St. Petersburg, FL 33701

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Education
Ph.D. in Environmental Dynamics, an interdisciplinary program between Geography and Geology
(Focus: GIS, remote sensing, fuzzy logic, and neural networks in ground water contamination
modeling), University of Arkansas, Fayetteville (2001) Drs. H D Scott and J. C. Dixon[1] (co-major
Professors). **Dissertation Title**: *Application of Neuro-fuzzy techniques to predict ground water
vulnerability in northwest Arkansas*.
M.A. Geography (Focus: GIS, remote sensing and fuzzy logic in soil erosion modeling), University
of Arkansas, Fayetteville (1995). Major Professor J.C. Dixon [1] **Thesis Title**: *Identification of Soil
Erosion Potential using Fuzzy Logic.*
M.A. Geography (Focus: remote sensing and terrain evaluation in environmental geomorphology),
Visva Bharati University, India (1991) Major Professor V. C. Jha. **Thesis Title**: *Suri and its
Environs: an analysis of environmental geology.*

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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, College of Agriculture, University of Arkansas at Fayetteville.

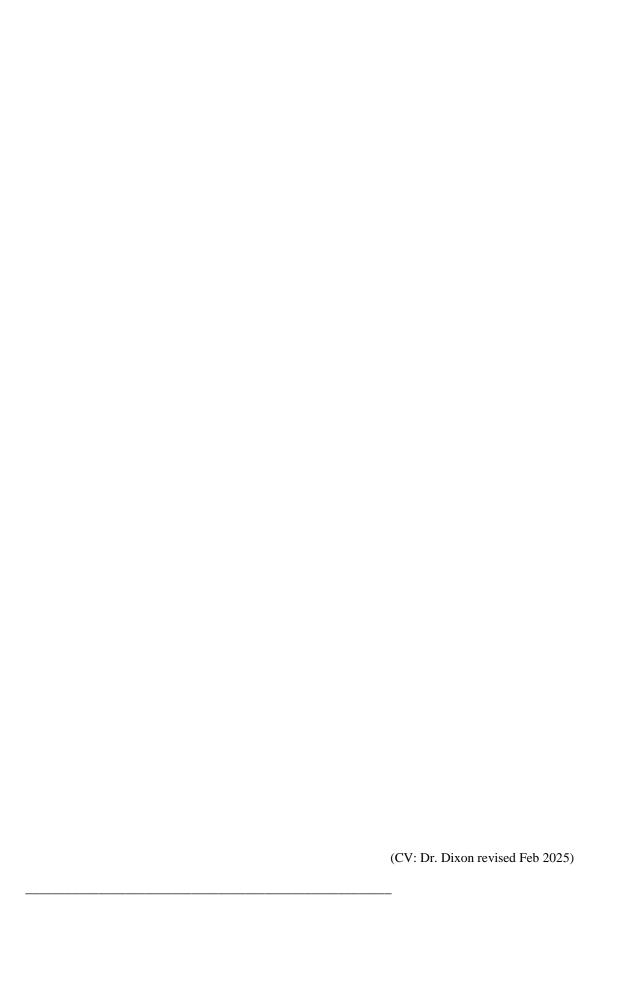## Responsibility May 1995 – July 2001
Research Responsibility

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v. Mr. Alec Colarusso   Major Professor (MS. School of Geosciences). Title: *Analysis Of OSTDS Failure Potential due to Sea-Level Rise and OtherInundation Factors: An Integrated Geo-Spatial Analysis*. Graduated Summer 2023

vi. Mr. Leo Meirose -- <u>Major Professor</u> (MS. Department of Environmental Science, Policy and Geography). Title: *Effects of DEM Resolution on Slope Characterization and Subsequent Stream Delineation and Flow: A comprehensive Analyses. Graduated Summer 2019*

vii. Mr. Chris McHan - - <u>Major Professor</u> (MS. Department of Environmental Science, Policy and Geography). Title: *Elusive or Illusive Truth? The Role of Sensors and Sampling Strategies in Data Collection and its Implication for Scientific Knowledge and the Pursuit of Truth. Graduated Spring 2018.*

