGIS), 2000-2001; Continuing Education Coordinator, Wyoming Planners Association, 1999-2000; Chair, Wyoming Geographic Information Advisory Council, 1998-1999; Council Member, University Consortium for Geographic Information Science (UCGIS), 1996-2001
Chair, WGIAC Standards Committee, 1995-2000; Vice Chair, Wyoming Geographic Information Advisory Council (WGIAC), 1995-1996; Council Member, Wyoming Geographic Information Advisory Council (WGIAC), 1995-2001

Current Memberships in Professional Societies

American Planning Association; Association of American Geographers; University Consortium for Geographic Information Science; Western Planners Association; Wyoming Geographic Information Advisory Council; Wyoming Planners Association

Recent Synergistic Activities

Wyoming CommunityViz Partnership, 2001-present. Principal investigator developing a proposal to establish a planning support system technology transfer center at the University of Wyoming; goal is to promote use of geospatial technologies in community.

NatureServe Biodiversity and Land Use Planning Decision Support System Design Team, 2001-2004. Planning specialist on a multidisciplinary team developing a decision support tool to incorporate biological considerations into the local land use planning process.

US Forest Service, Region II Wetland, Aquatic and Riparian Assessment Team, 2000-present. GIS specialist on a multidisciplinary team of scientists involved in developing a protocol for conducting broad-scale assessments for aquatic ecosystems as part of a region-wide species conservation planning process.

Greater Yellowstone Area NSDI Initiative, 1996-1998. PI on effort to promote National Spatial Data Infrastructure implementation for multi-jurisdictional management throughout the GYA.

Publications

Refereed Journal Articles and Conference Proceedings:

Berelson, W.L., P.A. Caffrey and J.D. Hamerlinck. *Mapping Hydrologic Units for the National Watershed Boundary Dataset*. Submitted to the *Journal of American Water Resources Association*.

Hoobler, Beth M., G.F. Vance, J.D. Hamerlinck, L.C. Munn, and J.A. Hayward. 2003. *Applications of land evaluation site assessment (LESA) and a geographic information system (GIS) in East Park County, Wyoming*. *Journal of Soil and Water Conservation* 58 (2): 105-112

Berendsen, M.E., J.D. Hamerlinck, and L. Wayne. 2003. *Framework and strategies for integrating metadata concepts with geographic information science curricula*. *URISA Journal*, 15 (1): 37-46.

Reddy, K.J., C.S. Arneson, and J.D. Hamerlinck. 1997. Assessment of groundwater vulnerability ratings for nitrate and pesticides in intensively agricultural areas. In *Proceedings of the 4th International Conference on the Biogeochemistry of Trace Elements held at the University of California, Berkeley, California, June 1997*, edited by I.K. Iskandar, S.E. Hardy, C.A. Chang, and G.M. Pierzynski, by the U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire: U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory, 603-604.

Hamerlinck, J.D. and J.R. Oakleaf. 1997. Utilizing geographic information systems technology in the Wyoming cumulative hydrologic impact assessment modeling process. In *Vision 2000 - An Environmental Commitment: Proceedings of the 14th Annual National Meeting of the American Society for Surface Mining and Reclamation held in Austin, Texas, May, 1997*, edited by J.E. Brandt. Princeton, West Virginia: American Society for Surface Mining and Reclamation, 667-676.

Hamerlinck, J.D. 1997. WaterDivII GIS: Prototype toolbox for dynamic water planning in Wyoming. In *Proceedings, Wyoming Water '97 held in Casper, Wyoming, April, 1997*, edited by C. Goertler, by the Wyoming Water Resources Center. Laramie, Wyoming: Wyoming Water Resources Center, 38-42.

Oakleaf, J.R. and J.D. Hamerlinck, J.D. 1997. Integrating GIS technology into ground water and surface water modeling associated with Wyoming's cumulative hydrologic impact assessment process. In *Proceedings, Wyoming Water '97 held in Casper, Wyoming, April, 1997*, edited by C. Goertler, by the Wyoming Water Resources Center. Laramie, Wyoming: Wyoming Water Resources Center, 25-33.

