

## **Barnali (Mitra) Dixon Ph.D.**

Associate Professor  
Director of Geo-Spatial Analytics Lab  
Environmental Science, Policy & Geography  
College of Arts and Sciences  
PNM 105, 140 Seventh Ave South  
University of South Florida, St. Petersburg  
St. Petersburg, FL 33701

Phone: (727) 873-4025  
E-mail: bdixon@stpt.usf.edu  
Fax: (727) 873-4752

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### **Education**

Ph.D. in Environmental Dynamics, an interdisciplinary program between Geography and Geology (GIS, remote sensing, fuzzy logic, and neural networks in ground water contamination modeling), University of Arkansas, Fayetteville (2001)  
M.A. Geography (GIS, remote sensing and fuzzy logic in soil erosion modeling), University of Arkansas, Fayetteville (1995)  
M.A. Geography (remote sensing and terrain evaluation in environmental geomorphology), Visva Bharati University, India (1991)  
B.A. Geography (Honors), Visva Bharati University, India (1989)

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### **Special Courses/Certificates**

1. Vadose Zone Hydrology
2. Watershed Management – Modeling and GIS Aspects
3. Water Quality of Surface and Ground Water and Best Management Practices

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### **Professional Experience**

*June 2008 – Present:* Associate Professor, Dept. of Environmental Science, Policy and Geography, University of South Florida St. Petersburg.  
*August 2002 – Present:* Director, Geo-spatial Analytics Lab, Dept. of Environmental Science, Policy and Geography, University of South Florida St. Petersburg.  
*August 2002- May 2008:* Assistant Professor, Dept. of Environmental Science, Policy and Geography, University of South Florida St. Petersburg.  
*August 2001- July 2002:* Visiting Assistant Professor, Dept. of Environmental Science, Policy and Geography, University of South Florida St. Petersburg.  
*May 1993 – July 2001:* Research Assistant/Senior Research Associate, Soil Physics Laboratory, Dept. of Crop, Soil and Environmental Science, University of Arkansas at Fayetteville.

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### **Responsibility May 1995 – July 2001**

#### ***Research Responsibility***

- ✓ Development of models using fuzzy logic and neural networks to predict ground water

- ✓ vulnerability to nitrate-N contamination in karst region of Arkansas,
- ✓ Identification of ground water vulnerability to pesticides and Nitrate-N using fuzzy logic in the Mississippi Delta region of Arkansas,
- ✓ Determination of spatial variability of contamination of ground water Nitrate-N in the Mississippi Delta region of Arkansas,
- ✓ Prediction of soil productivity and crop yield using neural networks and fuzzy logic,
- ✓ Managing the development of Order II digital soils database and compiling secondary attributes for soils,
- ✓ Development of the web site for the Savoy Experimental Watershed (SEW). This web site will provide environmental data and modeling tools (under construction)
- ✓ Development of the fuzzy logic based model used the parameters of USLE.
- ✓ Development and analysis of a digital database to characterize the Buffalo River Watershed.

### **Responsibilities: August 2001- present**

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#### Teaching Responsibility:

##### ***Courses Include:***

(i) Introduction to Physical Geography (ii) Introduction to GIS, (iii) Remote Sensing of the Environment, (iv) Advanced Remote Sensing, (v) Geographic Methods and Techniques, (vi) Digital Thematic Mapping, (vii) Computer Cartography, (viii) Environmental Modeling with GIS, (ix) GIS for Non-Majors, (x) Environmental Applications of GIS, (ix) Soils, Water and Landuse Interactions, and (iix) Spatial Reasoning with GIS

#### Research Responsibility:

##### ***Secured Grant Activities As PI:***

- ✓ Prediction of Ground Water Vulnerability to Animal Wastes/Fertilizers in Karst Topography using Fuzzy Logic. USGS- AWRC: \$55,000 [Duration: 2000 – 2001].
- ✓ Development of a Methodology to Estimate Soil Moisture Content from NEXTRAD-WSR-88D: USF Internal Grant for New Researcher Award: \$9,250 [Duration: 2003]
- ✓ Determining impacts of spatial variability of water quality in the Tampa Bay. USF-Internal Award : \$6,500 [Duration: 2003].
- ✓ Ground Water Vulnerability Delineation using Neural Networks, Fuzzy Logic, and Neuro-Fuzzy techniques: Arkansas. USDA-CSREES: \$305,000 [Duration: 2001 – 2004].
- ✓ Application of Neural Networks and Neuro-Fuzzy Methods to Ground Water Vulnerability Mapping: A GIS-based Integrated Approach in Hillsborough County, FL. Dept. of Environmental protection, FL: \$ 58,921 [Duration 2003 – 2005]
- ✓ Ground Water Vulnerability Delineation Using Integrated GIS and Neuro-Fuzzy Methods for DeSoto, Pinellas and Marion County. USGS- FWRRRC \$152,237 [Duration 2003 – 2004]
- ✓ Development of an integrated methodology to assess vulnerability of ground water to **pathogen intrusion** using GIS, remote sensing, neural networks and neuro-fuzzy methods.

- USGS-Florida Water Resources Research (FWRRC). \$186,119 [Duration 2005 – 2006]
- ✓ Web-based ground water pollution mapping contrast. Intergraph Corp. \$116, 165 [Duration 2005 – 2006]
- ✓ Interfacing SWAT and PHABSIM: A potential GIS-based Water Resource Management Tool. EPA \$178,000 [Duration 2005 – 2006].
- ✓ Using RUSLE and SWAT to Estimate Fluxes and Fates of Eroded Soil Organic Carbon in the Hillsborough River Basin. C-SPACE Grant from EPA. \$105,152 [Duration 2006 - 2007]
- ✓ An Integrated GIS and Remote Sensing-Based Strategy for Assessing the Ecological Outcomes of Social Marketing. C-SPACE Grant from EPA. \$15,000 [Duration 2006 - 2007].
- ✓ Applicability of the SWAT model to quantify the effects of urbanization on the water budget for the Charlie Creek watershed: an integrated approach. USGS. \$52,029 [Duration 2007]
- ✓ Identifying Potential Watershed Nutrient Links to *Karenia* Red Tides: Integrated GIS Watershed Characterization of Southwest Florida coastal counties. FWRI. \$25,000 [Duration 2007]

***Secured Grant Activities As Co-PI:***

- ✓ Water Quality Sampling Strategy for Monitoring Coastal Rivers and Estuaries- Applying Technological innovations to Tampa Bay and tributaries. C-SPACE Grant from EPA. \$114,958 [Duration 2006 - 2007]. Co-PI
- ✓ Pre-schoolers' vocabulary acquisition and understanding of scientific concepts from participation in repeated read aloud events involving informational picture books. Juvenile Welfare Board of Pinellas County and USF Collaborative for Children Families and Communities: \$15,000 [Duration: 2002 – 2003]
- ✓ A Proposal for Teaching FIO Ship time in Support of EVR 4930: Marine Environmental Instrumentation: A Practicum in the Collection and Analysis of Gulf Coast Oceanographic Data. Florida Institute of Oceanography as \$15,200. Co-PI.

**Submitted Proposal Passed Peer Review**

- ✓ **Pending**<sup>1</sup>: Integration of GIS, Neural networks and Neuro-Fuzzy Modeling Techniques to Assess the Vulnerability of a Drinking Water Distribution System. EPA-STAR Grants: \$599,891 [Duration 2004 – 2007].