viii. Mr. Kyle Flanagan - <u>Major Professor</u> (MS. Department of Environmental Science, Policy and Geography). Title: *Integration of Terrestrial Source, Landuse, and Watershed Hydrogeology in Coastal MPA Management. Graduated Summer 2017.*

ix. Ms. Kimberly Lyons- <u>Major Professor</u> (MS. Department of Environmental Science, Policy and Geography). Title: *Sediment Dynamics and Climate Change: An Integrated Model Approach to Evaluating the Effects of Projected Precipitation Changes on Sediment Production, Transport and Deposition at the Catchment Scale , Graduated Fall 2016*

x. Ms. Elizabeth Merton   <u>Co-Major Professor</u> (MS. Department of Environmental Science, Policy and Geography). *A Comparison of Natural vs. Mitigated Wetlands: A Spatially Integrated Decision Support Approach. Graduated Fall 2016*

xi. *Ms. Jessica Gruber-* <u>Co-Major Professor</u> (MS. Department of Environmental Science, Policy and Geography). Title: *Analyzing and Mapping of factors that influence success and failure of conservation practice*: a multi-scale study. *Graduated Summer 2016*

xii. Mr. Richard Knudson   <u>Co-Major Professor</u> (College of Marine Science, USF). A Study on the Integration of Multivariate MetOcean, *Ocean Circulation, and Trajectory Modeling Data with Static GIS for Better Marine Resources Management and Protection During Oil Spills. Graduated Fall 2015*

xiii. Mr. Steven Douglas - <u>Major Professor</u> (MS. Department of Environmental Science, Policy and Geography). Title: *Modeling of Surface and Groundwater Contamination and Human Health Risk: An Integrated Geospatial Approach. Graduated Fall 2015*

xiv. Ms. Rene Duffy   <u>Co-Major Professor</u> (MS. Department of Environmental Science, Policy and Geography) Title: *A multi-scale approach for characterizing habitat selection of tidal creek fish in Charlotte Harbor, Florida. Graduated Summer 2012*

xv. Mr. Rene Baumstrak   <u>Major Professor</u> (MS. 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. Graduated Summer 2011*

xvi. Mr. Fredrik Bradley - <u>Major Professor</u> (MS. Department of Environmental Science,

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2004

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4. Dalkilic, H.Y., Kumar, D., Samui, P. **B. Dixon** et al. 2023. Application of deep learning approaches to predict monthly stream flows. Environ Monit Assess 195, 705n. https://doi.org/10.1007/s10661-0234 t 12 Tfo4/

(CV: Dr. Dixon revised Feb 2025)

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Evapotranspiration: Using Real and Modeled Meteorological Data**.** Vadose Zone Journal: <u>Special issue paper</u>. *Multiscale Mapping: Physical Concepts and Mathematical Techniques***.** Soil Science Society of America**.** 7(2):570 580

29. Earls, J[1]. and **Dixon, B.** 2008. Using the Fractal Dimension to Differentiate Between Natural & Artificial Wetlands. Interdisciplinary Environmental Review (IER), *Vol. X, (no. 1): 33-44.*

30. **B. Dixon** and Earls, J[1]. 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.

31. **Dixon**, B. Li D., Earls, J[1] and Xinhua Liu. 2007. The Study on Groundwater Vulnerability Assessment Method. Environmental Protection Science. 33 (5):50 - 55.

32. **Dixon, B**. 2005. Ground water vulnerability mapping: a GIS and fuzzy rule based integrated tool. Journal of Applied Geography. 25: 327 347.

33. **Dixon, B**. 2005. Applicability of Neuro-fuzzy techniques in predicting ground water vulnerability: A sensitivity analysis. Journal of Hydrology. 309: 17 38

34. **Dixon, B**. 2004. Prediction of Ground Water Vulnerability using an integrated GIS-based neuro-fuzzy techniques. Journal of Spatial Hydrology. 4(2):1 38

35. **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.

36. **Mitra, B[31]**., H. D. Scott, J.C. Dixon and J.M. McKimmey. 1998. Application of fuzzy logic to the prediction of soils erosion in a large watershed. Geoderma. 86:183 - 209.

