

## **Curriculum Vita**

Denis Joseph Dean

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### **Current Positions:**

*2008-Present* Professor and Head, Geospatial Information Sciences Program, School of Economic, Political and Policy Science, University of Texas at Dallas

### **Previous Academic Positions:**

*1997-2008* Associate Professor of Geospatial Sciences, Department of Forest, Range and Watershed Stewardship, College of Natural Resources, Colorado State University  
*1992-1997:* Assistant Professor of Geospatial Sciences, Colorado State University  
*1991-1992:* Postdoctoral Research Associate, Virginia Polytechnic Institute and State University  
*1990-1991:* Graduate Research Associate, Virginia Polytechnic Institute and State University  
*1988-1990:* Graduate Teaching Associate, Virginia Polytechnic Institute and State University  
*1987-1988:* Graduate Research Associate, Virginia Polytechnic Institute and State University  
*1985-1987:* Graduate Research Associate, The Pennsylvania State University

### **Education:**

*1987-1991* Ph.D. Computer Applications in Forestry. Virginia Polytechnic Institute and State University.  
*1984-1987* Forestry Economics and Planning/Operations Research. The Pennsylvania State University.  
*1980-1984* B.S. Forest Recreation Management. Virginia Polytechnic Institute and State University.

**Other Appointments:**

- 2004-Present* Co-chair of Colorado State University's Information Science and Technology Center (ISTeC) (<http://istec.colostate.edu/>) research advisory committee.
- 2004-Present* Executive committee member of the Colorado State University's Information Science and Technology Center (ISTeC) (<http://istec.colostate.edu/>).
- 2003-Present* College of Natural Resources representative on the University's Information Science and Technology Center (ISTeC) (<http://istec.colostate.edu/>) research committee.
- 2001-Present* Member of the Colorado State University's President's committee of web-based instruction.
- 1996-Present* Member of the graduate faculty, Centro Agronomico Tropical De Investigacion Y Ensenanza (CATIE), Turrialba, Costa Rica.
- 2001-2006* Director, Remote Sensing/GIS Program, Colorado State University
- 2001-2006* Director, Interdisciplinary Graduate Certificate in Geospatial Sciences Program, Colorado State University
- 1998-2002* GIS Advisory Committee, Aims Community College.
- 1996-2005* Chairman, College of Natural Resources Computer Technology Committee.
- 1995-1996* Department of Forest Sciences Representative to the College of Natural Resources Computer Technology Committee.
- 1994-1997* GIS Data Committee co-chairman, Colorado Rockies Regional Cooperative.

**Teaching Experience:**

- 2008-Present:* Redesigned and taught Geographic Information Science Theories, Models and Issues, a current topics class in the University of Texas at Dallas' graduate GIScience curriculum.
- 2002-2008:* Redesigned and taught Intermediate GIS (NR422), the follow-on to Colorado State University's Introduction to GIS class (NR322).
- 2001-2008:* Redesigned and taught Colorado State University's Remote Sensing/GIS seminar for undergraduates (NR493).
- 2001-2008:* Redesigned and taught Colorado State University's Remote Sensing/GIS seminar for graduates (NR793).
- 1992-2008:* Designed and taught Design of Geographic Information Systems (NR621), Colorado State University's graduate capstone course in geographic information science.
- 1992-2008:* Designed and taught Introduction to Geographic Information Science (NR322), Colorado State University's primary undergraduate-level introductory GIS class.
- 2000-2003:* Designed and taught Geomatics for Foresters (F319), a class designed to expose Colorado State University's undergraduate forestry students to basic concepts of Remote Sensing, GPS, GIS and spatial statistics.
- 2001-2002:* Designed Geodesy, Cartography and Map Reading (NR502), a web-based class ([url: http://www.cnr.colostate.edu/class\\_info/nr502](http://www.cnr.colostate.edu/class_info/nr502)) intended to introduce Colorado State University graduate students to the basics of geospatial sciences. This class was cancelled in 2002, but the first third of the class material is still available on the web. This material continues to generate positive feedback from individuals from all over the world. A recent issue of the *ACSM Bulletin* cites these pages as a "definitive information source with excellent graphics" (*ACSM Bulletin* no. 225, February 2007, page 53).

**Teaching Experience (Continued):**

- 2001-2002: Designed Introduction to Geodesy, Cartography and Map Reading (NR302), a web-based class intended to introduce undergraduate students to the basics of geospatial sciences. This class was cancelled in 2002, and its material was incorporated into NR502.
- 1992-1998: Co-taught Integrated Ecosystem Management (NR420), the Colorado State University's capstone undergraduate class for students from all majors within the Warner College of Natural Resources.
- 1988-1990: Graduate teaching assistant for Natural Resource Recreation Planning (F3032), Virginia Polytechnic Institute and State University's undergraduate recreation planning class.

**Teaching Evaluations:**

- Colorado State University's Office of Instructional Services conducts end-of-semester student surveys in virtually all regular classes offered on the main CSU campus. These surveys ask students 16 questions relating to the quality of the class, the quality of the instructor, and the quality of class administration. Student responses are on a five-point Likert scale, where the most positive response has a scale value of five and the lowest a value of one. With over 800 evaluations spanning 15 years, my average rating for each of these 16 questions have consistently been between 4.5 and 5.0.
- Each year, the head of my academic department is required to rate the quality of each faculty member's teaching. Over the 15 years I have been at Colorado State University, four different department heads (whose tenures spanned twelve years) each rated my teaching as either *excellent* (which is the highest possible rating) or *very good* (the second highest rating). One department head gave me teaching lower evaluations (*average*), but this stemmed from a dispute over teaching loads, not over the quality of my teaching.
- In 2001 and again in 2004, students in the Natural Resources dormitory on campus voted me their favorite teacher from the College of Natural Resources.