**Proposals Under Review:**

- ✓ (2009) GEOWE2B: Laboratory for Integrative Environmental Observations, NSF –CCLI, \$198,443 [Duration 2010 – 2011]

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<sup>1</sup> Passed peer review was not funded due to budget cut: EPA Office of Water

- ✓ (2009) Linking Landuse Change, Soil Erosion, and Sediment Yield in Estuaries Using GIS, RS and Cs137: An Integrated Spatio-Temporal Analysis, NSF-Geography and Spatial Sciences, \$273,449 [Duration 2010 – 2011]
- ✓ (2009) Nutrient Pathways to Coastal Blooms on the West Florida Shelf, NASA ROSES2009 A.22, \$160,000 [Duration 2010 – 2012] Co-PI with Dr. Hu
- ✓ (2009) Impacts of changing climate and land use patterns on coastal water quality in southwest Florida: Linking watershed and coastal circulation models with satellite and water quality observations, NASA Roses2009A.22, \$263,000 [Duration 2010 – 2012]

**Proposals Submitted but NOT Funded:**

- ✓ (2006): Estimation of soil water content derived from NEXRAD, MODIS, ASTER, ETM+ and AVHRR: a comparative study using integrated GIS, remote sensing and geostatistical tools. NASA – Terrestrial hydrology Program. \$468,036 [Duration 2006 – 2009]
- ✓ (2007). A Proposal for Teaching FIO Ship time in Support of EVR 4930: Marine Environmental Instrumentation: A Practicum in the Collection and Analysis of Gulf Coast Oceanographic Data. Florida Institute of Oceanography as \$15,200 [Duration 2007]. Co-PI with Casper.
- ✓ (2006): Towards real-time mapping of soil moisture using WSR-88D, NN and neuro-fuzzy and GIS: An integrated approach. USDA-NRI Water and Watershed Program. \$480,043 [Duration 2007 – 2009]. Re-submitted
- ✓ (2007). Integrated GIS and Remote Sensing-Based Land Use Planning Tool to Improve Coastal Water Quality: PLUDMMM. The Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), Environmental Program and Technology Development. \$278,00 [Duration 2007 - 2008]
- ✓ (2007): Managing Invasiveness in a Changing Environment: A Novel Tool for Assessing How Future Climate and Land Use Changes Impact Gulf Coast Invasive Fish Dynamics. EPA STAR \$599,107 [Duration 2008 – 2009] Co-PI with Casper
- ✓ (2007): Assessing Effects of Land use on Estuaries in Puerto Rico: An Integrative Approach. Sea Grant, Puerto Rico \$159,776 [Duration 2008 – 2009] Co-PI with Pyrtle
- ✓ (2007): Analysis and Prediction of CDOM Variability in SW Florida Rivers in Response to Changing Climate and Anthropogenic Environmental Modification. ONR Marine Environmental Optics (ONR322OP) \$710,505 [Duration 2008 – 2010] Co-PI with Dr. Coble
- ✓ (2008): Identifying Potential Watershed Nutrient Links to Karenia Red Tides: Integrated GIS-based Watershed-level Modeling using SWAT for the Manatee River Watershed (FWRI- Red Tide Control and Mitigation Grants): \$74,794 [Duration 2009 – 2010]
- ✓ (2008) Linking Land Use Changes and Estuarine and Coastal Water. NOAA Sea Grant. \$297,704 [Duration 2009 – 2010]
- ✓ (2008) Integrated Watershed Level Hydrology, Integrated watershed level-hydrologic modeling for prediction of soil-derived carbon and sediments in coastal waters. NSF - ETBC (Emerging Topics in BC). \$1,052,704. [Duration 2008 to 2009]
- ✓ (2008) Linking Landuse Change, Soil Erosion and Sediment Yield, NSF-Chemical

- oceanography, \$112,284 [Duration 2008 to 2009] **Co-PI** with Dr. Pyrtle
- ✓ (2009) Linking Landuse Change, Soil Erosion and Sediment Yield in Estuaries Using GIS, RS and Cs137: An Integrated Approach, NSF-Hydrological Science, \$394,641 [Duration 2009 – 2011]
  - ✓ (2009) Understanding the spatio-temporal dynamic & scale issues of landuse change & watershed characteristics & their links to in-stream & estuarine water quality : An integrated approach, NSF-Ecosystem Science Cluster, \$857,874 [Duration 2009 – 2011]

## Graduate Advising

### ***Thesis/Dissertation Committee Chair:***

- i. Ms. W. Batita – Co-Major Professor (Department of Environmental Management, Mediterranean Agronomic Institute of Chania( **MAICh**), Greece) '*Examining resolution effects on the prediction of the soil erosion using RUSLE and MUSLE models for in Florida and Greece*'. Graduated 2009.
- ii. Ms. Shannon Connlley – Major Professor (Department of Environmental Science, Policy and Geography). Title: *Soil moisture mapping using remote sensing and GIS*.
- iii. Mr. Fredrik Bradley - Major Professor (Department of Environmental Science, Policy and Geography). Title: *Development of a comprehensive flow path model to determining factors contributing to the spatial variability of water quality including CDOM Concentrations in selected agricultural watersheds using GIS and RUSLE Model*.
- iv. Mr. Rene Baumstrak – Major Professor (Department of Environmental Science, Policy and Geography). Title: *An evaluation of image segmentation, texture analysis and pixel classification techniques for mapping Seagrass from satellite imagery in Springs Coast Florida and evaluating the effectiveness of these techniques in replacing traditional photointerpretation methods*.
- v. Ms. R. Hernandez-Cruz – Co-Major Professor (College of Marine Sciences, USF). Title: '*A remote sensing study of sediment transport in tropical ecosystems*'.
- vi. Ms. N. Williams – Co-Major Professor (College of Marine Sciences, USF Tampa). Title: '*Assessing impact of landuse changes on estuaries in Puerto Rico: an integrative approach*'

### ***Thesis/Dissertation Committee Member***

- vii. Ms. C. Keller - dissertation committee (Dept. of Biology, USF Tampa) Title: '*Status of Gopher tortoise population in central Florida*.' A major component of her dissertation is remote sensing (image classification of Landsat TM Data). Graduated 2005.
- viii. Ms. N. Candade – thesis committee (Dept. of Biomedical Engineering, USF). Title: *Application of SVM and NN in Digital Image Processing: A comparative study*. Graduated 2004
- ix. Ms. S. Saleem - thesis committee (College of Marine Sciences, USF Tampa). Title: *Geomorphology of Submarine Springs West of Ft. Myers, Florida*. Graduated 2007
- x. Ms. Renee Duffy – thesis committee (Department of Environmental Science, Policy and

- Geography). *Title: A multi-scale approach to characterize habitat selection of tidal creek fish in Charlotte Harbor, Florida*
- xi. *Mr. James Banning – thesis committee* (Department of Environmental Science, Policy and Geography). *Title: Assessing the Effectiveness of the Roaring Branch BMP Retrofit Using Macroinvertebrate Bioassessment, Spring 2010*
- xii. *Karen L. Dreger – thesis committee* (Department of Environmental Science, Policy and Geography). *The Use of Unmanned Surface Vehicles for Seagrass Mapping*