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Edited Volume(s)/ Peer Reviewed Conference Proceedings Papers

1. Colarusso, A and **Dixon B**. 2025. An Assessment of Potential Environmental Impacts of Climate Change and Sea Level Rise on Decentralized Waste Water Treatment Infrastructures: A Broward County Case Study, FL, USA In: *Climate Change Effects on Infrastructure* Eds: GuhaRay A, Samui P., Asteris, P.G. Armaghani, D. J and Kumar S. Elsevier (in press)

2. **B. Dixon** and R. Johns. 2019. Vision for a Holistic Smart City (HSC)- Integrating Resiliency Framework via Crowdsourced Community Resiliency Information System (CRIS). ACM ISBN 978-1-4503-6954-1/19/11 https://doi.org/10.1145/3356395.3365541

3. King, C, and **B. Dixon**. 2011. Integrating Virulo model and virus parameters in mapping ground water contamination risk to pathogens. Vol. 34, pages 267 - 275. In (**<u>Jay. Lee, Editor</u>**)**.** Papers of The Applied Geography Conferences. Redlands, CA.

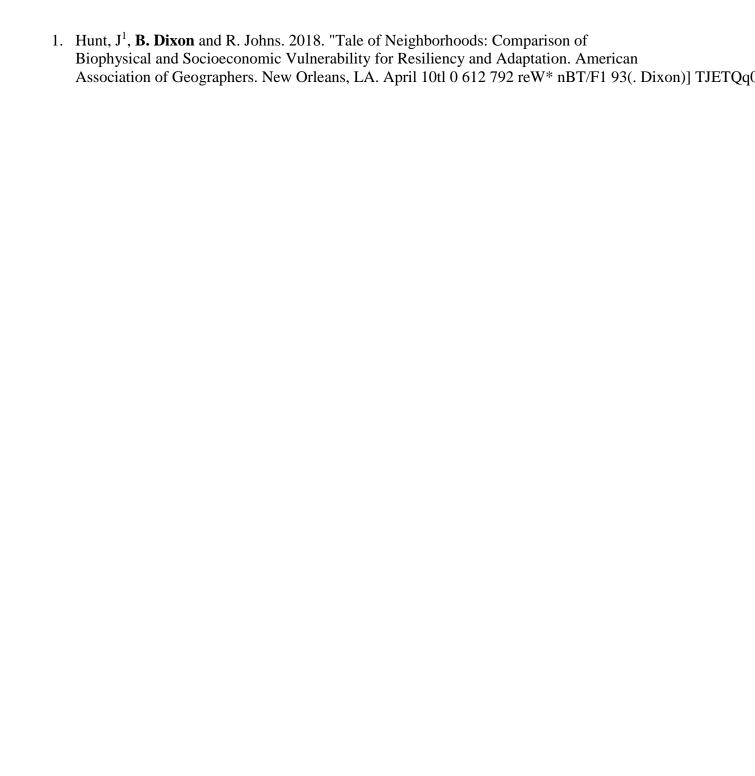4. Williams, N.B, **B. Dixon**

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31 My former last name

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to sediment delivery: A conceptual framework. **In** (*Garcia, Pedro M. Editor)*. International Specialty Conference and 8th Caribbean Islands Water Resources Congress on Tropical Hydrology and Sustainable Water Resources in a Changing Climate Proceedings. American Water Resources Association Technical Publication, Middleburg, Virginia, TPS-10-2, CD-ROM. ISBN 1-882132-83-1

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 is a Changing Climate. Paper in AWRA conference CD. May 4   6th Anchorage, Alaska.
http://www.awra.org/tools/members/Proceedings/0905conference/oral.html

6. **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 23rd   25th.

7. Earls, J. **B. Dixon** and Fred Bradley[1]. 2008. Comparing SWAT overall drainage basin predictions with individual sub-basin predictions. Spring Specialty Conference GIS and Water Resources V. San Mateo, CA, Mar 17-19, 2008. *Paper on Conference CD AWRA*.

8. Earls, J 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.

9. Earls, J and **B. Dixon.** 2007. Spatial Interpolation of Rainfall Data Using ArcGIS: A Comparative Study. 27th Annual ESRI International User Conference. http://www10.giscafe.com/link/display_detail.php?link_id=22230. San Diego, June 18-22, 2007.