**Other Teaching Related Activities:**

- I have taught over 30 local, state, national and international workshops (on four continents) on various geospatial science topics to professional groups including scientists and managers representing various state, federal and local government entities, business groups, and university faculty and students.
- Designed the curriculum for Colorado State University's undergraduate minor in geospatial sciences.
- Designed the curriculum for Colorado State University's graduate level certificate in geospatial science.
- I have taught numerous graduate- and undergraduate-level special topics and independent studies classes to individuals and small groups of students. These special classes have covered topics including basic remote sensing, geospatial statistics, geodesy, cartography, computer programming, and so on.

**Undergraduate Advising:**

- Over 15 years, I have advised nearly 300 undergraduate students in two majors (forestry and natural resource management). Since the 1996 introduction of the undergraduate minor in spatial information science (SIMS) and until 2001, I was one of only two faculty to advise students taking this minor. Since 2001, the number of faculty advising students in this capacity has grown, but I am still advising up to 25 SIMS students each semester, in addition to the 10 to 15 forestry and natural resource management students I advise each semester.

**Graduate Advising:**

- I carry a heavy graduate advising load, typically having two Ph.D. and four to six MS students at any one time. Since my arrival at Colorado State University in November of 1992, a total of 27 of my advisees have graduated with MS degrees and 5 have graduated with Ph.D. degrees (see table below).

Last Name	First Name	Degree	Year	Thesis / Dissertation Title
Alkharraz	Abdul	MS	2001	Using remote sensing techniques to monitor desertification: A case study in Qatar
Blackard	Jock	Ph.D.	1998	Comparison of neural networks and discriminant analysis in predicting forest cover types
Boyack	Gary	MS	1998	Evaluation of the spatial accuracy and precision information available in the Wyoming Geographic Coordinate Database (GCDB)
Brandis	Anna	Ph.D.	2005	Evaluation of a hybrid kriging/artificial neural network spatial interpolator
Celio	Clint	MS	1998	Modeling of heavy metal pollutants in the Upper Arkansas River Basin using geographic information systems (GIS)
Davis	Brett	MS	2001	Identifying likely wildfire ignition points using topographic analysis, statistical investigations, and artificial intelligence
Duran	Johnathan	MS	1996	<i>B Non-Thesis (Plan C) option B</i>
Ferner	Christina	MS	2003	A comparison of the accuracy of artificial neural networks and regression analysis in predicting probable lightning strike locations
Fox	Andrew	MS	2004	Absolute accuracy assessment of high resolution digital terrain models created using digital photogrammetric techniques
Furaus	Mark	MS	1995	Limitations to future urbanization in the semi-arid western United States : a study of municipal water supply requirements
Geer	Susannah	MS	2002	Non-native plant invasions along roads in the Rocky Mountain National Park, Colorado and Surrounding Area
Haire	Sandra	MS	1998	Spatial factors influencing bird distribution in grasslands near Boulder, Colorado
Heimiller	Dona	MS	1995	<i>B Non-Thesis (Plan C) option B</i>
Howe	Rodney	MS	1997	Mitigation strategies for managing brucellosis in the Jackson Bison Herd
Hughes	Elaine	MS	2002	Neural networks as an alternative to statistical modeling in the semivariogram analysis portion of kriging procedures
Islas-Gutierrez	Fabian	Ph.D.	1996	A timber harvest unit delineation model to minimize soil erosion
Jan	Jihn-Fa	Ph.D.	1997	Classification of remote sensing data using adaptive machine learning techniques

**Table Continued on Next Page**

**Graduate Advising – Past Graduate Students (Continued):**

Last Name	First Name	Degree	Year	Thesis / Dissertation Title
Litschert	Sandra	MS	2001	A comparison of genetic programming and linear discriminant analysis techniques to identify regions at risk for landslides
Lizarraga	Alicia	MS	1996	Predicting and modeling aesthetic quality of forests as a function of distances from clearcuts
Maloy	Mark	MS	1999	Accuracy of raster and triangulated irregular network techniques in viewshed delineation
McFadden	Joseph	MS	2007	Distribution line siting model for rural mountain areas using GIS-based least cumulative cost analysis
Miller	Ryan	MS	2001	Determining differences in the spatial distribution of forest structure on the Kaibab Plateau: implications for forest management and the northern goshawk
Neufeld	David	MS	1998	Developing a resource tool for visualizing and analyzing forest planning options
Olson	Keith	MS	2006	Development and evaluation of a spatial index measuring upstream contributions to riparian ecosystem quality
Pendley	Trisha	MS	1996	The utilization of remote sensing and GIS technologies to test for spatial association between campsites and spotted knapweed in the Bob Marshall Wilderness
Peters	Brian	MS	1995	Automated ridge identification in mountainous areas and a comparison to manual ridge identification
Poston	Erin	MS	2001	Development of models to estimate coarse woody biomass in a large-scale windthrow disturbance
Riggs	Philip	MS	2004	Elevation data errors, spatial resolution, and software algorithm effects on geographic information system (GIS) predicted viewsheds
Russell	Heidi	MS	2005	GIS in the Larimer County noxious weed eradication program ( <i>professional paper</i> )
Smith	Pete	MS	2001	Derivation of area Dependent Adjacency Constraints Using GIS Analysis
Stenson	Jerry	MS	1997	Localized indirect economic impacts of natural hazards
Valdez-Lazalda	Jose Rene	Ph.D.	2001	Optimal Spatial Locations of Forest Fuel Management Activities

- I currently have 5 advisees pursuing masters and Ph.D. degrees:

