

DEVINE CURRICULUM VITA 1975 - 2012

1. HUGH ALEXANDER DEVINE JR.

2. Date of Birth: August 19, 1948

3. Address and Phone:

Home: 1414 Brunson Court
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(919) 467-3432

Business: Center for Earth Observation
North Carolina State University
Campus Box 7106
5118 Jordan Hall
Raleigh, NC 27695-7106
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Title/Rank: Alumni Distinguished Graduate Professor, Parks, Recreation, and
Tourism Management Department

Chair, Graduate GIS Faculty

Director, Center for Earth Observation

Associated Full Professor, Analytics Faculty

Associated Full Professor, Forestry Department

Associated Full Professor, Landscape Architecture Department

4. Formal Education:

Degree: B.S.

Major: Forest Resource Management

Minor:

College/University: The Pennsylvania State University, University Park, PA

Year: 1970

Degree: M.S.

Major: Forest Recreation

Minor: Operations Research

College/University: The Pennsylvania State University, University Park, PA

Year: 1972

Degree: Ph.D.

Major: Operations Research/Forest Resources

Minor: Resource Economics

College/University: The Pennsylvania State University, University Park, PA

Year: 1975

Title of Dissertation: A Simulation Study of the Cades Cove Visitor Vehicle Flow

Post Doctoral Study: Forest Biometrics

College/University: University of Georgia, Athens, GA

Year: 1975-1977

Topic: National Forest Planning Methodologies

5. Professional Experience:

2011-Present	Alumni Distinguished Graduate Professor, GIS Graduate Program Administration and Research
2008-Present	Director, Center for Earth Observation, Research and Administration, North Carolina State University, Raleigh, NC – Direct and Fund the Center Research and Teaching Programs
2004-Present	Chair, University Graduate GIS Faculty, North Carolina State University, Raleigh, NC - Administer University Graduate Program in Geographic Information Science
1986-Present	Professor, North Carolina State University, Raleigh, NC – Teaching and Research
2006-2010	Faculty Representative, LITRE Executive Council, North Carolina State University, Raleigh, NC – Plan and execute University Technology Assisted Learning Initiatives
1993-2008	Associate Director for GIS, Center for Earth Observation (formerly Computer Graphics Center), Research and Administration, North Carolina State University, Raleigh, NC – Direct and Fund the Center Research and Teaching Programs
2002-2004	Faculty Co-chair, University Accreditation Team, North Carolina State University, Raleigh, NC – Created the LITRE initiative as education enhancement plan for University accreditation
1994-1996	Principal Investigator, Educational Technology Project, Special Assignment from NCSU Provost and Council of Deans – Teaching and Research

1983-1993	Director, GIS Research Program, North Carolina State University, Raleigh, NC – Teaching and Research
1981-1986	Associate Professor, Full Graduate Faculty Status, North Carolina State University, Raleigh, NC – Teaching and Research
1977-1981	Assistant Professor, Associate Graduate Faculty Status, North Carolina State University, Raleigh, NC – Teaching and Research
1975-1977	Post Doctoral Fellow, School of Forest Resources, University of Georgia, Athens, GA – Research
1972-1975	Research Associate, National Park Management, School of Forest Resources, The Pennsylvania State University, University Park, PA – Research
Consulting:	
2009-Present	PSM Executive Council
2000-Present	Senior GIS Consultant National Park Service
2005-2008	RENCI Program University of NC
1996-2000	GIS Consultation, Forestland Investment Group, Chapel Hill, NC
1993-1996	Assistance with Meeting GIS Benchmark for U.S. Forest Service GIS Procurement Bid, EDS Corporation, St. Louis, MO
1988-1990	Evaluation of National Forest GIS Efforts, U.S. General Accounting Office, Washington, D.C.
1986-1988	Spatial and Economic Analysis of Forest, Timber Damage from Ozone, U.S. EPA, Research Triangle Park, NC
1980-1988	Spatial Analysis of North Carolina White Tail Deer Population, Wake County Wildlife Association, Raleigh, NC
1978-1987	Economic Analyses of Air Pollution Impact, U.S. EPA, Research Triangle Park, NC
1987	New Procedure for Air Pollution Gradient Mapping for Forest Damage, Kilkelly Environmental Associates, Raleigh, NC

1987	State Park Master Plan Review Panel, Department of Natural Resources and Community Development, State of North Carolina, Raleigh, NC
1983	Spatial Analyses of Fusiform Rust Infection, International Paper Company, Research Triangle Park, NC
1975-1977	Spatial and Economic Analysis of Statewide Recreation Provision, Department of Natural Resources, State of Georgia, Atlanta, GA

6. Recent Professional Service and Involvement

Organizational Memberships:

- University Consortium for Geographic Information Science
- North Carolina Advisory Group on GIS
- UNC Representative to the NC GIS Coordinating Council
- National Park Service GIS Council
- American Society of Photogrammetry and Remote Sensing
- The Institute of Management Science
- Society of American Foresters
- Sigma Xi
- National Recreation and Park Society
- North Carolina Park and Recreation Society
- Society of Park and Recreation Educators
- Forest Resource Systems Institute - Board of Directors
- NC Friends of State Parks
- Urban and Regional Information Systems Association

Selected Workshops Directed or Presented (1992-Present)

Inaugural GIS Research, NC GIS Conference, Raleigh, NC, 2011

University Education in GIS Workshop, NC GIS Conference, Raleigh, NC, 2011

NPS Workshop, ArcGIS for National Park Land Managers, 2004

Integrating GPS and GIS Technology into Forestry Practices, 1999-2001

GIS for K-12 Environmental Science, 1997-2006

ArcView GIS for National Park Management, 1996 – 2001, Raleigh, NC (2), Madison, WS, Olympia, WA, other locations. Materials and Notes for this course also offered via the WWW.