10. 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. 2007ISBN CD-ROM: 0-933957-35-1,Vancouver, British Columbia. September 29nm0ctob544. Passific)nd

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Resources. AWRA Summer Specialty Conference MT, June 26-28. ISBN: 1-882132-71-8.

14. Earls, J**.** 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.

15. **Dixon, B**. and Candade, N. 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*

    Water Resources Association, Middleburg, Virginia, TPS-04-1, CD-ROM.

16. Candade, 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.

17. **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.

18. **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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i. **B. Dixon**. 2024. Stakeholder Perspective of Local Societal Needs. 2024 USCRP Decadal Visioning Workshop. US Coastal Reaserch Program (USCRP) June 11th, 2024

ii. **B. Dixon**. 2024. CRIS-HAZARD: A Tool for Community Engagement and Crowdsourced Data Collection to Enhance Resilience in the Face of Flooding and Other Extreme Events. NSF S&CC Annual PI Meeting, Feb 28-29, Nashville, TN. Panelist: **Citizen science session**

iii. **B. Dixon**. 2019. Innovative and integrative Modelling of Land - Water Interfaces Under

(NERRS). NOAA's Estuarine Reserves Division and the National Estuarine Research Reserve Association (NERRA). Shepherdstown, WV. Nov 27   30.

   xv. **Dixon, B**. 2012. Statistical Regional modeling of nitrate in groundwater. Impacts of Excess Nitrogen in the Environment on Human Health: RCN Human Health Conference. National Institutes of Health (NIH), North Bethesda. MD. Nov 14   15.

 xvi. **Dixon, B**. 2012. Mapping the Tribes and the Terrain: Geospatial Analysis/Human Geography Consideration of Yemeni Tribes. Tribal Dynamics III Yemen Workshop: ncy Task force.

and the Center for the Study of International Languages and Cultures (CSILC).

Students in Pinellas County, FL. Bay to Bay 5th Annual Learning Symposium, St. Petersburg, FL. Feb 14th

25. Spetka, M., & **Dixon, B.** 2020. Using habitat characterization methods in GIS to determine impacts of extreme weather events on estuarine fish habitat. Florida Society of Geographers, Gainesville, FL. Feb 7-9 (Best Graduate Presentation Award).

26. **B. Dixon** and R. Johns. 2019. Vision for a Holistic Smart City (HSC)- Integrating Resiliency Framework via Crowdsourced Community Resiliency Information System (CRIS). 2nd International workshop on Advances in Resilient and Intelligent Cities (ARIC 2019), ACM SIGSPATIAL

27. **B. Dixon**, R. Johns and A. Fernandez. 2019. An Empirical Assessment of efficacy of crowd-sourced data and participatory Geoweb in enhancing participation in governance for

(CV: Dr. Dixon revised Feb 2025)

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1. Hunt, J[1], **B. Dixon** and R. Johns. 2018. "Tale of Neighborhoods: Comparison of Biophysical and Socioeconomic Vulnerability for Resiliency and Adaptation. American Association of Geographers. New Orleans, LA. April 10tl 0 612 792 reW* nBT/F1 93(. Dixon)] TJETQq(

23   (CV: Dr. Dixon revised Feb 2025)

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48. Lyons K.[1] and **B. Dixon**. 2016. Evaluating the Effects of Precipitation Extremes on Watershed Hydrology Under Current and Projected Future Climate Conditions Using SWAT. American Association of Geographers. San Francisco, CA. March 29 April 2.

49. Flanagan, K. and **B. Dixon**. 2016. Rethiking MPA: Integration of Watershed Urbanization. American Association of Geographers. San Francisco, CA. March 29 April 2.

50. Cope, S and **B. Dixon**. 2016. Integration of GIS and logistic regression to develop a habitat suitability model for predicting seagrass distribution. American Association of Geographers. San Francisco, CA. March 29 April 2.