Last Name	First Name	Degree	Expected Year	Planned Thesis / Dissertation Title
Canney	Lindsey	MS	2008	<i>Undecided, plans to continue the kriging/ANN studies conducted by Anna Brandis.</i>
Giles	Terry	MS	????	Investigation of the ability of genetic programming techniques to recreate spatial databases
Kraus	Brian	MS	2008	<i>Undecided, plans to work in the area of comparing statistical- and ANN-based riparian models</i>

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**Graduate Advising – Current Graduate Students (Continued):**

Last Name	First Name	Degree	Expected Year	Planned Thesis / Dissertation Title
Mackie	Steve	MS	2008	Effects of DEM errors and resolutions on predicted slope and aspect measures.
Riggs	Philip	Ph.D.	2007	Spatial distribution models of pesticide exposure and dosage

- In addition to the graduate advisees mentioned in the preceding tables, I have advised approximately 25 students who have completed the graduate certificate in geospatial sciences (a coursework only program designed both to act as a Agraduate level minor@ for MS and Ph.D. students in other fields who wish to gain expertise in the geospatial sciences and as a professional certificate for people wanting post-baccalaureate geospatial experience without pursuing a graduate degree). I currently advise 4 students who are actively pursuing the certificate.
- I have served on over 40 graduate committees of students who are not my advisees, both within my home department and in other departments. These departments include Anthropology, Business Administration, Chemical and Bioresource Engineering, Civil and Environmental Engineering, Computer Science, Earth Resources, Economics, Fisheries and Wildlife Biology, Natural Resource Recreation and Tourism, and Range Science.

**Administrative Experience:**

- 2004-Present:* Co-chair of the Research Advisory Committee and member of the Executive Committee of CSU's Information Science and Technology Center (ISTeC) (<http://istec.colostate.edu/>). ISTeC is a campus-wide group dedicated to promoting interdisciplinary IT research and teaching across the CSU campus. In my role with ISTeC, I have organized poster sessions (with over 100 presenters at each session) for university-wide IT research symposia, organized the inaugural and two subsequent annual retreats for CSU faculty involved in IT research, represented CSU at ISTeC industrial advisory committee meetings, and so on.
- 2001-2006:* Director of the remote sensing/GIS program. Responsible for coordinating classes and seminars, distributing information about the activities of program faculty to other faculty and administrators throughout the university, first point of contact for individuals seeking information about the program, etc.
- 2001-2006:* Director of the Graduate Certificate in Geospatial Sciences program. Responsible for tracking all students admitted into the program by all certificate advisors (there are approximately 25 advisors in at least four different colleges), approving course substitutions and waivers, approving completion of the program, interacting with the graduate school in ensuring that student records are up-to-date, etc.
- 1992-2001:* As the head of the GIS portion of the Remote Sensing/GIS Program in Colorado State University's College of Natural Resources, I coordinated the GIS teaching activities of four faculty members within the program.

**Research Interests:**

- The development of combined artificial intelligence/geospatial analysis techniques to address geospatial problems.
- The development of spatial optimization techniques.
- Accuracy evaluation of spatial analysis.
- The development of new and refinement of existing spatial statistics.

**Book Chapters Written:**

Dean, Denis J. 2002. *Geomatics for Wildlife Management*. Pages 326 – 350 in: Wildlife Viewing in North America: A Management Planning Handbook (M. J. Manfredo, editor.). Corvallis, Oregon: Oregon State University Press. 373 pages.

Chandler, Sheri K., James D. Fraser, David A. Buehler, Denis J. Dean and Janis K. D. Seegar. 1994. *Using a Geographic Information System to Analyze Bald Eagle Habitat on the Chesapeake Bay, Maryland*. Pages 327 – 345 in: Raptor Conservation Today (B. U. Meyburg and R. D. Chancellor, eds). Buteo Books: Shipman, Virginia. 799 pages.

**Peer Reviewed Journal Publications:**

Dean, Denis J. In preparation. *Detecting Spatial Correlations in the Presence of Confounding Factors*. **Cartography and Geographic Information Science**.

Dean, Denis J. and Anna Brandis. In Review. *A Kriging Variant Based on Neural Network-Derived Experimental Semivariograms*. **International Journal of GIS**.

Dean, Denis J. In Review. *Predicting Probabilities and/or Actual Binary Events: A Review of Existing GIS/Neural Network Techniques*. **International Journal of GIS**.

Denis J. Dean, Jose Valdez and Anne Sjostrom. In Review. *A Geospatial Approach to Finding Optimal Locations for Wildfire Fuel Treatments*. **Transactions in GIS**.

Schnieder, Claudio, Denis J. Dean and Roger M. Hoffer. In revision after first review. *A Combined GIS/Neural Network/Bayesian Classification System*. **International Journal of Remote Sensing**

Dean, Denis J. 2007. *Characterizing Spatial Databases via Their Derivation: A Complement to Content Ontologies*. **Transactions in GIS** 11(3): 399-412.

Riggs, Philip D. and Denis J. Dean. 2007. *An Investigation into the Causes of Errors and Inconsistencies in Predicted Viewsheds*. **Transactions in GIS** 11(2): 175-196.