Introductory GIS, North Carolina Society of Surveyors Institute, 1993-1998, Raleigh, NC

GIS for National Park Managers, National Park Service Superintendents Training, 1995, Raleigh, NC

GIS for National Park Managers, National Park Service Superintendents Training, 1994, Albuquerque, NM

An Introduction to GIS for National Park Management, National Park Service GIS Training Course - North Carolina Central University, 1993, Durham, NC

GIS for Forest Recreation Management, SERR Symposium, Invited Tutorial, 1992, Asheville, NC

GIS for National Park Management, National Park Service Regional Directors Meeting, 1992, Philadelphia, PA

Major Speaking Engagements

“Model Professional Science Masters Program”, University of North Carolina General Administration Professional Science Masters Program Conference, October 2011, Wilmington, NC

“GIS University Education Program Panel Member”, NC GIS Conference Research Workshop, March 2011, Raleigh, NC,

“GIS Model Curriculum Panel Member”, UCGIS Summer Assembly, June 2010, Hilton Head, NC,

“Linking Cultural Resources through GIS” March 9-13, 2009
ASPRS 2009 Annual Conference, Baltimore, MD

“An Enterprise GIS Data Model for Forest Park Management” May 26-30, 2008
FORTECENVI 3rd International Scientific Conference, Prague, CZ

“Enterprise GIS for NPS Resource Management,” April 30 – May 1, 2009
National Park Service Northeast Region GIS Conference, Assateague Island National Seashore

“Integrated GIS Techniques for Interactive Document Display Using Google Earth”, Feb 19-20, 2009, 2009 NC GIS Conference, Raleigh, NC

“Strategic Development on an Integrated GIS Decision Support System” March 9-10, 2009, 2009 National Park Northeast Region Supervisory Conference, Philadelphia, PA

“GIS Design for the Captain John Smith Water Trail” ,October 8-9, 2009 National Park Service Chesapeake Bay Program Workshop, Annapolis, MD

“Interagency Environmental Review with GIS” , September 22-24, 2009,

National Park Service Northeast Region Environmental Compliance Workshop, Raleigh, NC

“GIS in Statewide Community Planning”, 2007 NC NEMO Workshop, Raleigh, NC

“University Research in GIS”, 2007 NC GIS Conference, Winston Salem, NC

“Next Generation Enterprise GIS Design for National Parks Management”, 2007 Northeast Region GIS Annual Meeting, Sandy Hook, NJ.

“Enterprise GIS for Protected Area Management”, 2006 Enterprise GIS Conference, National Park Service, Denver, CO

“Advances in GIS for International Forestry”, 2006 CAMCORE Conference, Raleigh, NC

“An Enterprise GIS Model for Natural Resource Management with GIS”, 2006 Northeast Region NPS GIS Meeting, Sandy Hook, NJ

“Monitoring and Updating Fire Related GIS Datasets, 2006 Northeast Region Natural Resource Inventorying and Monitoring Meeting, Philadelphia, PA

“Mapping Hurricane Damage with an Automated GIS Feature Extraction Tool”, 2006 SOFOR GIS Meeting, Asheville, NC

“A Geodatabase Model for Park Resource Management”, 2006 Northeast Region NPS GIS Meeting, Sandy Hook, NJ

“A Model Data Management System for Natural Resource Information”, 2006 Northeast Region Natural Resource Inventorying and Monitoring Meeting, Philadelphia, PA

“Updating Spatial Datasets Using Geographic Information Systems and Remote Sensing Techniques” 2005 UCGIS National Assembly, Jackson, WY (with Justin Shedd)

“A Enterprise GIS System for National Park Service Resource Management”, 2005 National NPS GIS Meeting, Denver CO

“A New Approach to Fire Fuel Data Management” 2005 NC GIS Conference, Winston Salem, NC, (with Angela Hubbs)

“A GIS Procedure for Analysis of Septic Failures and Their Impact on Water Quality”, 2005 NC GIS Conference, Winston Salem, NC, (with John Taylor)

“An Enterprise GIS Design for Northeastern National Parks”, 2005 Northeast

Region GIS Annual Meeting, State College, PA.

“International Student GIS Graduate Education”, 2005 NC GIS Conference, Winston Salem, NC

“LITRE: Learning in a Technology Rich Environment”, 2003 NC State University EDTECH Forum, Raleigh, NC (Featured Speaker)

“New Technologies for GIS Databases in Natural Resources”, 2003 Natural Resource Data Managers Workshop, Fort Collins, CO.

“Data Models for NPS Natural Resource Inventories”, 2003 Natural Resource Data Managers Workshop, Fort Collins, CO.

“Natural Resource Data Management Planning for National Parks”, 2003 Northeast Region Natural Resource Inventorying and Monitoring Workshop, Kingston, RI (Featured Speaker)

“Accessing Natural Resource Data Through a GIS Model”, 2003 Northeast Region GIS Annual Meeting, State College, PA.

“GIS Partnerships”, 2003 GIS Partnerships in Teaching and Learning Conference, Raleigh, NC.

“Remote Sensing of Hemlock Woolly Adelgid Spread”, 2004 ESIP Federation Conference, Asheville, NC (Featured Speaker with Frank Koch)

“A GIS Procedure for Stream Valley Typing”, 2004 ESIP Federation Conference, Asheville, NC (Featured Speaker with Wendy Reid)

“K-12 Education with GIS” 2004 ESIP Federation Conference, Asheville, NC (Featured Speaker with Luann Dahlman)

“GIS in Landscape Assessment”, 2003 LABASH, (Featured Speaker)

“An Environmental Water Quality Data Visualization System for Private Ground Water Supplies”, 2003 Water Resources Research Institute Annual Conference, Raleigh, NC (Co-presenter)

“LITRE: the Draft”, 2002 University Campus Forum, Raleigh, NC (Co-organized the Meeting and presented the Opening Address)

“GIS in National Park Natural Resource Management”, 2002 NPS National Natural Resource Training Program, Ventura CA (Featured Speaker)

“Interactive Movies as a Learning Tool In GIS”, 2002 UNC System Distance Education and Technology Exposition, Raleigh, NC

"Integrating Cultural Resource Databases with Geography", 2002 National Park Service Cultural Resources Workshop, New Orleans, LA (Keynote Speaker)

"Digital Data Collection for Updating Environmental GIS- Handheld Technology for Fieldwork", 2002 ESRI International Users Conference, San Diego (Co-presenter)