51. Rivenbark T, **B. Dixon** and C. Stallings. 2016. Integrated GIS and Remotely Sensed Method: A comparison of cost and accuracy for sea grass mapping. American Association of Geographers. San Francisco, CA. March 29 April 2. Poster

52. Douglas S[1]. and **B. Dixon**. 2015. Mapping of Groundwater Vulnerability Using Spatially Integrated Pesticide Attenuation Factor. American Association of Geographers. Chicago, IL. April 21 25.

53. Merton E[1] and **B. Dixon**. 2015. Analyzing the edge-effect: applying fractal analysis to mitigated wetlands in Tampa Bay, Florida. American Association of Geographers. Chicago, IL. April 21 25.

54. Lyons K.[1] and **B. Dixon.** 2015. Modifying the Revised Universal Soil Loss Equation (RUSLE) R and LS factors to identify soil er
American Association of Geographers. Chicago, IL. April 21 25.

55. Terrano[1]J. D. Stewart, **B Dixon**. 2015. Determining Power Plant and Population Vulnerability to Storm Surges in Pinellas and Pasco County: A GIS Based Approach. 51st Annual FSG Meeting, Jacksonville, FL, Feb 6-8 Poster

56. Merton E[1] and **B. Dixon.** 2014**.** Location of mitigated and natural wetlands: an environmental variable analysis. SouthEastern Division of American Association of Geographers (SEEDAG). Athens, GA. Nov 23 25.

57. Lyons K[1] and **B. Dixon.**
on modeling soil erosion risk potential. SouthEastern Division of American Association of Geographers (SEEDAG). Athens, GA. Nov 23 25.

58. Lyons, K[1] and **B. Dixon.** 2014. Evaluating Soil Erosion Potential in Response to Landuse Changes within the Fajardo River Basin, Puerto Rico. American Association of Geographers. Tampa, Fl. April 8 12. Poster

(CV: Dr. Dixon revised Feb 2025)

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62. Johns, R., **Dixon B.** 2013. Evaluating Food Deserts in St. Petersburg, Florida. 48th Annual FSG Meeting, Gainesville. Talahasee, FL, Feb 8-10.

Geographers, Annual Meeting, New Orleans, LA, March.
123.   **Dixon, B**. 2003. A comparison of fuzzy logic and n Eampar2

30   (CV: Dr. Dixon revised Feb 2025)

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135. 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. American Society of Soil and Water, Southern Regional Meeting, Little Rock, AR. February.

136. J. V. Skinner Jr., **B. Mitra** and H. D. Scott. 1997. Use of Fuzzy Logic to Predict Soil Productivity and Crop Yield. Annual Meeting Program of Soil Science Society of America. Anahiem CA. October.

137. **Mitra, B**. and T. H. Udouj. 1997. Applications of GIS in natural resource management: primary and secondary attributes of soils, Lonoke and Prairie Counties. Arkansas GIS Users Forum. Hot Springs, AR. September.

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Awards, Honors

Fellowship at Community-Based Participatory Research (CBPR) Partnership Academy, Urban Research Center, University of Michigan, 2022

Recognized in the Stanford/Elsevier Citation list for top 2% researchers in single-year database for 2021 and 2023. For 2021 [August 2021 data-update for "Updated science-wide author databases of standardized citation indicators" - Elsevier BV (digitalcommonsdata.com) and for 2023 (https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/6)](https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/6).

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i) Started an Initiative called ICAR (Coastal Adaptation and Resilience) to address challenges and solutions for coastal cities in the context of climate change and sea-level rise. http://www.usfsp.edu/icar/

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Symbiotic Design College of Interhuman Symbiotic Studies Kanto-Gakuin University, **Japan**, 2021-2022

A MS student (<u>I served on his committee as co-Chair</u>), Graduate School of Natural and Applied Science-Remote Sensing and GIS,

Technical University, Esenler Istanbul, **Turkey**. (Mustafa Usner) Summer 2013

A Visiting a Senior Research Scholar from Kuwait Institute of Scientific Research (KISR), **Kuwait**. Summer 2011 (Waleed Roy)

A Fullbright exchange scholar from University of Calabar, Calabar, **Nigeria** 2009 2010 (Francis Nowsu)