## Publications

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### *Journal Publications*

1. **Mitra, B.**, H. D. Scott, J.C. Dixon and J.M. McKimney. 1998. Application of fuzzy logic to the prediction of soils erosion in a large watershed. *Geoderma*. 86:183 - 209.
2. **Dixon, B.**, H.D. Scott, J.C. Dixon, and K.F. Steele. 2002. Prediction of Aquifer Vulnerability to Pesticides Using Fuzzy Rule-Based Models at the Regional Scale. *Physical Geography* 23:130 - 152.
3. **Dixon, B.** 2004. Prediction of Ground Water Vulnerability using an integrated GIS-based neuro-fuzzy techniques. *Journal of Spatial Hydrology*. 4(2):1 – 38.  
<http://www.spatialhydrology.com/journal/>
4. **Dixon, B.** 2005. Ground water vulnerability mapping: a GIS and fuzzy rule based integrated tool. *Journal of Applied Geography*. 25: 327 – 347.
5. **Dixon, B.** 2005. Applicability of Neuro-fuzzy techniques in predicting ground water vulnerability: A sensitivity analysis. *Journal of Hydrology*. 309: 17 - 38
6. **B. Dixon** and Earls<sup>1</sup>, J. 2007. Examining Spatio-Temporal Relationships of landuse change, population growth and water quality in the SWFWMD. *Interdisciplinary Environmental Review (IER)*. Vol. IX (no.11) :71 - 93.
7. **Dixon, B.** Li D., Earls<sup>1</sup>, J and Xinhua Liu. 2007. The Study on Groundwater Vulnerability Assessment Method. *Environmental Protection Science*. 33 (5):50 - 55.
8. **Dixon, B.** and Candade<sup>1</sup>, N. 2008. Multispectral landuse classification using neural networks and support vector machines: one or the other or both? *International Journal of Remote Sensing*. 29(4) 1185 - 1206.
9. J. Earls<sup>1</sup> and **Dixon B.** 2008. A Comparison of SWAT Model-Predicted Potential Evapotranspiration: Using Real and Modeled Meteorological Data. *Vadose Zone Journal: Special issue paper. Multiscale Mapping: Physical Concepts and Mathematical Techniques*. Soil Science Society of America. 7(2):570–580
10. Earls, J<sup>1</sup>. and **Dixon, B.** 2008. Using the Fractal Dimension to Differentiate Between Natural & Artificial Wetlands. *Interdisciplinary Environmental Review (IER)*, Vol. X, (no. 1): 33-44.
11. **Dixon, B.** 2009. A Case Study Using SVM, NN and Logistic Regression in a GIS to Predict Wells Contaminated with Nitrate-N. [*Accepted: Hydrogeology Journal*] DOI:

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<sup>1</sup> Student Research Assistant

10.1007/s10040-009-0451-1

12. **Dixon, B.** and Earls, J<sup>1</sup>. 2009. Resample or not?! Effects of Resolution of DEMs In Watershed Modeling. *Journal of hydrological Processes*. 23(12): 1714 – 1724.
13. Williams, N., **B. Dixon** and A. J. Pyrtle. 2009. Estimating Soil Loss from Two Coastal Watersheds in Puerto Rico with RUSLE. [*Accepted*: *Interdisciplinary Environmental Review (IER)*].
14. **Dixon, B.** 2008. Sensitivity Analysis of Application of SVM and ANN Algorithms to Landuse Classification” A Spatial Uncertainty Perspective. [*In review*: *International Journal of Applied Geospatial Research*]
15. **Dixon, B and** Earls, J<sup>1</sup>. 2009. Effects of Urbanization on Streamflow Using SWAT with Real and Simulated Meteorological Data. [*In review*: *International Journal of Applied Geospatial Research*]
16. **Dixon, B.** and Lothe<sup>1</sup>, A. 2009. JAVA Program for Calculation of Attenuation Factor of Pesticides. [*In review*: *Journal of Environmental Modeling and Software*]
17. Casper, A.F., **Dixon, B.**, Earls, J., Gore, J.A. 2009. Ecohydrology in ungauged river basins: Constraints in integration watershed hydrology models with instream habitat models when setting minimum flows and levels. [*Accepted*: *Journal of River Research and applications*]

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### Book Chapters/Invited Paper

1. Li, D. **Dixon, B.**, Earls, J. F. Bradley and Xinghua, Liu. 2007. The Study on Vulnerability Assessment in Groundwater Recharge Area of Jinan. *Environmental Protection*, 378(8B):59 – 61. Environmental Protection of China Press.
2. Earls, J<sup>1</sup>. and **Dixon, B.** 2005. A comparative study of the effects of input resolution on the SWAT model. Pages 213 – 222. In (C. A. Brebbia, and J. S. Antunes do Carmo eds.) *River Basin Management III*. WIT Press, Southampton, UK.
3. **Dixon, B.** 2004. Can an integrated ground water vulnerability mapping tool facilitate sensitivity analysis in a spatial domain?? In (J. F. Martin-Daque; C. A. Brebbia; A. e. Godfrey and J.R. Diaz de Teran eds.) *Geo Environment*. WIT Press, Southampton, UK.
4. **Dixon, B.** 2002. Application of Neuro-Fuzzy techniques to predict ground water vulnerability. Pages 485 – 495. In (C. A. Brebbia, ed.) *Risk Analysis III*. WIT Press, Southampton, UK.
5. **Mitra, B.**, J. M. McKimmey and H. D. Scott. 1997. Development and use of digital databases in agricultural research. *Trends in Agronomy*, 1:1-17.

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### Monographs

1. J. M. McKimmey, **B. Dixon**, H.D. Scott and C. M. Scarlat. 2002. *Soils of Mississippi County, Arkansas*. Special report series. Arkansas Agricultural Experiment Station. Pub # 970. University of Arkansas, Fayetteville.
2. **Dixon, B.**, T. H. Udouj, H. D. Scott, R. L. Johnson and J.M. McKimmey. 2001. *Soils of*

- Randolph County, Arkansas. Special report series. Arkansas Agricultural Experiment Station. Pub. # 199. University of Arkansas, Fayetteville.
3. **Dixon, B.**, T. H. Udouj, H. D. Scott, and J.M. McKimney. 2001. Soils of Clay County, Arkansas. Special report series. Arkansas Agricultural Experiment Station. Pub # 202. University of Arkansas, Fayetteville.
  4. Johnson, R.L., **B. Dixon**, H. D. Scott, J.M. McKimney and T.H. Udouj. 1999. Soils of Jackson County, Arkansas. Special report series. Arkansas Agricultural Experiment Station. Pub. # 192. University of Arkansas, Fayetteville.
  5. Scott, H.D., **B. Dixon**, J.M. McKimney, T. H. Udouj and R. L. Johnson. 1998. Soil of Desha County, Arkansas. Special report series. Arkansas Agricultural Experiment Station. Pub. # 187. University of Arkansas, Fayetteville.