Zhang, R., J.D. Hamerlinck, S.P. Gloss, and L. Munn. 1996. Determination of nonpoint-source pollution using GIS and numerical models. *Journal of Environmental Quality* 25 (3): 411-418.

Gribb, W.J. and J.D. Hamerlinck. 1990. A micro-scale analysis of recreational facilities location: A case study of Grayrocks Reservoir, Wyoming. *Great Plains-Rocky Mountain Geographical Journal* 18 (December): 90-101.

Other Relevant Publications

- Winters, D.S. and others. 2003. *Aquatic, Riparian, and Wetland Ecosystem Assessment: Bighorn National Forest, Wyoming*. USDA Forest Service, Rocky Mountain Region: Golden, CO. 352 pp. (contributor)
- Gribb, W.J., S. F. Robinson, and J.D. Hamerlinck. 2001. Applying ArcView Spatial Analyst software's ModelBuilder to habitat conservation planning. In *Geography Creating Communities: Proceedings of the 21st Annual ESRI User Conference held in San Diego, California, July 2001*, by Environmental Systems Research Institute, Inc., Redlands, California: Environmental Systems Research Institute, Inc., CD-ROM Paper No. 788.
- Johnson, J.H., J. D. Hamerlinck, and J.H. Gillham. 2001. An ArcView-based application for the management of noxious weed species in Wyoming. In *Geography Creating Communities: Proceedings of the 21st Annual ESRI User Conference held in San Diego, California, July 2001*, by Environmental Systems Research Institute, Inc., Redlands, California: Environmental Systems Research Institute, Inc., CD-ROM Paper No. 770.
- Hamerlinck, J.D., M.E. Anderson, J.H. Johnson, K.T. Peacock, and G.E. Jones. 1999. *Methodology for the design and development of a GIS-Based spatial decision support system for assessing the hydrologic impacts of coal mining and mine land reclamation in Wyoming*. Laramie, Wyoming: Spatial Data and Visualization Center, University of Wyoming. SDVC Report 99-01
- Scarrah, P.R. and J.D. Hamerlinck. 1998. Development of the Greater Yellowstone Area Data Clearinghouse. In *Geography Matters: Proceedings of the 18th Annual ESRI User Conference held in San Diego, California, July 1998*, by Environmental Systems Research Institute, Inc. Redlands, California: Environmental Systems Research Institute, Inc., CD-ROM Paper No. 220.
- Hamerlinck, J.D. and K.S. Gallander. 1998. Applying NSDI framework principles in the Greater Yellowstone Area, USA. In *Pathways to Knowledge Integration: Proceedings of GIS '98/RT '98 held in Toronto, Canada, April 1998*, by Adams/GIS World. Fort Collins, Colorado: GIS World, Inc., 372-375.
- Kohley, T.W., J.D. Hamerlinck, M.E. Herdendorf, P. Crist, and S.P. Gloss. 1998. *The Wyoming BioInformation Node: A state-level implementation of the National Biological Information Infrastructure*. Laramie, Wyoming: Spatial Data and Visualization Center, University of Wyoming. SDVC Report 98-02
- Hamerlinck, J.D. and C.S. Arneson, eds. 1998. *Wyoming ground water vulnerability assessment handbook*, Vol. II, *Assessing ground-water vulnerability to pesticides*. Laramie, Wyoming: Spatial Data and Visualization Center, University of Wyoming. SDVC Report 98-01-2
- Hamerlinck, J.D. and C.S. Arneson, eds. 1998. *Wyoming ground water vulnerability assessment handbook*, Vol. I, *Background, model development, and aquifer sensitivity analysis*. Laramie, Wyoming: Spatial Data and Visualization Center, University of Wyoming. SDVC Report 98-01-1
- Hamerlinck, J.D. 1998. *Wyoming statewide water resources data inventory*, Vol. XIV, *Socioeconomic data sources – statewide by agency*. Laramie, Wyoming: Wyoming Water Resources Center.
- Arneson, C.S. and J.D. Hamerlinck. 1996. *Enhancing Wyoming's Underground Injection Control Program database and geographic information system*. Laramie, Wyoming: Wyoming Water Resources Center. WWRC-96-14