A visiting scholar from China (working at EPA equivalent of China) spent 1 year in my lab learning about the models and she is being sponsored by the Chinese Government (DaQui Le) **China** 2007 - 2009

A visiting scholar from Argentina (Director of their Environmental Protection Agency) Summer of 2008 (Paula Blanco), **Argentina**

4. International Capacity Building by Invitation
National Mapping Organization (NATMO), **India,** 2013
Vellore Institute of Technology (VIT), **India**, 2012
University of Calabar, **Nigeria,** 2011
Ministry of Water resources, **Ethiopia,** 2005

5. International Grad Student and Post Doc Supervision by Invitation
Ms.Wided Batita Department of Environmental Management, Mediterranean Agronomic Institute of Chania(**MAICh**), **Greece**
Mr. Elham Fijani, Department of Geology, University of Tabriz, East Azarbaijan, **Iran**
Mr,Vasant A. K. Department of Geosciences, *Anna Malai University, India*
Dr. Pijush Samui VIT, Center for Disaster Mitigation and Management. India

6. National and International Professional Advising/Project Reviewer
    i.   National Research, Development and Innovation Office (NKFIH), **Hungar**y, 2017
    ii.

       Modeling of Environmental and Water Resources Systems (ICMEWRS 2017) March 24 26, 2017. **India** (Sponsored by TEQIP-II, World Bank)

I was invited by these organizations to help them build centers for GIS data gathering and information dissemination and training. Additionally, I was asked to develop projects to assess and then enhance GIS data development and modeling capacities in these countries.

These are the folks I have worked with remotely via skype and email, they used various fuzzy, neuro-fuzzy and SVM and RVM methods I have developed in their graduate and post doc work, I served on their committee (as co-chair or committee members) but they never visited the my lab here at USFSP.

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2. <u>Search Committees (Dept and College Level):</u>

    i)   Remote Sensing (Chair, Yi, 2025)
    ii)   Natural Hazarad (Chair, Meindl, 2024)
    iii)   Environmental Policy (Chairs. Alegria and Johns, 2012)
    iv)   Physics (Chair, Dr. B. Dixon, 2008)
    v)   Statistics (Chair Dr. D. Cassil, 2006)
    vi)   Geography (Chair Dr. R. Johns, 2006)
    vii)   Lab Manager (ESP&G, 2003 - 2004)
    viii)   Mathematics (Chair Dr. M. Gaulter, 2005)
    ix)   Mathematics (Chair Dr. D. Cassil, 2005)
    x)   Mathematics (Chair Dr. G. Yanev, 2003)
    xi)   Criminology I (Chair Dr. W. Ruffle, 2003)
    xii)   Criminology II (Chair Dr. W. Ruffle, 2003)
    xiii)   Environmental Chemist (Chair Dr. E. S. Van Vleet, 2003)
    xiv)   Wetlands Ecologist (Chair Dr. E. S. Van Vleet, 2003)
    xv)   Wetlands Hydrologist (Chair Dr. E. S. Van Vleet, 2003)
    xvi)   Senior Environmental Scientist (Chair Dr. E. S. Van Vleet, 2003 - 2004)
    xvii)   Office Assistant (ESP&G, 2003)

College-Level Service:
    i)   Member of the CAS Faculty Council (2018   2020)
    ii)   Member of Annual Review Committee CAS (2017- 2018)
    iii)   Member of the CAS Academic Programs Committee (APC) 2010   2011 and 2013-2015.
    iv)   Member of the CAS Faculty Council (2010   2012)
    v)   Member of the CAS Tenure Promotion (T & P) Committee (College Level) 2010 2012

USFSP University-Level Service:

    i)   Founding member of the Student Green Energy Fund (SGEF) USFSP (2011-2014)
    ii)   Member of the Enrolment Committee (University level senate committee for USFSP) 2010   2011
    iii)   Member of the Executive Council for Center for Science & Policy Applications for the Coastal Environment (C-SPACE). 2005 - 2011
    iv)   Member of the USF SP Tenure Promotion Committee (University Level) 2008   2010
    v)
    vi)   Co- Chair of the USF SP Strategic Planning Sub-Committee for Environmental
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(CV: Dr. Dixon revised Feb 2025)

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