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### Edited Volume(s)/ Peer Reviewed Conference Proceedings Papers

1. **Dixon, B**, Earls, J. A. F. Casper, J. A Gore. 2009. Integrating Spatially Explicit Watershed Models With In-Stream Habitat Models: A Discussion on Constraints With Regard to the Resolution of Data. AWRA Spring Specialty Conference: Managing Water Resources and Development in a Changing Climate. Paper in AWRA conference CD. May 4 – 6<sup>th</sup> Anchorage, Alaska.  
<http://www.awra.org/tools/members/Proceedings/0905conference/oral.html>
2. **Dixon, B** and Earls J. 2008. An estimation of Regional Soils Erosion Vulnerability using RUSLE-V. Papers of IASTED International Conference on Applied Simulation and Modeling. Corfu, Greece, June 23<sup>rd</sup> – 25<sup>th</sup>.
3. Earls, J. and **B. Dixon**. 2008. The Influence of Resolution on the SWAT Model: Examining Neighboring Basins. Spring Specialty Conference GIS and Water Resources V. San Mateo, CA, Mar 17-19, 2008. *Paper on Conference CD AWRA*.
4. Earls, J<sup>1</sup> and **B. Dixon**. 2007. Application of the Soil and Water Assessment Tool (SWAT) in modeling the effects of landuse change on watershed hydrology. Vol. 30, pages 541-522. In (**L. Harrington & J. Harrington, Jr, eds.**). Papers of The Applied Geography Conferences. Indianapolis, IN.
5. Earls, J<sup>1</sup> and **B. Dixon**. 2007. Spatial Interpolation of Rainfall Data Using ArcGIS: A Comparative Study. 27<sup>th</sup> Annual ESRI International User Conference.  
[http://www10.giscafe.com/link/display\\_detail.php?link\\_id=22230](http://www10.giscafe.com/link/display_detail.php?link_id=22230). San Diego, June 18-22, 2007.
6. A.F. Casper, M.L. Hall, **B. Dixon** and E.T. Steimle. 2007. Combining Data Collection from Unmanned Surface Vehicles with Geospatial Analysis: Tools for Improving Surface Water Sampling, Monitoring, and Assessment. Proceedings of OCEANS 2007 MTS/IEEE Vancouver. 2007 ISBN CD-ROM: 0-933957-35-1, Vancouver, British Columbia. September 29 – October 4

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<sup>1</sup> Student Research Assistant

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7. Earls<sup>1</sup> J., N. Candade<sup>1</sup> and **B. Dixon**. 2006. A Comparative Study of Landsat 5 TM Landuse Classification Methods including Unsupervised Classification, Neural Network and Support Vector Machine for Use in a Simple Hydrologic Budget Model. ASPRS Annual Conference - Prospecting for Geospatial Information Integration – Reno, NV - May 1-5.
8. Earls<sup>1</sup> J and **Dixon, B.** 2006 The Influence of Resolution on the SWAT Model: Examining Neighboring Basins. In (***Maidment, David R. and John S. Grounds III, eds***). GIS and Water Resources IV. Proceedings of the American Water Resources Association's 2006 Spring Specialty Conference. American Water Resources Association, Middleburg, Virginia, TPS-06-1, CD-ROM. ISBN 1-882132-70-X
9. Earls<sup>1</sup> , J and **Dixon, B.** 2006. Comparison of annual calibration of SWAT model at differing resolutions. In (***Mark Colosimo & Donald F. Potts, eds***). Adaptive Management of Water Resources. AWRA Summer Specialty Conference MT, June 26-28. ISBN: 1-882132-71-8.
10. Earls, J<sup>1</sup>. and **Dixon, B.** 2005. Calculation of Evapotranspiration and Hydrologic budget from Landsat TM derived landuse maps for two unique drainage basins. Vol. 28, pages 413-422. In (***G. A. Tobin and B. E. Montz, eds.***). Papers of the Applied Geography Conferences. Washington D.C.
11. **Dixon, B.** and Candade, N<sup>1</sup>. 2004. Comparison of Neural Network and Neuro-fuzzy Techniques in Ground Water Vulnerability Mapping: A Case Study. Pages 1 – 10. In (***Kenneth J. Lanfear and David R. Maidment, eds.***) AW RA's 2004 Spring Specialty Conference "Geographic Information Systems (GIS) and Water Resources III." American Water Resources Association, Middleburg, Virginia, TPS-04-1, CD-ROM.
12. Candade<sup>1</sup>, N and **Dixon, B.** 2004. Multispectral classification of Landsat images: Comparison of Support Vector Machine and Neural Network classifiers. Presentation. ASPRS Annual Meeting. Denver, May 2004. Mira Digital Publishing. Bethesda, Maryland. ISBN 1-57083-072-X.
13. **Dixon, B.** 2003. Can contamination potential of ground water to pesticides be identified from hydrogeological parameters? Vol. 26, pages 237 – 247. In (***B. E. Montz and G. A. Tobin, eds.***) Papers and Proceedings of The Applied Geography Conferences. University of Colorado at Colorado Springs, Colorado Springs, Co.
14. **Dixon, B.** 2002. Can ground water sampling strategy be improved by incorporating fuzzy logic in a GIS? Vol. 25, Pages 254 – 264. In (***B. E. Montz and G. A. Tobin, eds.***) Papers and Proceedings of The Applied Geography Conferences. Binghamton University, Binghamton, NY.

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### Technical Reports and Other publications

1. **Dixon, B.** 2009. Existing methods of Nitrate Monitoring. Report completed for Harmonic Nitrate Monitoring. 64 p.
2. **Dixon, B.** 2008. Applicability of the SWAT model to quantify the effects of urbanization on the water budget for the Charlie Creek watershed. USGS Final report. 32 p.
3. **Dixon, B.** 2008. Identifying Potential Watershed Nutrient Links to *Karenia* Red Tides:

- Integrated GIS Watershed Characterization of a southwest Florida coastal counties. FWRI Final report. 25 p.
4. Earls J<sup>1</sup> and **Dixon, B.** 2007. Methodology for Sensitivity Analysis of the SWAT Model to the Resolution of Input, Calibration and Validation of Data. USFSRG Completion Report. 15 p.
  5. **Dixon, B.** 2006. Ground Water Vulnerability Delineation Using Integrated GIS and Neuro-Fuzzy Methods. FWRRRC Completion Report. 30 p. Subcontract UF-EIES-0404012-USF (3/1/04 - 2/28/05).
  6. **Dixon, B.**, H. D. Scott and A. M. Mauromoustakos. 2005. Ground Water Vulnerability Delineation Using Neural Networks, Fuzzy Logic, and Neuro-Fuzzy Techniques: Arkansas. USDA- CSREES Completion report 115 p.
  7. **Dixon B.** 2004. Application of Neural Networks and Neuro-Fuzzy Methods to Ground Water Vulnerability Mapping: A GIS-based Integrated Approach in Hillsborough County. Funded by FL. Dept. of Environmental protection, FL. Completion report 75 p.
  8. Leung, C. and **Dixon, B.** 2003. Pre-schoolers' vocabulary acquisition and understanding of scientific concepts from participation in repeated read aloud events involving informational picture books. Juvenile Welfare Board of Pinellas County and USF. 62 p. Collaborative for Children Families and Communities: Completion Report. 62 p.
  9. **Dixon, B.** and H. D. Scott. 2001. Application of fuzzy logic to predict ground water vulnerability in Northwest Arkansas. AWRC-USGS Completion Report, MSC # 240
  10. **Dixon, B.** and H. D. Scott. 1998. Use of fuzzy logic with modified DRASTIC parameters to predict ground water contamination. In (H. D. Scott, ed.) Vulnerability and use of ground and surface waters in the southern Mississippi valley region. AWRC Completion Report No. 269, 16 – 51.
  11. **Dixon, B.** 2001. Application of Neuro-fuzzy techniques to predict ground water vulnerability in Northwest Arkansas. Ph.D. Dissertation. University of Arkansas, Fayetteville, Arkansas.
  12. **Mitra, B.** 1995. Application of fuzzy logic to identify soil erosion, M.A. Thesis, University of Arkansas. Fayetteville. Arkansas.
  13. **Mitra, B.** 1991. Suri and Its Environs: A case study in environmental geomorphology, M.A. Thesis, Visva Bharati University. Santiniketan, West Bengal, India.

