Geo-Spatial Analytics Lab

MISSION

Conduct research to advance environmental modeling by integrating GIS, RS, fuzzy logic, NN and NF. Enhancement of remotely sensed data incorporates classification techniques using novel approaches and comparing them with traditional methods.

Development of spatial models is done through integration of GIS, fuzzy logic, neural networks and neuro-fuzzy techniques for better visualization and sensitivity analysis over space and time.

Applied environmental models include soil erosion, surface and ground water quality, ground-water vulnerability, watershed risk assessment and management (soils, landuse and water quality relationship), contaminant transport processes, land use and ground-water recharge, rainfall-runoff simulation, and land use planning (urbanization, soils and water quality relationship).

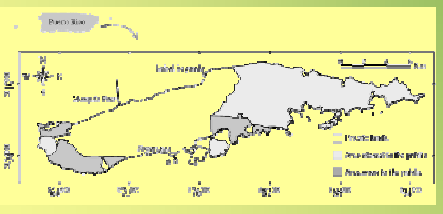
Photos clock-wise from left:

1. Dr. Barnali Dixon, Assistant Professor in Geography from University of South Florida, St. Petersburg. Faculty Advisor of the Geo-Spatial Analytics Lab.
2. Students from a local high school at GIS Day 2005.

A SNAPHOT OF PROJECTS & RESEARCHERS

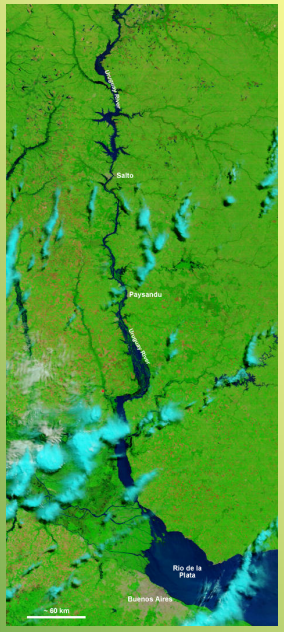
Luz Raquel Hernández-Cruz, is a doctoral student from USF College of Marine Sciences. She holds a MSc in Marine Biology from the Oceanographic Center at Nova Southeastern University and a BSc in Coastal Marine Biology from the University of Puerto Rico at Humacao. She is currently incorporating the use of remote sensing and GIS for soil erosion and sedimentation in Vieques Island, Puerto Rico.

Raquel is a FGLSAMP and NSF Bridge to the Doctorate Fellow.

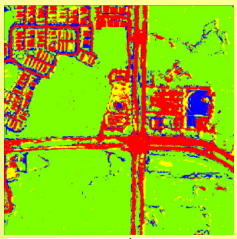


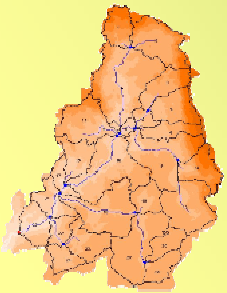
Vieques Island, Puerto Rico

Robert Stetson is a graduate student in Geography and has worked correlating groundwater contamination analysis to landuse, census data and DRASTIC layers. He is currently working on the environmental and social impact of paper mills along the Uruguay River between Argentina and Uruguay. Robert also has a Graduate Certificate in GIS.



Julie Earls, has an M.S.P.H. from USF and is currently working on using the Soil Water Assessment Tool (SWAT) to model flow and water quality in central Florida drainage basins. Julie is also working on using remote sensing to delineate impervious surfaces from non-impervious surfaces. Another project is for U.S.G.S., determining water budget and modeling for the Charlie Creek area using OneRain (NEXRAD-derived) as precipitation input to the SWAT model.





imp-dark	Infrared Band Maximum Likelihood Classification
imp-dark2	
imp-lt	
imp-lt2	
imp-lt3	
imp-med	
veg	

CONTACT US

Geo-Spatial Analytics Lab
140 7th Avenue S. - PNM 103
St. Petersburg, FL 33701
Phone: (727) 873-4025
E-mail: bdixon@stpt.usf.edu
Webpage: www.stpt.usf.edu/bdixon