**Peer Reviewed Journal Publications (Continued):**

- Dean, Denis J. and Alicia C. Lizarraga-Blackard. 2007. *Modeling the Magnitude and Spatial Distribution of Aesthetic Impacts*. **Environment and Planning B** 34: 121-138.
- Dean, Denis J. 2005. *Measuring Arrangement Similarity Between Thematic Raster Databases Using a Quadtree-Based Approach*. **Lecture Notes in Computer Science** 3799: 125-141.
- Dean, Denis J. 2005. *Deriving New Minimum Cost Pathways from Existing Paths*. **Cartography and Geographic Information Science**. 32(1):47-60.
- Carmel, Yohay and Denis J. Dean. 2004. *Performance of a Spatial-Temporal Error Model for Raster Datasets Under Complex Error Patterns*. **International Journal of Remote Sensing**. 25(23):5283-5296.
- Dean, Denis J. 2004. *Toward a Differential Calculus for Temporal Map Analysis*. **Cartography and Geographic Information Science**. 31(2):89-101.
- Carmel, Yohay, Denis J. Dean and Curtis Flather. 2001. *Combining Location and Classification Error Sources for Estimating Multi-Temporal Database Accuracy*. **Photogrammetric Engineering and Remote Sensing**, 67(7):865-872.
- Maloy, Mark and Denis J. Dean. 2001. *An Accuracy Assessment of Various GIS-Based Viewshed Delineation Techniques*. **Photogrammetric Engineering and Remote Sensing**, 67(11):1293-1298.
- Blackard, Jock and Denis J. Dean. 1999. *Comparative Accuracies of Artificial Neural Networks and Discriminant Analysis in Predicting Forest Cover Types from Cartographic Variables*. **Computers and Electronics in Agriculture**, 24(2):131-151.
- Dean, Denis J. 1997a. *Improving the Accuracy of Forest Viewsheds Using Triangulated Networks and the Visual Permeability Method*. **Canadian Journal of Forest Research**, 27(7):969-977.
- Dean, Denis J. 1997b. *Finding Optimal Routes for Networks of Harvest Site Access Roads Using GIS-Based Techniques*. **Canadian Journal of Forest Research**, 27(1):11-22.
- Dean, Denis J., Kenneth R. Wilson and Curtis H. Flather. 1997. *Spatial Error Analysis of Species Richness for a Gap Analysis Map*. **Photogrammetric Engineering and Remote Sensing**, 63(10):1211-1217.
- Flather, Curtis H., Kenneth R. Wilson, Denis J. Dean and William C. McComb. 1997. *Identifying Gaps in Conservation Networks: Of Indicators and Uncertainty in Geographic-Based Analysis*. **Ecological Applications**, 7(2): 531-542.
- Dean, Denis J. 1994. *Computerized Tools for Use in Negotiated National Forest Planning*. **Journal of Forestry**, 92(2):37-40.
- Sojda, Richard A., Denis J. Dean and Adele E. Howe. 1994. *A Decision Support System for Wetland Management on National Wildlife Refuges*. **AI Applications**, 8(2):44-50.

Roggenbuck, Joseph W., Daniel R. Williams, Steven P. Bange and Denis J. Dean. 1991. *River Float Trip Encounter Norms: Questioning the Use of the Social Norms Concept*. **Journal of Leisure Research**, 23(2):133-153.

**Full Papers Appearing in Refereed Conference Proceeding:**

Davis, Brett, and Denis J. Dean. 2000. *Identifying Likely Wildfire Ignition Points Using Topographic Analysis, Statistical Investigations, and Artificial Intelligence*. 7 page document in: Proceedings for the 3<sup>rd</sup> Southern Forestry GIS Conference (William G. Hubbard and J. B. Jordin, editors). Athens, Georgia. Published as a CD.

Denis J. Dean. 2000. *Comparative Advantage and Spatial Interactions: Implications for GIS-Based Land Allocation Analysis*. 15 page document in: Proceedings for the 3<sup>rd</sup> Southern Forestry GIS Conference (William G. Hubbard and J. B. Jordin, editors). Athens, Georgia. Published as a CD.

Dean, Denis J. and Patrick J. Pellicane. 2000. *Computing the Level of Fragmentation Present in a Landscape Using a Quad Tree Approach*. 7 page document in: Proceedings for the 3<sup>rd</sup> Southern Forestry GIS Conference (William G. Hubbard and J. B. Jordin, editors). Athens, Georgia. Published as a CD.

Elaine M. Giroux and Denis J. Dean. 2000. *Neural Networks as an Alternative to Statistical Modeling in the Semivariogram Analysis Portion of CoBkriging Procedures*. 9 page document in: Proceedings for the 3<sup>rd</sup> Southern Forestry GIS Conference (William G. Hubbard and J. B. Jordin, editors). Athens, Georgia. Published as a CD.

Litschert, Sam and Denis J. Dean. 2000. *Identifying Regions at Risk for Landslides Using Combined Gis and Genetic Algorithm Procedures*. 7 page document in: Proceedings for the 3<sup>rd</sup> Southern Forestry GIS Conference (William G. Hubbard and J. B. Jordin, editors). Athens, Georgia. Published as a CD.

Valdez, Jose and Denis J. Dean. 2000. *An Efficient Algorithm for Reconstructing Anisotropic Spread Cost Surfaces after Minimal Change to Unit Cost Structures*. 11 page document in: Proceedings for the 3<sup>rd</sup> Southern Forestry GIS Conference (William G. Hubbard and J. B. Jordin, editors). Athens, Georgia. Published as a CD.

Blackard, Jock A. and Denis J. Dean. 1998. *Comparative Accuracies of Neural Networks and Discriminant Analysis in Predicting Vegetative Cover Types from Cartographic Variables*. Pages 189 – 200 in: Proceedings of the 2<sup>nd</sup> Southern Forestry GIS Conference (H. J-H. Whiffen and W. C. Hubbard, editors). Athens, Georgia. 339 pages.

Dean, Denis J. and Sharon Allpress. 1998. *Detecting Spatial Correlations in the Presence of Confounding Factors: The Case of Recreation Sites and Spotted Knapweed Infestations*. Pages 165 – 174 in: Proceedings of the 2<sup>nd</sup> Southern Forestry GIS Conference (H. J-H. Whiffen and W. C. Hubbard, editors). Athens, Georgia. 339 pages.