"A GIS based Water Quality Data Management System", 2002 Water Quality Research Group Workshop, Raleigh, NC (Featured Speaker)

"New learning Technologies using Multimedia Education Tools", 2002 NC State University Learning Technology Service Workshop, Raleigh, NC (Featured Speaker)

"Viewlet Movies and Audio Reproduction for Enhanced GIS Learning", 2002 NC State University Multimedia Users Group, Raleigh, NC (Featured Speaker)

"Cultural Resource Inventories and GIS", 2002 National Park Service Northeast Region Cultural Resources Meeting, Philadelphia, PA (Keynote Speaker)

"GIS in Resource Inventories and Monitoring", 2002 NE Region NPS GIS Coordinators Meeting, Reston, VA (Featured Speaker)

"Research Libraries for the Future", 2002 NCSU Libraries for the Future Workshop

"GIS in Teaching K-12 Environmental Science", NC Environmental Education Conference, Raleigh, NC, 2001 (Featured Speaker)

"GIS in K-12 Instruction", NC GIS Conference, Winston-Salem, NC 2001 (Program Chair)

"Internet Based GIS Delivery," NPS GIS Task Force, Redlands, CA, 2001

"GIS in Resource Inventories and Monitoring", NE Region NPS Resource Management Coordinators, Narragansett, RI, 2001

"New GIS Technologies for Park Resource Management", Northeast Region NPS GIS Coordinators Meeting, Williamsburg, VA, 2001

"GIS in Teaching K-12 Environmental Science", NC Environmental Education Conference, Raleigh, NC, 2000 (Featured Speaker)

"New GIS Technologies for Park Resource Management", Northeast Region NPS GIS Coordinators Meeting, Gettysburg, PA, 2000

"GIS in National Park Natural Resource Management", NPS National Natural

Resource Training Program, Ventura CA 2000 (Featured Speaker)

"Planning Guidelines for NPS GIS Implementation", National NPS GIS Coordinators Meeting, Kona, HI, 2000

"NC State Program in GIS-Based Regional Planning," Presentation to the NC State University Graduate School Board of Visitors, Raleigh, NC, 1999

"Training GIS Professionals," 1999 NC GIS Conference, Winston Salem, NC, 1999 (Invited Address)

"GIS in Teaching K-12 Environmental Science," NC Environmental Education Conference, Raleigh, NC, 1999 (Featured Speaker)

"A Comprehensive GIS Data System for Supporting Sustainable Growth in NC," 1999 NC GIS Conference, Winston Salem, NC, 1999

"Learning Through the Web: Distance Education Experiences in Park and Recreation Courses at NC State University," National Park and Recreation Educator's Teaching Workshop, Myrtle Beach, NC, 1999

"New GIS Technologies for Park Resource Management," Northeast Region NPS GIS Coordinators Meeting, Fredericksburg, VA, 1999

"GIS in National Park Natural Resource Management," NPS National Natural Resource Training Program, Gatlinburg, TN 1999 (Featured Speaker)

"A Comprehensive GIS Data System for Supporting Sustainable Growth in NC", 1999 NC Regional Planning Conference, Raleigh, NC, 1999

"New GIS Technologies for Park Resource Management", National NPS GIS Coordinators Meeting, Bar Harbor, ME, 1999

"GIS in a Major University IT Environment," ACM Computer Services Management Symposium, St. Louis, MO, 1998 (Keynote Address)

"GIS in National Park Natural Resource Management", NPS National Natural Resource Training Program, Luray, VA, 1998 (Featured Speaker)

"NC State Program in GIS-Based Regional Planning," Presentation to the NC State University Board of Trustees, Raleigh, NC, 1998

"New GIS Technologies for Park Resource Management", National NPS GIS Coordinators Meeting, Washington, DC, 1998

"GIS in National Park Management," NPS Northeast Region Resource Management Conference, Long Branch, NJ, 1997 (Invited Address)

"GIS for the Masses: NCSU's Approach to Providing Campus-Wide Access to GIS," Second International Symposium on GIS in Higher Education, Columbia, MD, 1996

"Natural Resources Education with Multimedia: Experiences from the North Carolina State University Project," Second Biennial Conference on University Education in Natural Resources, State College, PA, 1996

"The Student-Directed, Information-Rich (SDIR) Education Project, 1994-96," North Carolina Library Association College and University Section Fall Workshop, Charlotte, NC, Oct. 18, 1996 (Featured Address)

"GIS in Local Park Planning," NC/SC Park and Recreation Conference, Winston-Salem, NC, 1996 (Invited Address)

"Educational Technology in the College of Forest Resources," College of Forest Resources Faculty Meeting, Raleigh, NC, 1996 (Featured Address)

"Distance Learning and Educational Technology," Kickoff NCSU Board of Visitors Meeting, Raleigh, NC, 1996 (Featured Address)

"Enhanced Classroom Instruction with Educational Technology," NCSU Chancellor's Retreat, Research Triangle Park, NC, 1996 (Featured Address)

"GIS in Cultural Resource Management", National Park Service Cultural Resource Management Symposium, Williamsburg, VA, 1995 (Keynote Address)

"GIS for National Park Management," National Park Service Superintendents Conference, Long Branch, NJ, 1995 (Featured Address)

"Student-Directed, Information-Rich Learning," CNI New Learning Communities Conference, Indianapolis, IN, 1995 (Award Address)

"Campus-wide Access to Geographic Information Systems to Support Student Learning," Computers on Campus National Conference, Houston, TX, 1995

"SDIR: Student-Driven Information-Rich Education Project; Report to the Deans Council," NCSU, 1995 (Invited Address)

"Student-Directed, Information-Rich Undergraduate Education: A New Instructional Model," UNC/CAUSE/CNI Southeast Regional Conference, Greensboro, NC, 1995 (Invited Address)

"An Introduction to GIS", Association of Research Librarians Annual Conference, Raleigh, NC, 1994 (Invited Address)

"Introductory GIS", North Carolina Society of Surveyors Institute, Raleigh, NC, 1994 - 1995 (Keynote address)

"Boundary Blur in Vegetation Mapping", International Symposium on Error in GIS and Remote Sensing, Williamsburg, VA, 1994 (Invited Address)

"A Procedure for Locating Underground Storage Tanks in Gaston County", North Carolina GIS Conference, Raleigh, NC, 1993 (invited address).