CONTRACTS & GRANTS

Funded Projects as Principal Investigator:

- 2003-2004 *GMUG-San Juan National Forest Aquatic Resource Assessment*. PI: J.D. Hamerlinck. U.S. Forest Service funding. \$54,072.
- 2002-2003 *Wyoming Natural Resources Data Clearinghouse/OGC Web Mapping Service Implementation*. PI: Hamerlinck, J.D. CoPIs: M.E. Berendsen and J.R. Oakleaf. Federal Geographic Data Committee FY 2002 Cooperative Agreements Program. \$19,968.
- 2002-2003 *Wyoming CommunityViz Partnership, Phase I – Albany County Pilot Project*. PI: Hamerlinck, J.D. CoPI: D. Hulme. Wyoming Business Council and Wyoming Community Foundation funding. \$60,000.
- 2001-2004 *Bighorn National Forest Aquatic Resource Assessment*. PI: Hamerlinck, J.D. U.S. Forest Service funding. \$128,061.
- 2001-2002 *Development of an Interactive Geologic, Hydrologic, and Water Quality Database, Northern Powder River Basin, Wyoming*. PI: Hamerlinck, J.D. CoPIs: J.H. Johnson and W.A. Reiners. Wyoming State Geologic Survey funding. \$80,000.
- 2000-2002 *Development of a Desktop GIS Application in Support of Erosion Potential Modeling in the Powder River Basin, Wyoming*. PI: Hamerlinck, J.D. CoPIs: J.H. Johnson and G.V. Wilkerson. Wyoming Water Development Commission Coal Bed Methane Research Projects funding. \$19,982.
- 2000-2001 *BLM Master Title Plat Development*. PI: Hamerlinck, J.D. USDI Bureau of Land Management funding. \$33,000.
- 2000-2001 *Wyoming Sourcewater Assessment Program: Global Positioning System-Based Mapping of Public Water System Facilities in Wyoming III*. CoPI: J.H. Johnson. Wyoming Department of Environmental Quality funding. \$33,000.
- 2000-2001 *Coal Bed Methane Reservoir Management GIS Database*. PI: Hamerlinck, J.D. CoPIs: J.H. Johnson. USDI Bureau of Land Management funding. \$31,000.
- 2000 *GIS-Based Fence Database for Southwest Wyoming*. Wyoming Wildlife Federation funding. \$6,453.
- 1999-2000 *Wyoming Sourcewater Assessment Program: Wellhead Protection Area Delineation Digitization*. CoPI: H.P. Heasler. Wyoming Department of Environmental Quality funding. \$12,818.
- 1999-2001 *Delineation of 5th and 6th Level Watersheds in Wyoming*. CoPI: H.P. Heasler. Wyoming Department of Environmental Quality and USDI Bureau of Land Management funding. \$233,218.