Dean, Denis J. and Peter Smith. 1998. *The Impacts of Alternative Formulations of Stand Adjacency Constraints in Integer Programming-Based Harvest Planning Models*. Pages 235 – 250 in: Proceedings of the 2<sup>nd</sup> Southern Forestry GIS Conference (H. J-H. Whiffen and W. C. Hubbard, editors). Athens, Georgia. 339 pages.

Haire, Sandra L., Denis J. Dean and Carl E. Bock. 1998. *Incorporation of Spatial Dependence in Models of Bird Community Response to Landscape Pattern*. Pages 149 – 164 in: Proceedings of the 2<sup>nd</sup> Southern Forestry GIS Conference (H. J-H. Whiffen and W. C. Hubbard, editors). Athens, Georgia. 339 pages.

**Full Papers Appearing in Refereed Conference Proceeding (Continued):**

Heimiller, Donna and Denis J. Dean. 1998. *Optimizing Placement of Prescribed Burns to Maximize Wildfire Burn Times to Points of Value in the Wildland/Urban Interface Zone*. Pages 265 – 278 in: Proceedings of the 2<sup>nd</sup> Southern Forestry GIS Conference (H. J-H. Whiffen and W. C. Hubbard, editors). Athens, Georgia. 339 pages.

Maloy, Mark A. and Denis J. Dean. 1998. *Accuracy of Viewsheds Created Through Raster and Triangulated Irregular Network (TIN) Techniques*. Pages 315 – 324 in: Proceedings of the 2<sup>nd</sup> Southern Forestry GIS Conference (H. J-H. Whiffen and W. C. Hubbard, editors). Athens, Georgia. 339 pages.

Blackard, Jock A. and Denis J. Dean. 1996. *Evaluating Integrated Artificial Neural Network and GIS Techniques for Predicting Likely Vegetative Cover Types*. Pages 151 – 159 in: Proceedings of the First Southern Forestry GIS Conference (Greg J. Arthaud and William C. Hubbard, editors). The University of Georgia. Athens, Georgia. 416 pages.

Dean, Denis J. 1996a. *Finding Minimum Cost Routes for Access Roads to Single and Multiple Sites*. Pages 41 – 50 in: Proceedings of the First Southern Forestry GIS Conference (Greg J. Arthaud and William C. Hubbard, editors). The University of Georgia. Athens, Georgia. 416 pages.

Dean, Denis J. 1996b. *Timber Harvest Scheduling Using Linked GIS and Operations Research Techniques: Current Status and Future Developments*. Pages 1 – 12 in: Proceedings of the First Southern Forestry GIS Conference (Greg J. Arthaud and William C. Hubbard, editors). The University of Georgia. Athens, Georgia. 416 pages.

Dean, Denis J. and Duane B. Pool. 1996. *Optimizing Wildfire Mitigation Efforts Using Risk Based GIS*. Pages 124 – 132 in: Proceedings of the First Southern Forestry GIS Conference (Greg J. Arthaud and William C. Hubbard, editors). The University of Georgia. Athens, Georgia. 416 pages.

Harvey, William and Denis J. Dean. 1996. *Computer Aided Visualization of Proposed Roads Using GIS and Neural Networks*. Pages 61 – 69 in: Proceedings of the First Southern Forestry GIS Conference (Greg J. Arthaud and William C. Hubbard, editors). The University of Georgia. Athens, Georgia. 416 pages.

Hoffer, Roger M. and Denis J. Dean. 1996. *Geomatics at Colorado State University*. in: Remote Sensing: People in Partnership with Technology. Pages 37 - 45 in: Proceedings of the Sixth Forest Service Remote Sensing Applications Conference. American Society for Photogrammetry and Remote Sensing. Bethesda, Maryland. 448 pages.

Joy, Suzanne M., Denis J. Dean and Richard T. Reynolds. 1996. *Developing a Predictive Model of Northern Goshawk (Accipiter gentilis atricapillus) Habitat Quality*. Pages 114 – 127 in: Proceedings of the 1996 Wildlife Society Annual Conference.

Lizarraga, Alicia C. and Denis J. Dean. 1996. *Estimating the Effectiveness of Forest Buffers at Preserving Aesthetic Quality*. Pages 92 – 102 in: Proceedings of the First Southern Forestry GIS Conference (Greg J. Arthaud and William C. Hubbard, editors). The University of Georgia. Athens, Georgia. 416 pages.

**Full Papers Appearing in Refereed Conference Proceeding (Continued):**

Dean, Denis J. 1989. *The Effects of Data Aggregation on Park Visitation Models*. Pages 90 – 101 in: Proceedings of the 1988 Southeastern Recreation Research Conference. Volume 10. (Cary D. McDonald, editor). Institute for Behavioral Research, University of Georgia. Athens, Georgia. 179 pages.

**Abstracts Appearing in Refereed Conference Proceedings:**

El Aich, Ahmed., Concepcion Lopez Alados, Denis Dean, Melinda Laituri and Randall Boone. In press. Change in Landscape Pattern and Vegetation Succession in Response to Herder Settlement. Accepted for publication in the *Proceedings of the 2008 Joint Meeting of the Society for Range Management and the American Forage and Grassland Council*. Louisville, Kentucky.

Carmel, Yohay, Curtis Flather and Denis Dean. 2006. *A Methodology for Translating Positional Error into Measures of Attribute Error, and Combining the Two Error Sources*. Abstracts of the 7<sup>th</sup> International Symposium on Spatial Accuracy Assessment (M. Caetano and M. Painho, eds). Lisbon, Portugal.