"GIS in Forest Products Management with a Visit to Distance Learning", IBM Process Plant Management Conference, Tampa, FL, 1992, (keynote address).

"GIS Implementation Issues for Federal Agencies That Manage Environmental Resources", GISDEX '92, Washington, DC, 1992, (invited panel organizer).

"Multimedia and Distance Learning: A New Age for Recreation and Park Communications and Training", North Carolina Recreation and Park Society Conference, Pinehurst, NC, 1992 (invited address).

"GIS for Mosquito and Vector Control", North Carolina Mosquito and Vector Control Association Annual Conference, Winston Salem, NC, 1992, (invited address).

"GIS to Support Cultural Resource Management: A Case Study at Colonial National Historical Park", Seventh Conference on Research and Resource Management in Parks and on Public Lands, George Wright Society, Jacksonville, FL, 1992 (invited address)

"Distance Education in Forestry", Society of American Foresters National Convention, Richmond, VA, 1992 (invited address).

"GIS in Forest Recreation Management", USFS Recreation Management Short Course, Clemson, SC, 1992, (keynote address).

"GIS Applications to Urban Recreation Research and Management", NRPA Research Symposium, Baltimore, MD, 1991

"GIS Research at NCSU." Southeastern ARC/INFO Regional User's Group Conference, Charlotte, NC, 1991 (invited address)

"Computer Mapping for Data Analysis and Display", NCSU INFOTEK Computer Symposium, Raleigh, NC, 1991 (invited address)

"GIS Research in the College of Forest Resources", UNC Imaging Science and Engineering Symposium, Raleigh, NC, 1991 (invited address)

"Spatial Feasibility of Forest Land Optimization Models with GIS", Systems Analysis in Forest Resources Symposium, Charleston, SC, 1991.

"GIS Data Transfer and Translation", NC GIS Conference, Raleigh, NC, 1991

(invited address)

"Quick Start in GIS", NC GIS Conference, Raleigh, NC, 1991 (invited address)

"GIS Education at NCSU", NC GIS Conference, Raleigh, NC, 1991 (invited address)

"A CAD and GIS Procedure to Identify Erosion Rates on the Outer Banks of North Carolina", Second National Conference on Civil Engineering Applications of Remote Sensing and GIS, Washington, DC, 1991

"Institutionalizing GIS in a Park", Second National Conference on GIS in the National Park Service, Denver, CO, 1991 (featured address with C. Rafkind)

"Potentials of GIS for City and County Public Recreation Management", Computer Applications for Local Government Recreation Programs Workshop, North Carolina State University Recreation Resources Service, Raleigh, NC, 1990 (invited address).

"GIS and CAD Education for Natural Resource Managers at North Carolina State University", North Carolina ESRI User's Group Meeting, Raleigh, NC, 1990 (invited address).

"A GIS for County Level Natural Resource Planning", North Carolina Association of County Commissioners, Asheville, NC, 1990 (invited address).

"GIS in International Forestry", International Forestry Short Course, College of Forest Resources, North Carolina State University, Raleigh, NC, 1990 (invited address).

"Forest Recreation Applications of GIS", Society of American Foresters National Meeting, Washington, DC, 1990 (invited address).

"Alternatives to Large System GIS for National Parks", Southeastern Region National Park Service GIS Training Workshop, Atlanta, GA, 1990 (featured address).

"An Introduction to GIS." American Association of Civil Engineers Technical Conference, Raleigh, NC, 1990 (featured address).

"Mapping with MicroCAD: The NCSU Experience", The Fifth International Forum on Micro-based CAD, North Carolina State University Industrial Extension Service, Research Triangle Park, NC, 1989 (invited address).

"GIS at the Richmond National Battlefield." Ninth Southeastern Recreation Research Symposium, Asheville, NC, 1988.

"Recreation Allocations with FORPLAN." Ninth Southeastern Recreation

Research Symposium, Asheville, NC, 1988.

"Sensitivity Analysis of Recreation in FORPLAN Models." Third National Systems Analysis Workshop, Society of American Foresters, Monterey, CA, 1988.

"Microcomputers in Forestry - a Five Year Perspective." Fifth Annual Meeting of the Forest Resources Systems Institute, Knoxville, TN, 1988 (keynote address).

"Microcomputer GIS." Canadian Pulp and Paper Association, Quebec City, Quebec, Canada, 1988 (featured address).

"A Low Cost GIS Alternative for Park Management." National Park Service GIS Workshop, Luray, VA, 1988 (invited).

"GIS - How It Works." Society of American Foresters Regional Technical Conference, Baton Rouge, LA, 1988 (featured address).

Awards and Honors:

Alumni Distinguished Graduate Professor – 2011

University Community Engaged Faculty Fellow – 2011

Distinguished Service Award – Institute of Advanced Analytics - 2009

Elected to the Academy of Outstanding Faculty Engaged in Extension - 2009

University Alumni Outstanding Extension Service Award - 2009

University Outstanding Extension Service Award - 2009

CNR Distinguished Graduate Faculty Award Nominee - 2008

CNR Service Award - 2003

ESRI GIS Special Achievement Award - 2001

University Libraries Faculty Award - 2000

Mentored Janet Ferguson - University Outstanding Teaching Assistant Award, 2001

Mentored Allyson Jason – PRTM Outstanding Graduate Student Award, 2001

Mentored Charlyne Smith – University Ou, 2001

Mentored Debra Savage – University Outstanding Teaching Assistant Award, 2000

Charlyne Smith's (M.S. advisee) thesis selected as best in the U.S. by the National Recreation and Park Association, 1999

Andrew Martin's (mentored undergraduate) research paper received the G. Herbert Stout Award for best undergraduate project at the 1999 Regional GIS Conference

Ann Marie Queen's (M.S. advisee) thesis received the G. Herbert Stout Award for best graduate paper at the 1999 Regional GIS Conference

Nominee, NCSU Libraries Faculty Library Award, 1998,

Recognition Award for Outstanding Service to the National Park Service, 1996

Initial Dean's Award for Outstanding Service to the College of Forest Resources, 1996