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### Invited Speaker

- i. **Dixon, B.** and J. Earls. 2009. Integration of GIS for Infrastructure Management and Risk Analysis. ([Florida Planning and Zoning Association - FPZA](#)): Workshop on Urban Places/Rural Spaces: Planning For Tomorrow. Tampa, June 10 – 13.
- ii. **Dixon, B.** and J. Earls. 2008. Tutorial session: Introduction to Using the Soil Water Assessment Tool Model Integrated with ArcGIS 9 with Demonstration. IASTED ([International Conference on Applied Simulation and Modeling](#)). Corfu, Greece, June 23<sup>rd</sup> – 25<sup>th</sup>

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<sup>1</sup> Student Research Assistant

- iii. **Dixon, B.** 2007. Fractal Dimension Analysis of Wetlands: a joint venture between applied mathematics and theoretical physics. [Applied Mathematics Summer Workshop](#) hosted by Applied Mathematics Research Center, sponsored by Department of Defense. August 24<sup>th</sup> – 26<sup>th</sup>. Dover, Delaware.
- iv. **Dixon, B.** 2007. Examination of the spatial relationship of soils, landuse and slopes to florescence data in selected watersheds: An integrated analysis with GIS. [Charlotte Harbor National Estuary Program](#). May 28 – 30<sup>th</sup>, Ft. Meyers, FL
- v. **Dixon, B.** 2006. Sensing Flow and Water Quality. Presented at [SWFWMD Workshop](#), Jan 26<sup>th</sup> 2006, Brooksville, FL
- vi. Gore, J. **Dixon, B.**, and A. Casper. 2006. Assessing Florida's large rivers: GIS-based data-mining and the impacts of the Atlantic Multi-decadal Oscillation. [Great River Ecosystems Reference Condition Workshop](#), January 10-11, 2006, Cincinnati, OH.
- vii. **Dixon, B.** 2006. GIS application for Ground Water. Presented at the workshop hosted by [American Ground Water Trust](#). June, 2006, Arcadia, FL. Sponsored by USGS and American Ground Water Trust.
- viii. **Dixon, B.** 2005. Sensing the Flow and Water Quality: How remote sensing and GIS can facilitate spatio-temporal modeling of interactions among hydrology, pollutant loading and habitat. Seeing the Big Picture Symposium, Sarasota, FL. Sponsored by [Mote Marine Aquarium & Laboratory](#) and EDC Sarasota County. September 15-16.
- ix. **Dixon, B.** and Earls, J. 2005. Mapping and Modeling: GIS and Remote Sensing Data Integration Issues. [Suwannee River Basin and Estuary Initiative](#) Second Annual Integrated Science Workshop Folkston, GA, June 28-29, 2005. Sponsored by [USGS](#).

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### Presentations at Professional Meetings

1. Williams N. B, **B. Dixon** and A. J. Pyrtle. 2010. Linking Soil Erosion to sediment Characteristics in a Coastal Tropical Watershed. Ocean Sciences Meeting, Portland, Oregon. 22-26, February
2. Williams, N., **B. Dixon** and A. J. Pyrtle. 2009. Estimating Soil Loss From Two Coastal Watersheds in Puerto Rico with RUSLE. 15<sup>th</sup> International Interdisciplinary Conference on the Environment. Interdisciplinary Environmental Association. Daytona Beach, Florida. July 8-11.
3. Bradley F. and **Dixon B.** 2009. Examining the Relationship between RUSLE and In-Stream Water Quality Parameters: A Statistical Approach. 15<sup>th</sup> International Interdisciplinary Conference on the Environment. Interdisciplinary Environmental Association. Daytona Beach, Florida. July 8-11.
4. **Dixon, B.** and Shannon Conley. 2009. Characterization of Soil Properties to Derive Pedo-Transfer Functions to Map Soil Moisture at a Regional Scale: A Comparative Study. AWRA Spring Specialty Conference: Managing Water Resources and Development in a Changing Climate. Paper in AWRA conference CD. May 4 – 6<sup>th</sup> Anchorage, Alaska.
5. **Dixon, B.**, Earls, J. A. F. Casper, J. A Gore. 2009. Integrating Spatially Explicit Watershed

- Models With In-Stream Habitat Models: A Discussion on Constraints With Regard to the Resolution of Data. AWRA Spring Specialty Conference: Managing Water Resources and Development in a Changing Climate. May 4 – 6<sup>th</sup> Anchorage, Alaska.
6. Bradley, F<sup>2</sup>. and **B. Dixon**. 2009. Using GIS to Investigate Soil Physical Properties in Four South Florida Watersheds. 45<sup>th</sup> Annual FSG Meeting, St. Augustine, FL, Jan 23-25.
  7. Connelly, S<sup>2</sup>. and **B. Dixon**. 2009. Mapping Soil Moisture at a Regional Scale Using Integrated Remote Sensing, GIS, and Radar Precipitation: A Comparative Study. 45<sup>th</sup> Annual FSG Meeting, St. Augustine, FL, Jan 23-25.
  8. Bradley, F<sup>2</sup>. and **B. Dixon**. 2008. Investigating the Impacts of Soil Erosion and Sediment Yield on Water Quality. USF 2008 Poster Symposium & Competition title Global Challenges for the 21st Century, Tampa, FL. Nov 6.
  9. Bradley, F., **B. Dixon** and D. Li. 2008. Investigating Groundwater Contamination Potential in Jinan, China Using GIS. Annual ESRI International User Conference. San Diego, CA. Aug 4-8
  10. Earls, J<sup>1</sup> , **B. Dixon** and Karlin A. 2008. Using ERDAS Imagine to Derive Impervious Surfaces from High Resolution Aerial Photography and LiDAR. Annual Meeting American Association of Geographers - Boston, MA, April 15-19.
  11. Earls, J<sup>1</sup>. and **B. Dixon**. 2008. The Influence of Resolution on the SWAT Model: Examining Neighboring Basins. Spring Specialty Conference GIS and Water Resources V. San Mateo, CA, Mar 17-19.
  12. Earls, J<sup>1</sup>. and **B. Dixon**. 2008. The Effects of Landuse and Soil Characteristics On Nutrient Loading Using the Soil & Water Assessment Tool (SWAT): A Comparative Study. Ocean Sciences Meeting, Orlando, FL, Mar 2-7, 2008.
  13. Bradley, F<sup>2</sup>. and **B. Dixon**. 2008. Using RUSLE to Investigate the Watershed Source-Sink Relationship of CDOM. AAG Boston, MA, Apr 15-19.
  14. Bradley, F<sup>2</sup>., **B. Dixon** and J. Earls. 2008. Characterization of the Spatial Variability of Terrestrial Watershed Properties In Relation to In-Stream CDOM Distributions. AWRA Spring Specialty Conference - GIS and Water Resources V, San Mateo, CA. Mar 17-19.
  15. Earls, J<sup>1</sup> and **B. Dixon**. 2007. Assessment of the Effect of Varying Input Soil Data To Predict Stream flow Using the SWAT Model. ASA-CSSA-SSA International Annual Meeting. New Orleans, LA, Nov 4-8.
  16. Earls, J<sup>1</sup> and **B. Dixon**. 2007. Application of the Soil and Water Assessment Tool (SWAT) in modeling the effects of landuse change on watershed hydrology. 30<sup>th</sup> Applied Geography Conferences. Indianapolis, IN. Oct 17 – 20.
  17. **Dixon, B.**, Stetson, R<sup>1</sup>. and Smith S. 2007. Examining Resolution Effects on the Prediction of the Revised Universal Soil Loss Vulnerability Equation (RUSLE-V). Florida Society of Geographers Annual Meeting, Jacksonville, FL. February.
  18. **Dixon, B.**, Stetson, R<sup>1</sup> and Smith S. 2007. Creating a Soil Erosion Vulnerability Map at 3 Different Resolutions for the US Southeast” Florida Academy of Sciences Annual Meeting