- 1999-2000 *Prototype Development of a Spatial Decision Support System for Weeds Management.* CoPI: H.P. Heasler. USDI Bureau of Land Management funding. \$25,000.
- 1999-2000 *Development of an FGDC-Compliant NSDI Data Clearinghouse for the Bureau of Land Management in Wyoming.* CoPI: H.P. Heasler. USDI Bureau of Land Management funding. \$25,000.
- 1999-2000 *Wyoming Sourcewater Assessment Program: Global Positioning System-Based Mapping of Public Water System Facilities in Wyoming II.* CoPI: H.P. Heasler. Wyoming Department of Environmental Quality funding. \$31,128.
- 1999-2000 *Developing an Enhanced Framework for Visualization and Distribution of Digital Spatial Water Resources Data in Wyoming.* CoPIs: C.S. Arneson and H.P. Heasler. US Geological Survey Water Resources Research Institute Program funding. \$37,448.
- 1998-1999 *Opportunity and Foundation for a Multi-Agency Planning Effort in Kelly, Wyoming.* CoPI: K. S. Gallander. Grand Teton National Park and Teton County, Wyoming funding. \$5,235.
- 1998-1999 *FGDC Metadata Training Project: Development of a Course Material Package and Marketing Strategy for the Geospatial Data Community.* CoPI: M.E. Herdendorf-Berendsen. Federal Geographic Data Committee and University Consortium for Geographic Information Science funding. \$19,812.
- 1997-1998 *Geologic Mapping Support.* Wyoming State Geological Survey funding. \$2,300.
- 1997-1998 *Greater Yellowstone Area National Spatial Data Infrastructure Initiative: County Outreach Program.* Federal Geographic Data Committee and USDI National Park Service funding. \$25,540.
- 1997-1998 *Greater Yellowstone Area National Spatial Data Infrastructure Initiative: Kelly, WY Framework Demonstration Project.* Federal Geographic Data Committee and USDI National Park Service funding. \$9,960.
- 1996-1998 *Greater Yellowstone Area National Spatial Data Infrastructure Initiative: Snake River Corridor Geospatial Data Node.* CoPI: T.W. Kohley. Federal Geographic Data Committee and USDI National Park Service funding. \$35,000.
- 1996-1998 *Wyoming Open Lands GIS Collaboration.* CoPIs: J.R. Oakleaf, and S.P. Gloss. Wyoming Open Lands Project funding. \$5,000.
- 1996-1998 *Development of a GIS-Based Decision Support System for CHIA/PHC Mine Hydrology Modeling.* CoPIs: J.R. Oakleaf, T.J. Anderson, and K. Peacock. Wyoming Abandoned Coal Mine Land Research Program funding. \$119,839.

- 1997-1998 *A Spatial Decision Support System and Database Development for Wetland Management and Mitigation Banking in Wyoming.* CoPIs: J.R. Oakleaf, and C. Goertler. Wyoming Water Resources Center State Grants-in-Aid funding. \$23,155.
- 1995-1996 *Global Positioning System-Based Mapping of Public Water System Facilities in Wyoming.* CoPI: J.R. Oakleaf. Wyoming Department of Environmental Quality/Water Quality Division funding. \$53,000.
- 1996-1999 *Assessing Vulnerability of Aquifers in Wyoming to Contamination, Phase IV: Statewide Intermediate-Scale Vulnerability Mapping using a Geographic Information System.* CoPI: C.S. Arneson and others. Wyoming Department of Environmental Quality/Water Quality Division and USEPA funding. \$187,913.
- 1995-1997 *Wyoming Initiative: CHIA/GIS Integration.* CoPI: J.R. Oakleaf. Wyoming Department of Environmental Quality/Land Quality Division and USDI Office of Surface Mining funding. \$15,823.
- 1995-1998 *Snake River Basin Water Resources Geographic Information System.* CoPI: T.W. Kohley. Wyoming Water Resources Center State Grants-in-Aid funding. \$57,525.
- 1994 *GIS Technical Assistance: Phase One of the Search for South Pass City.* Wyoming State Archaeologist's Office funding. \$750.
- 1993-1995 *Development of a Water Use Inventory Geographic Information System for River Basin Planning in Wyoming.* CoPIs: S. Needham, and V.R. Hasfurther. Wyoming Water Resources Center State Grants-in-Aid funding. \$57,525.
- 1992-1993 *Underground Injection Control GIS Mapping.* CoPI: S. Needham. Wyoming Department of Environmental Quality/Water Quality Division and USEPA funding. \$54,604.

Funded Projects as Co-Principal Investigator:

- 2002-2004 *Design and Development of an Interagency Coal-Bed Methane Information Clearinghouse in Wyoming, Phase I.* PI: Bergman, H. L. CoPIs: W.A. Reiners, D. J. Hulme, and J.D. Hamerlinck. USDI Bureau of Land Management funding \$60,000.
- 2002-2003 *Evaluation of Effects of Land Application of Coal Bed Methane produced water on Powder River basin Soils, Powder River Basin, Wyoming and Montana.* PI: Vance, G.F. CoPIs: L.C. Munn, R. Zhang, J.D. Hamerlinck, and B.K. Schladweiler. USDI Bureau of Land Management funding. \$143,500.
- 2001-2002 *National Hydrography Dataset Creation and Attribution, Pinedale Resource Area.* PI: Caffrey, P.A. CoPIs: W.L. Berelson and J.D. Hamerlinck. USDI Bureau of Land Management funding. \$92,000.