Dean, Denis J. and Elaine Marie Giroux-Hughes. 2004. *Neural Networks as an Alternative to Statistical Modeling in Kriging Procedures*. Extended Abstracts and Poster Summaries, GIScience 2004 (Max Egenhofer, Christian Freksa and Harvey Miller, editors). Regents of the University of California

**Papers Appearing in non-Refereed Conference Proceedings:**

Harvey, William and Denis J. Dean. 2001. *Computer Visualization of Proposed Roads Using GIS and Neural Networks*. Proceedings of the annual ESRI User Conference. Redlands, California.

Dean, Denis J. 1999. *A GIS-Based Approach to Determining Migratory Patterns*. Annual INFORMS meeting, Cincinnati, Ohio.

**Abstracts Appearing in non-Refereed Conference Proceedings:**

Dean, Denis J. 2007. *A Comparison of Genetic Programming and Linear Discriminant Analysis Techniques to Recreate Expertly Identified Natural Hazard Zones*. Abstracts of the 2007 Annual Meeting of the Association of American Geographers. San Francisco, California.

Dean, Denis J, Rene-Jose Valdez and Anne Sjostrom. 2003. *A Geospatial Approach to Finding Near Optimal Locations for Wildfire Fuel Treatments*. GIS in the Rockies.

**Significant Web-Based Writings:**

*Geodesy, Cartography and Map Reading*. ([http://www.cnr.colostate.edu/class\\_info/nr502](http://www.cnr.colostate.edu/class_info/nr502)). This web site was originally intended to serve a purely web-based class (tentatively number NR502) that would introduce graduate students to the basics of geospatial sciences. This class was cancelled in 2002, but the

**Significant Web-Based Writings (Continued):**

first third of the class material is still available on the web. This material continues to generate positive feedback from individuals from all over the world. A recent issue of the *ACSM Bulletin* cites this site as a “definitive information source with excellent graphics” (*ACSM Bulletin* no. 225, February 2007, page 53).

**Professional Reports not Published Elsewhere:**

Blackard, Jock A. and Denis J. Dean. 1996. *The Colorado State Forest Service GIS Implementation Plan*. Submitted to the Colorado State Forest Service on April 10, 1996.

Dean, Denis J., Kenneth R. Wilson and Curtis H. Flather. 1996. *The National GAP Analysis Program: Sensitivity of GAP Analysis to Uncertainty in Faunal Distribution Data and Habitat-Based Predictions of Species Occurrence*. in: The National GAP Analysis Program: Ecological Assumptions and Sensitivity to Uncertainty. NCASI technical bulletin 720. National Council of the Paper Industry for Air and Stream Improvement. Research Triangle Park, NC.

Flather, Curtis H., Kenneth R. Wilson and Denis J. Dean. 1996. *The National GAP Analysis Program: A Review and Inspection of Ecological Assumptions*. in: The National GAP Analysis Program: Ecological Assumptions and Sensitivity to Uncertainty. NCASI technical bulletin 720. National Council of the Paper Industry for Air and Stream Improvement. Research Triangle Park, NC.

**Other Publications:**

Dean, Denis J., J. Douglas Wellman and Bob Charles. 1990. *PASSing the Computer Test*. **Parks and Recreation**, 25(6):46-53.

**Invited Professional Presentations:**

*Finding Near-Optimal Locations for Wildfire Fuel Treatment Activities*. 2003 GIS in the Rockies Conference, Denver, Colorado

*Neural Networks as an Alternative to Statistical Modeling in the Semivariogram Analysis Portion of Kriging Procedures*. 2001 INFORMS meeting, Miami Beach, Florida.

*A Comparison of Genetic Programming and Linear Discriminant Analysis Techniques to Identify Regions at Risk for Landslides*. 2001 INFORMS meeting, Miami Beach, Florida.

*An Accuracy Assessment of Various GIS-Based Viewshed Delineation Techniques.* 2001 GIS in the Rockies Conference, Denver, Colorado.

**Invited Professional Presentations (Continued):**

*Spatial Modeling and Process Analysis: Some (But Not All) Possibilities for Sophisticated Spatial Modeling and Analysis.* 2001. Presented to federal, state and local natural resource managers and university faculty, Guadalajara, Mexico.

*Geospatial Science as an Integrating Tool for Protected Area Management.* 2000. Presented to federal and state park service staff and university faculty, University of Sassari, Sardinia, Italy.

*Geospatial Science for Watchable Wildlife Management.* 2000. Presented to State and Federal wildlife managers, Winter Park, Colorado.

*Combined GIS and Optimization Techniques for Simultaneous Spatial and Temporal Timber Harvest Planning.* 1998 INFORMS meeting. Montreal, Canada.

*Building Spatial Databases: Field Surveys, Remote Sensing and Spatial Interpolation.* 1998. Presented to the faculty and students of the Centro Agronomico Tropical De Investigacion Y Ensenanza (CATIE), Turrialba, Costa Rica.

*Spatial Model Building Using Integrated and Parallel Software Systems.* 1998. Presented to the faculty and students of the Centro Agronomico Tropical De Investigacion Y Ensenanza (CATIE), Turrialba, Costa Rica.

*Spatial Optimization for Timber Harvest Scheduling.* 1997. Presented to the National Taiwanese University. Taipei, Taiwan.

*Forest Viewshed Delineation.* 1997. Presented to the Taiwan Forest Research Institute. Nanshi, Taiwan.

*Geomatics at Colorado State University.* 1996. Sixth Forest Service Remote Sensing Applications Conference. Denver, Colorado.

*GIS Applications in Business.* 1996. Modern Marketing Form 1996. Fort Collins, Colorado.