National Park Service Outstanding Science Project Award, 1995

SDIR Project selected as one of the 10 Best Educational Technology Projects in

the US, 1995
Selected for NSF Educational Technology In_Step Graduate Fellowship, 1995
Board of Directors, Forest Resource Systems Institute, 1989-1993
Best Science Presentation, George Wright Society, National Park Service, 1992
Multidisciplinary National GIS Application Award, NPS, 1991
Best Presentation National GIS Application Award, NPS, 1991
Peer Review Associate Editor, The Compiler
Peer Review GIS technology, The Journal of Forestry
Peer Review Forest Recreation, Southeastern Forest Experiment Station, USDA
Forest Service
Agricultural Research Service National Recognition, 1990
Wake County Wildlife Club Research Award, 1990
Xi Sigma Pi (National Forestry Honorary Society)
Rho Phi Lambda (National Recreation Honorary Society)
Phi Kappa Phi (Scholarship Honorary Society)
Delta Sigma Gamma (Agriculture Honorary Society)
Sigma Xi (National Science Honorary Society)
Promising New Ph.D. in Operations Research, 1978
Two University Innovative Teaching Awards
Two University Computer Aided Teaching Awards

7. Research and Scholarly Activities –

My research program focuses on the application of Geographic Information Science to natural resource issues and currently operates at about \$1, 000,000 per year in grant monies. A major portion of that program is the operation of the GIS Technical Support Center for the National Park Service through which we oversee the research and training activities of that group. I am a founding member and current Chair of the NC State University Graduate Geographic Information Science Faculty. We have over 20 academic departments involved with that program and offer over 15 graduate courses in that program including the interdisciplinary Masters of Geography Information Science and Technology degree which we launched in Fall 2010. This was in addition to the Graduate Certificate in GIS which we initiated in 2003. My university teaching includes multiple undergraduate and graduate courses in Geographic Information Science, natural resource management, and analytics including multiple courses that are offered entirely through the web.

In addition, I have an on-going research program in the development and appropriate deployment of educational technology in university teaching and learning.

Publications

Books and Book Chapters:

Millinor, William, Hugh Devine, and Elizabeth Eastman. 2010. Creating a Crosswalk of Vegetation Types and Fire Fuel Models for the National Park Service. Elsevier Inc., Houston TX

Devine, Hugh A., Perver Korca-Baran, Peter Budde, William Millinor, Elizabeth Eastman, and William Shroyer. 2004. Introduction to ArcGIS for Land Management Agencies. Raleigh, NC: North Carolina State University (<http://www.nps.gov/gis/training/arcgis8x.html>).

Millinor, William, William Slocumb, Hugh Devine, and Mark Smith. 2003. *GIS for Fire Specialists, The NPS Course*. Raleigh, NC: North Carolina State University (http://www.nps.gov/gis/training/av8_fire).

Sams, Cheryl, William Slocumb and Hugh Devine. 2004. Appomattox Court House National Historical Park: Linking Cultural Resource Databases through GIS in Mapping the Future of America's National Parks. ESRI Press, Redlands, CA.

Sams, Cheryl, William Slocumb and Hugh Devine. 2004. Hopewell Furnace National Historic Site: Linking Cultural Resource Databases through GIS in Mapping the Future of America's National Parks. ESRI Press, Redlands, CA.

Pradhan, S., M. T. Hoover, R. Austin, H. A. Devine, 2007. Potential Nitrogen Contributions from On-site Wastewater Treatment Systems to North Carolina's River Basins and Sub-basins. NCARS, North Carolina State University, , Technical Bulletin 324

Peer Reviewed:

Pradhan, S., M. T. Hoover, R. Austin, H. A. Devine, 2007. Potential Nitrogen Contributions from On-site Wastewater Treatment Systems to North Carolina's River Basins and Sub-basins. NCARS, North Carolina State University, , Technical Bulletin 324

Wang, Zhengming M., Hugh A. Devine, and W. D. Wayne Zhang, 2007. Using GIS-Assisted Water Quality Model to Analyze Potential Risk Areas of Lead Leaching in Raleigh's Water Distribution Systems. 2007 Conference Proceedings WQTC, Charlotte, NC 2007.

Wang, Zhengming M., and Hugh A. Devine, 2007. A Spatial /Temporal Approach to Analyze the Potential Sources of Lead Corrosion in Drinking Water. 27th ESRI International User Conference, San Diego, CA.

Shedd, Justin M. and H. A. Devine, 2005. The Use of Remote Sensing to Update Fuel Load and Vegetation Datasets After a Natural Disaster. EASTFIRE Conference, George Mason University, Fairfax, VA.

Devine, Hugh .A., P. K. Baran, and Linda C. Sewall 2005. An Environmental Water Quality Data Visualization System for Private Ground Water Supplies. Final Peer Reviewed Report

Pradhan, S., M. T. Hoover, R. Austin, H. A. Devine, 2003. Potential nitrogen loading from septic systems to North Carolina's river basins. <http://agronomy.agr.state.nc.us/sssnc/proc03.pdf>. Soil Science Society of North Carolina, Raleigh, NC.

Stubbs, Harriett S., Hugh Devine, and Rita Hagevik. (2002) . Thinking Spatially GIS Curricula K-16 and Professional Development for Educators. Submitted and accepted. In Proceedings of a conference, International Organization of Science Technology Educators. August 2002. Foz do Iguacu, Brazil.

Mitchell, J.F. and H.A. Devine, 1996, "GIS as the Basis for an Urban Forestry Plan," in the Proceedings of the First Southern Forest GIS Symposium, Society of American Foresters, Washington, DC, pp:183-197.

Argentati, Carolyn & Hugh Devine, Hal Meeks, 1996, "The Student-Directed, Information-Rich (SDIR) Undergraduate Education Project," *CONNECT*, 26:7-9.

Argentati, Carolyn D. & Hugh Devine, Hal Meeks, 1996, "The SDIR Undergraduate Education Project," *NCSU Libraries FOCUS*, 16(2):12-13.