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2 Grad student

1 Student Research Assistant

1 Student Research Assistant

1 Student Research Assistant

- St.Petersburg, FL. March.
19. Stetson, R<sup>1</sup> and **Dixon, B.** 2007. Resolution Effects on the Prediction of RUSLE in 3 different physogeographic Regions of the US” American Association of Geographers Annual Meeting, San Francisco, CA. April.
  20. Earls J<sup>1</sup> and **Dixon B.** 2007. Spatial Interpolation of Rainfall Data Using ArcGIS: A Comparative Study”. 27<sup>th</sup> Annual ESRI International User Conference. San Diego, June.
  21. Stetson, R<sup>1</sup>, **Dixon B.**, Candade, N<sup>7</sup>. 2007. A Comparison of Kriging Methods for Well Contaminates in the Tampa Bay Region of Florida. 27<sup>th</sup> Annual ESRI International Users Conference, San Diego, CA. June.
  22. Earls, J<sup>1</sup>. and **Dixon, B.** 2007. Evaluation of Drainage Basin Delineation: ArcHydro & the Soil & Water Assessment Tool (SWAT). Association of American Geographers Meeting, San Francisco, CA, April.
  23. Earls, J<sup>1</sup>. and **Dixon, B.**2007. Sensitivity Analysis of the SWAT Model to the Resolution of Input, Calibration and Validation of Data. American Society of Photogrammetry and remote Sensing Annual Conference, Tampa, FL, May.
  24. Earls, J<sup>1</sup>. and **Dixon, B.**, 2007 Effects of Input Resolution on Stream flow Predicted by the SWAT Model. Presented at Florida Academy of Sciences Annual Meeting, St. Petersburg, FL, Mar.
  25. Earls, J<sup>1</sup>. and **Dixon, B.**, 2007. Evaluation of the Sensitivity of Fractal Dimension Analysis for Classification of Natural vs. Artificial Wetlands. Presented at Florida Society of Geographers Annual Meeting, Jacksonville, FL, February.
  26. Johns R, **Dixon, B.**, Dennison, D<sup>1</sup> and Stetson, R<sup>1</sup>. 2007. Space-Time Convergence in the Creation of Opportunities for Violent Crime against Children in Pinellas and Hillsborough Counties, Florida: minimizing access through public policy. Florida Society of Geographers Annual Meeting, Jacksonville, FL, February.
  27. Earls, J<sup>1</sup>., **Dixon, B.** & Prieto, M<sup>1</sup>. 2006. Sensitivity of Fractal Dimension Analysis to Resolution of Input Data for Classification of Natural vs. Artificial Wetlands. Presented at the 29<sup>th</sup> Annual Applied Geography Conference, Tampa, FL, Oct.
  28. Earls<sup>1</sup> J and **Dixon, B.** and Holmes, M. 2006. An Evaluation of the SWAT Model Sensitivity and autocorrealtion to Regression Analysis of Flow Data for Charlie Creek, Central FL. 29<sup>th</sup> Applied Geography Conference, Tampa FL. Oct 11 – 14.
  29. Earls<sup>1</sup>, J and **Dixon, B.** 2006. A comparison of Model-Predicted Evapotranspiration by the SWAT Model with real and Modeled Meteorology. 18<sup>th</sup> Wo0rld Congress of Soil Scince, Philadelphia, PA. July 10<sup>th</sup> – July 14<sup>th</sup>.
  30. Earls<sup>1</sup>, J and **Dixon, B.** 2006. The Influence of Resolution on the SWAT Model: Examining Neighboring Basins. Spring Specialty Conference GIS and Water Resources IV. Houston, TX, May 8-10.
  31. Earls<sup>1</sup>, J and **Dixon, B.** 2006. Comparison of annual calibration of SWAT model at differing resolutions. Adaptive Management of Water Resources, AWRA Summer Specialty Conference MT, June 26-28.

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2 grad student

1 Student Research Assistant

32. **Dixon, B.**, Candade, N<sup>1</sup>. and J. Earls<sup>1</sup>. 2006. Development of an integrated methodology to assess vulnerability of ground water to pathogen intrusion using GIS, remote sensing, neural networks and neuro-fuzzy methods. American Association of Geographers, Annual Meeting, Chicago, IL, March.
33. Earls<sup>1</sup>, J. and **Dixon, B.** 2006. Utilizing SWAT to Model Spatio-Temporal Influences on River Basins At Differing Resolutions Annual Meeting Association of American Geographers, Chicago, IL Mar 7-10.
34. Earls<sup>1</sup>, J., N. Candade<sup>1</sup> and **B. Dixon.** 2006. A Comparative Study of Landsat 5 TM Landuse Classification Methods including Unsupervised Classification, Neural Network and Support Vector Machine for Use in a Simple Hydrologic Budget Model. ASPRS Annual Conference - Prospecting for Geospatial Information Integration – Reno, NV - May 1-5
35. **Dixon, B.**, R. Stetson<sup>1</sup> and J. Earls<sup>1</sup>. 2005. Examining Spatio-temporal relationships of landuse change, population growth, and water quality in Tampa Bay area. Applied Geography Conference. Washington D.C. November.
36. **Dixon, B.** and Candade N<sup>1</sup>. 2005. Integrated GIS and machine learning algorithms applied to ground water contamination mapping: a comparative study. Applied Geography Conference. Washington D.C. November.
37. Earls<sup>1</sup>, J and **Dixon, B.** 2005. Using landsat 5 TM to determine landuse classification for representing seasonal ET from 2 unique Drainage Basins in a hydrologic budget. Applied Geography Conference. Washington D.C. November,
38. Earls<sup>1</sup>, J. and **Dixon, B.** 2005. SWAT: How Much Does Resolution of Soils Matter When Comparing Real vs. Simulated Meteorological Data? Soil Science Society of America Annual Meeting. Salt Lake City. November. Poster.
39. **Dixon, B** and Candade, N<sup>1</sup>. 2005. Can Logistic Regression and/or Feature Selection Methods Be Used to Predict Contaminated Wells? a Case Study of Polk County, Florida. Soil Science Society of America Annual Meeting. Salt Lake City. November. Poster.
40. **Dixon, B.** and Candade N<sup>1</sup>. 2005. Groundwater Contamination Mapping Using Integrated GIS and Neural Networks: A Sensitivity Analysis. Presentation. International Conference on Environmental Science and Technology. January, New Orleans.
41. Candade<sup>1</sup>, N. and **B. Dixon.** 2005. Effects of Training Sizes and Dimensionality on NN and SVM Performance: A Comparative Study. American Association of Geographers, Annual Meeting, Denver, CO, April.
42. Stetson<sup>1</sup> R, **Dixon, B.** and Candade, N<sup>1</sup>. 2005. Comparison of various krigging methods for contaminated wells in Tampa Bay region FL, Poster. Florida Society of Geographers, Annual meeting. Orlando, Feb. 2005.
43. **Dixon, B.**, Scott, H.D and A. M. Mauromoustakos. 2004. A GIS-based comparison of neural networks and neuro-fuzzy models to predict ground water vulnerability. Seattle November 2004.
44. **Dixon, B.** 2004. Can integrated ground water vulnerability mapping tool facilitate sensitivity analysis in a spatial domain? Presentation. International Conference on Geo