- 2001-2002 *Statewide Groundwater Protection Strategy, Phase II.* PI: Bedessem, M.E. CoPI: J.H. Johnson and J.D. Hamerlinck. Wyoming Department of Environmental Quality funding. \$41,741.
- 2001-2002 *GIS for Nonnative Fish Stocking.* PI: Nibbelink, N.P. CoPI: J.D. Hamerlinck. Colorado Division of Wildlife funding. \$39,000.
- 2001 *Watershed Boundary Dataset Acceleration and NHD Integration Pilot.* PI: W.L. Berelson CoPIs: P A. Caffrey and J.D. Hamerlinck. USDI Bureau of Land Management funding. \$26,405.
- 2000-2004 *Phytoremediation of Petroleum Contaminated Soil on the BP-Amoco Tank Farm.* PI: Stahl, P.D. CoPIs: K.J. Reddy, J.D. Rodgers, D.W. Johnson, M.E. Bedessem, J.H. Johnson, J.D. Hamerlinck, and B.L. Perryman. BP-Amoco funding. \$527,892.
- 2000-2002 *Development of a Decision Support System and Databases for Agrochemical Management.* PI: Zhang, R. CoPIs: J.D. Hamerlinck, S. Mishra, L.C. Munn, and G.F. Vance. Wyoming Agricultural Experiment Station Competitive Grant Program funding. \$45,000.
- 2000-2002 *Development of Improved Digital Elevation Models for Burger Draw and Deadhorse Creek, Powder River Basin, Wyoming.* PI: Wilkerson, G.V. CoPIs: L.S. Clampitt and J.D. Hamerlinck. Wyoming Water Development Commission Coal Bed Methane Research Projects funding. \$4,575.
- 1999-2001 *Research and Development of a GIS-Based Data Management and Model Integration Tool for Coal Mine Permitting and Reclamation in Wyoming.* PI: Kohley, T.W. CoPIs: R.C. Warner, P.J. Schwab, G.E. Jones, and L.E. Vicklund. Wyoming Abandoned Coal Mine Land Research Program funding. \$149,917.
- 1997-2000 *Wyoming Agricultural and Land-Resource Management: GIS and LESA Applications for Developing New Agricultural Commodities and Land Uses.* PI: Vance, G.F. CoPIs: E.R. Hunt, L. Munn, and J.A. Young. Wyoming Agricultural Experiment Station Competitive Grant Program funding. \$60,000.
- 1997-1998 *Wyoming Water Resources Data Inventory: A Preliminary Assessment of Available Data in Support of Statewide, Comprehensive Water Resource Planning Efforts.* PI: Lawrence, B.B. Wyoming Water Development Commission funding. \$31,056.
- 1997-1998 *GIS Support for Watershed-Based Resource Management.* PI: Kohley, T.W. Wyoming Department of Game and Fish funding. March 1997-June 1998. \$8,432.
- 1997-1998 *Mapping Drought in Wyoming Using the Standard Precipitation Index and the Surface Water Supply Index.* PI: Arneson, C.S. CoPIs: V.R. Hasfurther, and J.G. Hiller. Wyoming Water Resources Center State Grants-in-Aid funding. \$14,042.