Devine, H.A. and J.L. Styron, 1994, "Boundary Blur in Vegetation Mapping," in the Proceedings of the First Annual Conference in GIS Accuracy Assessment, ASPRS, Falls Church, VA, pp:158-167.

Johnson, J.L., Fels, J.E., Rafkind, R.D., and Devine, H.A., 1993, "Data Base Mapping and Management at Colonial NHP", *Park Science*, Winter 1993:28.

Devine, H.A., McCaffray, E.B., Turner, K., 1993, "Vegetation Mapping and GIS for the Cape Hatteras National Seashore", *Barrier Island Ecology of the Mid-Atlantic Coast: A Symposium*, Technical Report NPS/SERCAHA/NRTR-93/04, National Park Service, Southeast Regional Office, Atlanta, GA pp 179-188

Fels, J.E., McManus, J.M., Rafkind, R.D., and Devine, H.A., 1993, "Designing Better Maps Using Geographic Information Systems", *Park Science*, Fall 1993:35-36.

Rafkind, R.D., Devine, H.A., Karish, J.F., Dienna, P. L., 1993, "What We've Learned About GIS: One Park's Experience in the World of GIS", *The George Wright Forum*, Volume 10, No. 3, pp:4-10.

Devine, H.A., Overton, M.F., and Fisher, J.S., 1992. "A GIS Procedure to Monitor Coastline Erosion the Outer Banks of North Carolina", *Technical Papers of the 1992 American Society of Photogrammetry and Remote Sensing National*

Convention and Resource Technology 92, ASPRS, Falls Church, VA, Vol 5:207-214.

Becker, R.T. and Devine, H.A., 1992. "Raster-to-Vector Conversion of Scanned Documents for Resource Management", Technical Papers of the 1992 American Society of Photogrammetry and Remote Sensing National Convention and Recourse Technology 92, ASPRS, Falls Church, VA, Vol 3:105-114.

Smutko, L.S., Danielson, L.E., McManus, J.M., and Devine, H.A., 1992, "Use of Geographic Information System Technology in Delineating Wellhead Protection Areas", National Symposium on the Availability of Ground-Water Resources, American Water Resources Association, Huntsville, AL, pp.198-203.

Fels, J.E. and Devine, H.A., 1991. "FMS/AC as a GIS System Within AUTOCAD", The Compiler, Vol. 9, No. 3, pp. 3.

Kuo, J.R. and Devine, H.A., 1991, "An Automated Procedure for Urban Recreation Planning", Proceedings of the 1990 Southeastern Recreation Research Conference, SEFES, USDA Forest Service, Asheville, NC, General Technical Report SE-67:pp. 37-52.

Devine, H.A. and Rafkind C.F., 1991. "A New Approach to GIS Design and Implementation", Technical Papers of the 1991 American Society of Photogrammetry and Remote Sensing National Convention, ASPRS, Falls Church, VA, Vol 4:51-61.

Fels, J.E. and Devine, H.A., 1991. "Interactive Viewshed Mapping Using Shaded Surface Displays: A Community Planning Approach", Technical Papers of the 1991 American Society of Photogrammetry and Remote Sensing National Convention, ASPRS, Falls Church, VA, Vol 4:111-122.

Tucker, D.F. and Devine, H. A., 1991. "Integration of GIS into Natural Resources Education", Technical Papers of the 1991 American Society of Photogrammetry and Remote Sensing National Convention, ASPRS, Falls Church, VA, Vol 4:314-324.

Devine, H.A., McCaffray, E.B., Turner, K., 1991, "Vegetation Mapping and GIS for the Cape Hatteras National Seashore", Proceedings of the 1986 Conference on Science in the National Parks, U.S. National Park Service, Washington, D.C., Vol. 8:30-40.

Birchford, S., Smolen, M.D., Danielson, L.E., and Devine, H.A., 1991, "Development of a Water Quality Database and Associated Strategies for County-Level Environmental Management", Proceedings of Application of Geographic Information Systems, Simulation Models, and Knowledge-based Systems for Landuse Management, Virginia Polytechnic and State University, Blacksburg, VA pp. 277-286.

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National Park Service – Development of a GIS Planning Database for the Northeast Region, (March, 2005)

National Park Service – Spatial Evaluation of Digital Land Status Maps, (March 2005)

National Park Service – Draft Proposal for and Enterprise GIS Solution for the Northeast Region of The National Park Service, (May, 2005)

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"GIS Applications in the Chesapeake and Allegheny Clusters on the National Park Service", George Wright Society 2000, Valley Forge, PA, 2000

"Mapping Our Natural and Cultural Resources for Effective Management", 1999 NCPRS Conference, Winston Salem, NC, 1999

"A Comprehensive GIS Data System for Public Participation in Regional Planning in North Carolina: The Research Triangle prototype", NC Regional Planning Association, Raleigh, NC, 1999

Other Publications:

GIS PhD Curriculum Proposal, NC State University, Raleigh, NC, 2007

Authored the Successful University Application for The University Consortium For Geographic Information Science (<http://www.gis.ncsu.edu/ucgis/>)

ArcView Training Manual for National Park Service Fire GIS Workbook, co-authored

Draft National Strategic Plan for GIS in The National Park Service, co-authored

National Planning Guidelines for National Park Service GIS Implementation, co-authored

Revised Introductory ArcView Training Manual for National Park Service GIS (Internet Based), co-authored

Funded Research Projects (1992 - present):