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<sup>1</sup> Student Research Assistant

- Environment. Spain, July 2004.
45. **Dixon, B.** 2005. Does Resolution Matter? A comparative Assessment of Physically-based SWAT Model. Presentation. 4th International Conference in Risk Analysis and Hazard Mitigation. Greece, September, 2004.
  46. **Dixon, B.** 2004. A comparison of fuzzy logic and neuro-fuzzy based methodologies to predict ground water contamination potential. Presentation. American Association of Geographers, Annual Meeting, Philadelphia, PA, March 14th – 19th.
  47. Candade<sup>2</sup>, N and **Dixon, B.** 2004. Application of GIS-based neural networks to predict ground water contamination potential. Poster. American Association of Geographers, Annual Meeting, Philadelphia, PA, March 14th – 19th
  48. **Dixon, B.** 2004. Ground Water Vulnerability Mapping Tool: NN and fuzzy logic: one, the other, or both?? Presentation. AWRA's 2004 Spring Specialty Conference Geographic Information Systems (GIS) and Water Resources III Water. Nashville, May 2004.
  49. Candade<sup>1</sup> N and **Dixon, B.** 2004. Comparison of Neural Network and Neuro-fuzzy Techniques in Ground Water Vulnerability Mapping: A Case Study. Poster. AWRA's 2004 Spring Specialty Conference Geographic Information Systems (GIS) and Water Resources III Water. Nashville, May 2004
  50. Candade<sup>1</sup>, N and **Dixon, B.** 2004. Multispectral classification of Landsat images: Comparison of Support Vector Machine and Neural Network classifiers. Presentation. ASPRS Annual Meeting. Denver, May 2004.
  51. Candade<sup>1</sup>, N. and **Dixon, B.** 2004. Supervised classification of spectrally enhanced Landsat TM data of Joshua Creek Watershed, Florida. Presentation. Annual meeting of Florida Society of Geographers, 2004, Pensacola Beach, FL. February 6th – 8th .
  52. Candade, N and **Dixon, B.** 2004. Integrated Vulnerability Assessment of Ground Water for Hillsborough County, Florida: A Case Study. AWRA Annual Conference, Orlando, November.
  53. **Dixon, B.** 2003. Assessing Transferability of a GIS-Based Neuro-fuzzy Model to Predict Ground Water Contamination Potential. Presentation. American Association of Geographers, Annual Meeting, New Orleans, LA, March.
  54. **Dixon, B.** 2003. A comparison of fuzzy logic and neuro-fuzzy based methodologies to predict groundwater vulnerability. Presentation. Soil Science Society of America Annual Meeting, Denver, CO, Nov 2 – 5th
  55. **Dixon, B.** 2003. Can contamination potential of ground water to pesticides be identified from hydrogeological parameters? Presentation. 26th Applied Geography Conference. Colorado Springs, CO, November 5th – 8th.
  56. Bailey,<sup>1</sup> A. N. and **Dixon, B.** 2003. A Methodology to Estimate Soil Moisture Content from WSR-88D Data. Presentation. American Association of Geographers, Annual Meeting, New Orleans, LA, March.
  57. Streubert<sup>1</sup>, M. and **Dixon, B.** 2003. Effects of varying resolution in the assessment of SWAT modeling. Florida Society of Geographers, Boca Raton, FL, February 6th – 8th
  58. **Dixon, B.** 2002. Can ground water sampling strategy be improved by incorporating fuzzy

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<sup>1</sup> Student Research Assistant

- logic in a GIS? Presentation. 25th Annual Applied Geography Conference. Binghamton, NY, October
59. **Dixon, B** and H. D. Scott. 2002. Determining appropriate size of the training data sets for Neuro-fuzzy models to predict ground water vulnerability in Northwest Arkansas. Presentation. Southern Branch, American Society of Soil and Water, Annual Meeting, Orlando, FL, February
  60. **Dixon, B.**, H. D. Scott and J. V. Brahana. 2002. Application of Neuro-Fuzzy techniques to predict ground water vulnerability. Presentation. Third International Conference on computer Simulation in Risk Analysis and Hazard Mitigation, Sintra, Portugal, June.
  61. **Dixon, B.**, H. D. Scott, J. V. Brahana, A. Mauromoustakos, and J. C. Dixon. 2001. Delineation of ground water vulnerability to agricultural contaminants using Neuro-fuzzy techniques. Presentation. Annual Meeting of Soil Science Society of America, Charlotte, NC, October.
  62. **Dixon, B.**, T. H. Udouj, and H. D. Scott. 2000. Examination of Spatial variability of parameters affecting contamination of ground water in Arkansas Delta. Presentation. Southern Regional Geological Society of America Meeting . Fayetteville, AR. April.
  63. **Dixon, B.**, T. H. Udouj, H. D. Scott, A. Mauromoustakos, T. Kresse and F. Limp. 1999. Analyses of the Spatial Variability of Bentazon Contamination of Wells in the Arkansas Delta Presentation. Arkansas GIS Users Forum. Eureka Springs, AR. September.
  64. **Dixon, B.**, H. D. Scott, T. Kresse, K. F. Steele, and W.F. Limp. 1999. Comparison of the Spatial Variability of Pesticide Contamination of Wells in the Arkansas Delta. Presentation. Annual Meeting Program of Soil Science Society of America. Salt Lake City, Utah October-November.
  65. **Dixon, B**, H. D. Scott, H. S. Lin, K. F. Steel and J. C. Dixon. 1998. Comparison of modified DRASTIC and fuzzy-logic predictive models in ground water contamination. Presentation. Annual Meeting Program of Soil Science Society of America, Baltimore. October.
  66. Udouj, T.H., **Dixon, B.** and H. D. Scott. 1998. Application of GIS and RS techniques to the analysis of Spatial and Temporal Changes in the Buffalo River Watershed. Presentation. American Society of Soil and Water, Southern Regional Meeting, Little Rock, AR. February.
  67. J. V. Skinner Jr., **B. Mitra** and H. D. Scott. 1997. Use of Fuzzy Logic to Predict Soil Productivity and Crop Yield. Presentation. Annual Meeting Program of Soil Science Society of America. Anaheim CA. October.
  68. **Mitra, B.** and T. H. Udouj. 1997. Applications of GIS in natural resource management: primary and secondary attributes of soils, Lonoke and Prairie Counties. Presentation. Arkansas GIS Users Forum. Hot Springs, AR. September.