- 1996-1998 *Development of an NBII Wyoming BioInformation Node*. PI: Kohley, T.W. CoPIs: P.J. Crist and M.D. Jennings. U.S. Geological Survey, Biological Resources Division funding. \$77,000 (\$37,000 to UW; \$30,000 to National GAP).
- 1994-1995 *Development of a Spatial Decision Support Tool for Watershed Managers using Distribution and Conservation Status Data for the Colorado River Cutthroat Trout*. PI: Needham, S. CoPI: T.W. Kohley. USDA Forest Service Region II Fish Habitat Relationships Program funding. \$12,540.
- 1994-1995 *Assessing Vulnerability of Aquifers in Wyoming to Contamination, Phase III: Vulnerability Mapping for Natrona, Campbell, Sweetwater and Uinta Counties Using a Geographic Information System*. PI: Needham, S. CoPI: S.P. Gloss. Wyoming Department of Environmental Quality/Water Quality Division and USEPA funding. \$44,934.
- 1991 *Afton Master Plan Background Study*. PI: Gribb, W.J. City of Afton, Wyoming funding. \$6,577.

Geospatial Workshop and Symposium Organization, Development and Instruction

- 2002 *Geospatial Information and Applications in the Greater Yellowstone Area: Decision Support for Community-Scale Planning*, program committee. Sponsored by the University of Wyoming Institute for Environment and Natural Resources, and NatureServe. Jackson, WY, February 2002
- 2000 *Geographic Information System Applications in Mine Land Reclamation*, with T.W. Kohley and G. Jones. Billings Land Reclamation Symposium 2000, Billings, Montana, March 2000.
- 2000 *Spatial Technology Applications for Resource Management and Agriculture in Wyoming*, with H.P. Heasler and J.H. Johnson. University of Wyoming Cooperative Extension Service Training Session, Laramie, Wyoming, January 2000. (Invited)
- 1999 *UCGIS / FGDC Metadata Educational Materials Workshop*, co-organizer with M. Herdendorf, R. Pearsall, and B. Poore. Reston, VA, June 1999
- 1999 *Introduction to Geographic Information Systems: Applications in Agriculture*, with W.L. Berelson. Agricultural Experiment Station Research and Extension Center Annual Meeting, University of Wyoming, Laramie, Wyoming, January 1999. (Invited)
- 1998 *Introduction to Geographic Information Systems: Concepts and Technology*. Wyoming Water Development Association Water Resources Education Seminar, Casper, Wyoming, October 1998. (Invited)
- 1998 *Global Positioning System Technologies: Mapping Applications in Watershed Management*. Peaks to Prairies: A Conference on Watershed Stewardship. Coordinated by Thorne Ecological Institute. Rapid City, South Dakota, September 1998. (Invited)
- 1998 *Geographic Information Systems Technology for Natural Resource Management in Wyoming*. Wyoming Cooperative Extension Service, Extension Professional Improvement Conference, Jackson, Wyoming, April 1998. (Invited)
- 1998 *GYA County GIS Implementation Workshop*, with P. Scarrah. Greater Yellowstone Area NSDI Initiative County Outreach Program, Jackson, Wyoming, January 1998.
- 1997 *Geographic Information Systems: Concepts, Technology and Applications – A Workshop for Managers, Engineers, and Environmental Scientists in Mining and Reclamation*, with G. Jones. Sponsored by the Wyoming Abandoned Coal Mine Land Reclamation Program. Gillette, Wyoming, November 1997. (Invited)
- 1997 *Natural Resource Conservation Service GIS Awareness Training*. UW Spatial Data and Visualization Center, Laramie, Wyoming, August 1997. (Invited)
- 1997 *County GIS Needs Assessment Workshop*, with P. Scarrah and G. Burton. Greater Yellowstone Area NSDI Initiative County Outreach Program, Jackson, Wyoming, July 1997.

- 1997 *Wyoming Ground Water Vulnerability Mapping Project*, with C. Arneson. Wyoming Water '97 Conference, Casper, Wyoming, April 1997.
- 1996 *Introduction to Geographic Information Systems: Concepts and Technology*. Wyoming Water Development Association Water Resources Education Seminar, Casper, Wyoming, October 1996. (Invited)
- 1997 *GIS Applications in Surface Mining and Reclamation*. 14th Annual National Meeting of the American Society for Surface Mining and Reclamation, Austin, Texas, May 1997.