*GIS Basics for Natural Resource Managers.* 1996. International Forestry Seminar. Fort Collins, Colorado.

*GIS in Academia.* 1996. Bentley Geoengineering Summit, 1996. Copper Mountain, Colorado.

*Spatial Modeling Using GIS.* 1996. Indexing Resource Data for Forest Health Decision Making. Pingree Park, Colorado.

*A Case Study of Creating a Multi-Agency Spatial Data Library: The CORRC Example.* 1995. GIS/LIS 1995. Nashville, Tennessee.

*Introduction to GIS*. 1994. Minorities in Forestry (MINFORS) Annual Convention. Fort Collins, Colorado.

**Invited Professional Presentations (Continued):**

*GIS as a Vehicle for Negotiated National Forest Planning*. 1994. USFS Community Planning Workshop. Ithaca, New York.

*GIS in Natural Resource Planning*. 1994. Soil Conservation Service Regional Urban Forestry Conference. Colorado Springs, Colorado.

*Remote Sensing and GIS Programs at Colorado State University*. 1994 (Standing in for Dr. Roger Hoffer). GIS in the Rockies. Golden, Colorado.

*GIS in Natural Resource Management*. 1993. Presented at multiple locations and to multiple audiences during a two-week trip throughout the southern portions of Brazil.

*GIS and Dynamic Programming for Land Management Planning*. 1993. USFS Applications of GIS for Spatial Analysis to Support Land Management Planning. Fort Collins, Colorado.

*The Need for Ecosystem Management Tools that Explain and Simplify*. 1993. Ecosystem Management: Beyond the Rhetoric. Fort Collins, Colorado.

*Spatial Optimization for Natural Resource Management*. 1993. University of Wyoming Seminar Series on GIS. Laramie, Wyoming.

**Funded Research Projects:**

4/1/08-4/1/11      *Linking Watershed Characteristics with Flow Regime & Geomorphic Context to Diagnose Water Quality Impairment at Multiple Scales – Phase II*. (this project has been approved by the funding agency, but has not yet started) Environmental Protection Agency. Co-PI. \$504,000

11/1/03-10/31/07      *Linking Watershed Characteristics with Flow Regime & Geomorphic Context to Diagnose Water Quality Impairment at Multiple Scales*. U.S. Environmental Protection Agency. Co-PI. \$624,536

9/1/00 - 8/31/02      *Landscape Characterization Over Time*. USDA Forest Service, Rocky Mountain Research Station. Sole PI. \$55,115.

4/19/00 - 1/31/02      *Template for the Development of a SNAP-like Software Program for USFS Project-Level Planning*. USDA Forest Service, Rocky Mountain Research Station. Sole PI. \$79,540.

- 6/1/99 - 4/30/01 *Development of a Flexible, Standardized Methodology for Optimizing Fuel Treatment Program Across Space and Time.* Joint Fire Science Program. Sole PI. \$105,021.
- 5/1/99 - 9/30/01 *Inventorying and Monitoring Natural Resources Status and Trends in the National Park System.* USDI National Park Service. Sole PI. \$52,681.

**Funded Research Projects (Continued):**

- 8/1/97 - 8/1/98 *Spatially Explicit Models of Oak Woodland Landscapes in California and Israel: Do Successional Patterns Converge? - Phases I, II and III.* USDA Forest Service/Jewish National League. Sole PI. \$117,000.
- 10/24/96 - 3/1/97 *Building an Interactive Map Composition System on the World Wide Web.* Colorado Advanced Technologies Institute. Sole PI. \$8,550.
- 8/15/97-12/16/97 *GIS Training for Turkish Hydrologists.* CSU Consortium for International Development. Sole PI. \$7,172.
- 7/15/96 - 10/1/96 *Development of Spatially Referenced Datasets from Historic Forest Inventory Data.* USDA Forest Service, Rocky Mountain Station. Sole PI. \$8,000.
- 6/1/96 - 6/1/97 *Developing An Interagency Spatial Data Library at Colorado State University.* Colorado Rockies Regional Cooperative (The Nature Conservancy). Sole PI. \$23,812.
- 3/1/96 - 8/31/96 *Wildlife Habitat Identification in the North Park Region.* Colorado Division of Wildlife. Sole PI. \$12,942.
- 2/1/96 - 11/15/96 *ARC Information on the South Platte Basin.* Colorado Division of Wildlife. Sole PI. \$18,000.
- 2/1/96 - 11/15/96 *GIS Database Development for the South Platte Basin.* Colorado Division of Wildlife. Sole PI. \$15,014.
- 4/1/95 - 9/30/96 *Development of a Spatial Aid for Fire Evaluation.* USDA Forest Service, Araphoe/Roosevelt National Forest. Sole PI. \$18,000.
- 4/1/95 - 9/30/96 *Predicting Reference Condition in the Ponderosa Pine Ecotone: An Expert Systems Approach.* USDA Forest Service, Rocky Mountain Station. Sole PI. \$5,000.
- 3/1/95 - 3/1/96 *Evaluating Environmental Restrictions on Timber Harvesting: A Cost Effectiveness Approach -- Phase II.* National Council of the Pulp and Paper Industry for Air and Stream Improvement. Co-PI. \$25,000.
- 1/1/95 - 3/1/96 *Course Land Use Mapping From Satellites -- Phase I and Phase II.* USDA Forest Service, Regional Office. Sole PI. \$48,000.

- 4/1/94 - 8/1/95      *Development of a Land use/Land Cover Map for the Rio Grande Basin.* USDA Forest Service, Regional Office. Sole PI. \$11,080.
- 4/1/94 - 7/31/95      *Land Use, Water Availability and Water Demand Relationships in the Rio Grande Basin.* US Geological Survey. Sole PI. \$37,000.