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### Awards, Honors

- ✓ Nominated for USF SP Chancellor's Award for excellence in research and creative Scholarships for 2007

- ✓ Recognized as USF's "Rising Research Star" (2005).
- ✓ USF International Travel Awards (2002) to attend Third International Conference on computer Simulation in Risk Analysis and Hazard Mitigation, Sintra, Portugal, June
- ✓ Awarded numerous travel awards by the University of Arkansas, Fayetteville (1995 – 2001) to attend conferences.

Service Responsibility:

***Professional Service:***

1. Conference Organizations

- i) Panelist for the Power Panel: Education for the Geospatial Infrastructure Industry. GITA (Geospatial Infrastructure Solutions Conference), Tampa, April 19-22 (2009)
- ii) Co-chair for the break-out session for the Terrestrial and Coastal Carbon Fluxes in the Gulf of Mexico Workshop (May 6-8, 2008), St. Petersburg, FL
- iii) Active member of American Society of Photogrammetry and Remote Sensing (ASPRS) National Conference Planning committee. Coordinating Student Volunteer for the ASPRS National Meeting in Tampa, May 2007
- iv) Organized Panel for GIS and Environment for the Interdisciplinary Environmental Research, 2006
- v) Organized and hosted GIS day 2001 – 2007
- vi) Editorial Board Member for the Open Civil Engineering Journal 2007 - 2009
- vii) Executive Member for *Florida Society of Geographers* (3-year term). 2005-2007.
- viii) Session Panelist: Making your own way: Grant proposal writing for graduate school and beyond, *American Association of Geographers*, April 2005, Denver.
- ix) Organized student chapter for American Society of Photogrammetry and Remote Sensing (ASPRS) 2004- present
- x) Served as a Session Chair for 'the Sampling and Design Session', Applied Geography Conference. October 22 – 26th, 2002, Binghamton, NY
- xi) Session Chair: 'The Sampling and Design Session', Applied Geography Conference. October, 2002, Binghamton, NY.
- xii) Helped organizing regional specialty conference: Measuring the earth - Digital Elevation Technologies and Applications – organized by ASPRS and MAPPS and Co-sponsored by NASA and USGS. October 29 – November 2, 2001, St. Petersburg, FL.

2. Reviewed manuscript for

- i. Journal of Spatial Hydrology
- ii. Journal of Hydrology
- iii. Journal of Environmental Management

- iv. International Journal of Remote Sensing
- v. Science of the total environment
- vi. Computers and Geosciences
- vii. American Society of Photogrammetry and Remote Sensing (ASPRS)
- viii. Journal of American Water Resources Association (AWRA)
- ix. Hydrological Science Journal
- x. Hydrogeology Journal
- xi. Professional Geographer
- xii. International Journal of GIS
- xiii. Perspective on Agriculture, Nutrition and Natural Resources

**3. International Professional Advising/Project Reviewer**

- i. Advisor to the Government of New Zealand
- ii. German-Israeli Program in Water Technology

***College/ Departmental Service:***

**1. Departmental Committees:**

- i) Member of Executive Committee for ESP&G (2004 - 2005)
- ii) Member of the Steering Committee for ESPG POD (2002 – 2003)
- iii) Member of Budget Committee for ESPG POD (2003)
- iv) Member of the Colloquium Committee for ESP&G (2003 – 2005)
- v) On-line Curriculum and Distance Learning Committee ESPG (2006 – 2007)
- vi) Ad-Hoc election committee member for Chair and Co-Chair (2008)
- vii) Member of the ESPG Graduate committee (2008 – 2009)
- viii) Chair of the ESPG Budget Committee (2008 – 2009)

**2. Search Committees:**

- i) Mathematics (Chair Dr. G. Yanev, 2003)
- ii) Criminology I (Chair Dr. W. Ruffle, 2003)
- iii) Criminology II (Chair Dr. W. Ruffle, 2003)
- iv) Environmental Chemist (Chair Dr. E. S. Van Vleet, 2003)
- v) Wetlands Ecologist (Chair Dr. E. S. Van Vleet, 2003)
- vi) Wetlands Hydrologist (Chair Dr. E. S. Van Vleet, 2003)
- vii) Senior Environmental Scientist (Chair Dr. E. S. Van Vleet, 2003 - 2004)
- viii) Office Assistant (ESP&G, 2003)
- ix) Lab Manager (ESP&G, 2003 - 2004)
- x) Mathematics (Chair Dr. M. Gaulter, 2005)
- xi) Mathematics (Chair Dr. D. Cassil, 2005)
- xii) Statistics (Chair Dr. D. Cassil, 2006)

- xiii) Geography (Chair Dr. R. Johns, 2006)
- xiv) Physics (Chair, Dr. B. Dixon, 2008)

***University Service:***

- i) Member of Faculty Roles and Reward Committee, University of South Florida St. Petersburg. 2002 - 2003
- ii) Member of Research and Library Council, University of South Florida St. Petersburg. 2002 – 2003
- iii) Served as a reviewer to evaluate proposal for USF (Tampa) Internal Awards (USF Faculty Senate Research Council), 2003.
- iv) Member of search Committee for Assistant Vice President for Research and Community Partnership, University of South Florida St. Petersburg. (Chair Dr. M. Wilson), 2003.
- v) Served as a reviewer to evaluate proposal for USF (Tampa) Internal Awards (USF Faculty Senate Research Council), 2005.
- vi) Served as a reviewer to evaluate proposal for USF (Tampa) Internal Awards (USF Faculty Senate Research Council), 2006
- vii) Member of the Executive Council for Center for Science & Policy Applications for the Coastal Environment (C-SPACE). 2006 - present.
- viii) Member for the University of South Florida St. Petersburg Faculty Research Council. 2007 – 2008
- ix) Member of the USF SP Tenure Promotion Committee (University Level) 2008 – 2009.
- x) Co- Chair of the USF SP Strategic Planning Sub-Committee for Environmental stewardship. 2008.
- xi) Member of the ‘Space Request Review Team’ (University level) 2009.

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**Community Service**

1. Worked closely with USF Family Village through USF’s Collaborative for Children Families and Communities program to conduct research titled: to Pre-schoolers’ vocabulary acquisition and understanding of scientific concepts from participation in repeated read aloud events involving informational picture books. This project was funded by Juvenile Welfare Board of Pinellas County. 2002.
2. Participated Community Water Leadership Program (a collaborative effort between USF’s Institute of Government and South West Florida Water Management District (SWFWMD). 2003.
3. Working closely with Dr. Meg Lowmen (New College) to help the Center for Ecological Assessment (CEA) in Sarasota County organize a workshop for resource managers on remote sensing application to environmental science. 2005.

4. Hosted GIS Day from 2001 – present.
5. Hosted GIS workshop to train professionals in the community
6. Member of the Pinellas County Complete Count Committee for 2010 Census – 2009 – 2010