Year	Amount	Title	Sponsoring Agency
2011-2014	\$427,768	Fire GIS Decision Support System for the National Park Service National Capital, Northeast and Southeast Region's Fire Programs (CESU)	NPS
2011-2012	\$29,139	Phase 4 GIS Database Development for the Overmountain Victory National Historic Trail (CESU)	NPS
2011-2012	\$14,000	Convert Introduction to Arc GIS 9.x Training to Introduction to ArcGIS 10 (CESU)	NPS
2011-2012	\$10,022	Spatial Database Development for Wake County Advocates for Health in Action (AHA) Access and Environment Workgroup: Phase 2	Wake Health and Hospitals
2011-2012	\$20,452	Spatial Database Development for Wake County Advocates for Health in Action (AHA) Access and Environment Workgroup: Phase 2	Rex Health Foundation
2010-2012	\$36,837	Mapping Marsh Condition on Blackwater National Wildlife Refuge and Fishing Bay Wildlife Management Area	US F&W
2010-2012	\$47,938	The Southern Fire Exchange: Putting Fire Science on the Ground Phase 1	National Fire Science Program
2009-2012	\$148,752	Understanding Urban and Community Forests Contributions to Physical Activity and Health	USDA Forest Service
2011	\$21,000	Professional Science Master's Degree Support Projects	UNC GA/Sloan Foundation
2010-2012	\$97,443	The Southern Fire Exchange: Putting Science on the Ground	National Fire Science Program
2010-2011	\$258,000	MGIST Planning Grant Year 4	NC State DELTA
2010-2011	\$100,000	Middle School Sport Facilities: Policies, Physical Activity, and Cost Effectiveness	Robert Wood Johnson Foundation

Year	Amount	Title	Sponsoring Agency
2010-2011	\$56,566	BETSMap: Web Mapping for Location Intelligence in Food Safety and Defense	NC DEH
2010-2011	\$38,700	Virtual Forest Management Plan - Online Polygon Capture Project for NC Forest Management	NC DFR
2008-2012	\$540,085	Geographic Information System Research and Development for the Northeast Region of the National Park Service	NPS
2008-2012	\$485,941	Decision support System for the Northeast and National Capital Region Fire Programs (CESU)	NPS
2009-2010	\$205,000	MGIST Planning Grant Year 3	NC State DELTA
2009-2010	\$35,338	Vegetation Map Accuracy Assessment for Gauley River National Recreation Area. (CESU)	NPS
2008-2010	\$60,500	Natural Resource Data Management and Database Development for the Mid-Atlantic Network of the Northeast Region. (CESU)	NPS
2008-2010	\$201,988	Review of Selected Natural Resource Data for the Northeast Region Inventory and Monitoring Program (CESU)	NPS
2008-2010	\$45, 501	GIS Database Development for the Overmountain Victory National Historic Trail – CESU (Phases 2 & 3)	NPS
2009	\$20,464	Spatial Database Development for Wake County Advocates for Health in Action (AHA) Access and Environment Workgroup	Blue Cross/Blue Shield NC Foundation
2008-2009	\$183,000	MGIST Planning Grant Year 2	NC State DELTA
2007-2009	\$66,500	Research & Development of an Expanded Geographic Information System for National Park Service Cultural Resources Data Integration and Interagency Environmental Review	NPS
2007-2009	\$66,330	Watershed Condition Assessments For George Washington Birthplace National Monument and Thomas Stone National Historic Site	NPS

Year	Amount	Title	Sponsoring Agency
2007-2009	\$70,000	Review of Selected Natural Resource Research Data For the Northeast Region Inventory and Monitoring Program	NPS
2007-2008	\$183,000	MGIST Planning Grant Year 1	NC State DELTA
2007-2008	\$31,500	Research and Development of an Expanded Geographic Information System for National Park Service Cultural Resources Data Integration and Interagency Environmental Review	NPS
2007-2008	\$80,000	A GIS Based Web Map System for Public Access to Basinwide Water Quality Plans and Associated Information	NC Division of Water Quality (DENR) (Prime-EPA)
2007-2008	\$101,320	Geographic Information System Research and Development for the Northeast Region of the National Park Service	NPS
2007-2008	\$69,350	Decision Support System for the Northeast and National Capital Region Fire Programs (\$69,350)	NPS
2007-2008	\$28,000	Analysis of Forest Cover in Greensboro and Guilford County, NC	Greensboro, NC (Prime – State of NC)
2006-2008	\$20,614	Research and Design of a Draft Data Standard for Trails GIS Data in the Piedmont-South Coast Atlantic CESU	NPS
2006-2007	\$79,943	Weather and Geographic Information Support Services	UNC-Chapel Hill
2006-2007	\$13,090	Research and Development of a Geographic Data Model for National Interagency Historic Trails	NPS
2006-2007	\$15,000	Research and Development of an Expanded Geographic Information System for National Park Service Interagency Environmental Review	NPS
2005-2007	\$125,000	Development of a New GIS Methodology and Data Structure for Wildfire Planning in the Eastern U.S.	NPS
2005-2007	\$177,447	GIS Technical Support Center for the Chesapeake and Allegheny Cluster Parks	NPS

Year	Amount	Title	Sponsoring Agency
2005-2006	\$35,000	Natural Resource Synthesis for George Washington Birthplace National Monument	NPS
2005-2006	\$18,000	Blue Ridge Parkway Wetlands Spatial Data Development and Analysis	NPS
2005-2006	\$21,158	National Geographic Information Systems Technical Support Center - Interagency Trails Data Standards Pilot Study	NPS
2005-2006	\$12,500	Northeast Region Cultural Resources Database Design and Development	NPS
2004-2009	\$167,877	GIS Database Development and Archive for the Northeast Region Inventory & Monitoring Program	NPS
2003-2004	\$100,000	Geographic Information System Research and Development for the Northeast Region of the National Park Service	NPS
2003-2008	\$458,500	GIS Data Management System Design and Implementation for the Northeast Region Inventory and Monitoring Program	NPS
2003-2008	\$49,560	GIS Spatial Analysis for Forest Health Monitoring	USFS
2003-2007	\$~50,000	Tracking the Source of Enteric Pathogens in Surface Waters (\$450,000)	USDA
2003-2007	\$181,385	Water Quality Impacts of Alternative Build-out Scenarios for Brunswick County, North Carolina	NC Division of Water Quality (DENR)
2003-2007	\$50,047	Fire Fuel Mapping for Acadia, New River, and Fire Island	NPS
2003-2007	\$54,000	Vegetation Map Accuracy Assessment for New River Gorge National River and Bluestone National Scenic River	NPS
2002-2003	\$~100,000	Geographic Information System Research and Development for the Northeast Region of the National Park Service	NPS
2002-2003	\$~70,000	Review of Selected Natural Resource Research Data For the Northeast Region Inventory and Monitoring Program	NPS