### **Funded Research Projects (Continued):**

- 3/1/94 - 3/1/95      *Evaluating Environmental Restrictions on Timber Harvesting: A Cost Effectiveness Approach -- Phase I.* National Council of the Pulp and Paper Industry for Air and Stream Improvement. Co-PI. \$25,000.
- 1/1/94 - 8/31/95      *Use of Spatial Data in Developing a Multiple Resource Management Plan for State Properties in the Cameron Pass Area.* Colorado State Forest Service. Sole PI. \$26,500.
- 10/7/93 - 9/30/94      *Development of Linkages Between Optimization and GIS Techniques.* USDA Forest Service, Rocky Mountain Station. Sole PI. \$25,000.
- 10/7/93 - 7/1/94      *Mining and Water Quality: Abandoned and Inactive Coal Mines.* USDA Forest Service, Rocky Mountain Station. Sole PI. \$12,778.
- 7/1/93 - 6/30/94      *Evaluating GAP Analysis: A GIS-Based Strategy for Conserving Biological Diversity.* USDA Forest Service, Rocky Mountain Station and National Council of the Pulp and Paper Industry for Air and Stream Improvement. Co-PI. \$25,000.

### **Selected Service Activities:**

- Member of the program committee of the Second International Conference on Geospatial Semantics (<http://geosco.org/geos2007/>).
- Co-Chair of the Research Advisory Committee (RAC) of CSU's Information Science and Technology Center (ISTeC) (<http://istec.colostate.edu/>), 2004 to present.
- Member of the executive committee of CSU's Information Science and Technology Center (ISTeC) (<http://istec.colostate.edu/>), 2004 to present.
- College of Natural Resources representative Research Advisory Committee (RAC) of CSU's Information Science and Technology Center (ISTeC) (<http://istec.colostate.edu/>), 2003 to present.
- College of Natural Resources computer technology committee chairman, 1995 to 2006.
- Department of Forest Sciences representative to College of Natural Resource computer technology committee, 1993 to 1995.
- Member of the Colorado State University's President's committee of web-based instruction, 2001 to present.
- I served as the Department of Forest Science's representative to the Director's Advisory Board for the Colorado Agricultural Experiment Station from the time this board was founded in 1993 until 1994.
- I worked with Dr. Roger Hoffer and Mr. Rocky Coleman to develop a minor in Spatial Information Management Systems (SIMS) in 1994.

- In 2000 and 2001, I worked with an interdepartmental team of faculty to develop a graduate-level certificate in geospatial sciences.
- In 1994, I developed a gift of computer software to the College of Natural Resources from Systems Modeling Corporation (SIMAN software; approximate value \$120,000).
- In 1995, I developed a computer hardware gift from Hewlett Packard Corporation to the College (mass storage devices, approximate value \$12,000).
- I have served on search committees hiring the department head and various faculty within our department and other departments around campus.

**Selected Service Activities (Continued):**

- I oversaw the GIS operations taking place at the *A*Harnessing Data and Technology for Forest Health Decisionmaking Workshop@ sponsored by American Forests and held at Colorado State University's Pingree Park campus in 1996.
- I wrote the College of Natural Resources' general Information Technologies Plan (1996) and the more specific Instructional Information Technology Plan (1997). I wrote the update to the general technology plan in 1999.
- I spearheaded the (ultimately successful) effort to change student technology fees within the College of Natural Resources (1996 - 1997).
- I serve on informal advisory board for GIS operations in the university library (1995 to present).
- I developed and maintained the Department of Forest Science's web page from the time I created it (in 1997) until 1999.
- I represented the Department of Forest Sciences on a College-level web presence committee convened by the Dean.
- I served on the search committee that hired a new Head for the Department of Forest Sciences.
- I served on the search committee that hired a new forest policy faculty member for the Department of Forest Sciences.
- I served on the search committee that hired a new forest fire ecology faculty member for the Department of Forest Sciences.
- I served as the faculty advisor for the College of Natural Resources' undergraduate student resident hall (Ellis Hall).
- I organized and ran a special problems course that allowed graduate students to gain experience using GIS while simultaneously helping an Estes Park community plan for future growth.
- I reviewed an (ultimately successful) \$1.5 million NSF proposal from the University of Wyoming to establish a spatial data teaching/research/service unit between the natural resource, computer science and biology departments.
- I served on an NSF review team reviewing the progress of the University of Wyoming proposal mentioned above.
- I have served on both NASA and NSF proposal review teams.
- I have reviewed research proposals for the Nature Conservancy.
- I periodically review manuscripts for *Photogrammetric Engineering and Remote Sensing, Cartography and Geographic Information Science, Transactions in GIS, International Journal of GIS, Environmental Management, and Forest Science*.
- I served on a board of Aluminaries@ evaluating the future of GIS software development at Bentley Corporation Executive GeoEngineering Summit.
- I conceived, created, and operated the Colorado Rockies Regional Cooperative (CORRC) spatial data library. This electronic library (<http://corrc.cnr.colostate.edu/>) allows anyone to download large amounts

of digital spatial data describing the northern Colorado region. The CORRC library is no longer up to date (the CORRC organization folded in 1997), but the library is still being maintained.

- I assisted the University of Wyoming in establishing an interagency spatial data clearinghouse (patterned after the CORRC example) for the Yellowstone region.
- I became involved with the Colorado Advanced Technology Institute (CATI) in an effort to develop methods of distributing maps across the World Wide Web.
- I became involved with an effort initiated by the Colorado Department of Natural Resources to establish and Federal Geographic Data Committee (FGDC) spatial data node in Colorado.