Year	Amount	Title	Sponsoring Agency
2001-2007	\$70,000	Linking Cultural Resource Data to GIS in Selected National Parks	NPS
2001-2004	\$325,692	Geospatial Vegetation Data Development for Selected National Parks	NPS
2001-2003	\$20,000	Use of GIS for Predicting Valley and Stream Types and Riparian Area Characteristics	USDS FS
2000-2006	\$64,000	An Environmental Water Quality Data Visualization System for Private Ground Water Supplies	NCSU WRI
2000-2005	\$20,000	Vegetation and Digital Image Databases for Appomattox Court House National Historical Park	NPS
2000-2002	\$230,638	Pre-Suppression Fire Planning Through GIS	NC DFS
2000-2001	\$6,700	Low-Cost Video Conferencing for GIS Instruction	NCSU DELTA
2000-2001	\$20,000	Building a Database of Local Government Geodata Resources	NCSU-Extension
2000-2001	\$61,952	National Park Service Enterprise Information System	NPS
1999-2004	\$60,000	New Vegetation Inventory Procedures: Valley Forge National Military Park	NPS
1999-2003	\$27,621	GIS Analysis of Potential National Park Sites in the Chesapeake Bay Region	NPS
1999-2003	\$20,000	National Water Quality Data Conversion Study: National Park Service	NPS
1998-2001	\$270,000	A Comprehensive GIS Data System for Supporting Sustainable Growth in NC	NCSU
1998	\$50,000	Multidisciplinary Curricula in GIS at NC State	NCSU
1997-2001	\$89,500	Urban Forestry Management System	NCSU
1997-2001	\$39,500	Environmental Education Based on GIS-Sci-Link Program	NC-DENR
1997-2000	\$206,000	Use of GIS to Improve Pre-Suppression Fire Planning	NC-DFS
1997	\$65,000	Mid-Atlantic Region Environmental Assessment	USDA-FS
1996-2001	\$82,000	Hoffman Forest GIS	NCSU – Forestry Foundation

Year	Amount	Title	Sponsoring Agency
1996	\$14,000	GIS for Urban Park Management	Cary, NC
1996	\$46,000	Educational Technology Development in GIS	NCSU
1996	\$1,000	GIS for Greenway Planning	Triangle Greenways Council
1996	\$10,000	GIS Database for George Washington Memorial Parkway	NPS
1995-2000	\$100,000	GIS portion of the InStep Educational Technology Grant	NSF
1995	\$198,000	NPS Natural Resource Bibliographic Database for the Eastern US	NPS
1994-2003	\$10,000	Administration Support for Southeastern CPSU Research	NPS
1994-2002	\$719,500	GIS Technical Support Center for Chesapeake & Allegheny Systems Support Offices for the NPS	NPS
1994-2002	\$380,000	National GIS Technical Support Center	NPS
1994-1995	\$260,000	SDIR Educational Technology Project	NCSU
1994	\$8,000	An Urban vegetation Classification Procedure	Cary, NC
1993-1994	\$180,000	A Combined GIS Water Surface Model for the Delaware Water Gap National Recreation Area	NPS
1993	\$30,000	A GIS Technical Support Center for the Mid-Atlantic Region of the National Park Service	NPS
1993	\$10,000	An Urban Vegetation Classification Procedure	Cary, NC
1993	\$9,000	Enhancement of the Cape Hatteras National Seashore GIS	NPS
1993	\$34,000	GIS Data Base Analysis Procedures: Colonial National Park	NPS
1993	\$5,000	Administrative Support for Southeastern CPSU Research	NPS
1992	\$5,000	A Plan for GIS Support for the National Park Service	NPS
1992	\$51,000	Expansion of the Cultural Resource Data Base for Gettysburg National Military Park	NPS
1992	\$6,000	Cartographic Design for GIS Maps	NPS
1992	\$9,000	GIS Data Base Expansion for Colonial National Historical Park	NPS

Year	Amount	Title	Sponsoring Agency
1992	\$5,000	GIS Instruction Via Distance Learning	NPS
1992	\$6,500	A GIS Implementation Plan for Petersburg National Battlefield	NPS
1992	\$3,000	Innovative Teaching Award	NCSU

8. Instructional Leadership

Degrees Created

Master of Geospatial Science and Technology	Fall 2010
Graduate Certificate in GIS	Fall 1998
Masters of Natural Resources (initial faculty)	Fall 1996

Courses Taught or Co-Taught (since 1992)

Course Number	Course Name
AA 501	Analytics Foundations
AA 502	Analytics Methods and Applications I
AA 503	Analytics Methods and Applications II
FOR 405	Forest Management (GIS Module)
FOR 406	Forest Planning (GIS Module)
FOR 520	Forest Hydrology(GIS Module)
GIS 510	Introduction to Geospatial Information Science
GIS 515	Computer Cartography
GIS 520	Advanced Geospatial Analytics
GIS 530	Principles of Geographic Information Science
GIS 550	Geospatial Data Structures and Web Services
GIS 590	Geospatial Information Science Master's Project Course
GIS 610	Special Topics in Geospatial Information Science
NR 100	Natural Resource Issues (SDIR course)
NR 531	Introduction to Geographic Information Science
NR 533	Application Issues In GIS
NR 535	Computer Cartography
NR 610	Special Topics in Natural Resources (GIS)
PRT 462	Intro. to GIS (undergraduate)
PRT 491	Technical Issues in GIS
PRT 491D	Intro to GIS (undergraduate)
PRT 491	Intro to Desktop Mapping (new SDIR GIS course)
PRT 692	Special Topics in GIS
PRT 562	Introduction to GIS
PRT 563	Advanced Tech. In GIS

Course Number	Course Name
PRT 591	Independent Study (GIS Applications)
PRT 664	Special Studies in GIS
PRT 663	GIS Application Issues
PRT 691	Advanced Forest Hydrology (GIS Module)
PRT 696	Graduate Seminar

Current Advisees (2010-2012):

Graduate Advisees	Ph.D Chairman	4
	Ph.D. Member	2
	Masters Chairman	14
	Master's Certificate	35
	Master's Committee	<u>2</u>
	Total	56

Active Dissertations under Supervision (2010-2011): 4