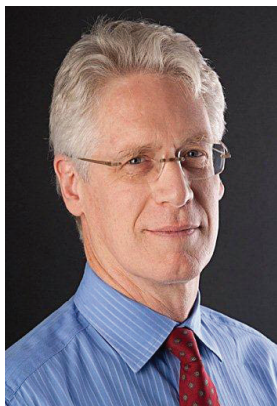


INSIGHTS

INTO SUSTAINABLE ENGINEERING





Dear Alumni and Friends,

The Engineering School of Sustainable Infrastructure and Environment continues to make excellent progress as it hosts nationally prominent programs in Civil Engineering, Environmental Engineering, and Coastal and Oceanographic Engineering. For example, our undergraduate programs in both Civil and Environmental Engineering continue to produce outstanding graduates. Since the onset

of the economic downturn, combined enrollment has decreased from a peak of 962 students from 2009 to a more reasonable number of 626. This enrollment decrease might be viewed by some as an issue of concern; however, our faculty and ESSIE's external advisory board view this as an opportunity to work closer with undergraduates, given the reduced student-to-faculty ratio of 15, and even demand a higher standard of performance from the same students given smaller classes. Still, we can boast ESSIE's combined undergraduate enrollment as the 7th largest among combined civil and environmental programs in the United States. And this size has not diminished our ability to produce graduates of the highest quality and diversity. This Fall's freshman class was 44% women or slightly lower than last year's class, when women represented of 50% of all freshmen.

We demand much from our undergraduate students, and in turn we offer them opportunities to excel and achieve distinction. For example, the ASCE student chapter performed exceptionally well at this year's Southeast Regional Competition. UF's chapter placed 1st overall, 1st in Concrete Canoe, 1st in Steel Bridge Construction, 1st Geotechnical, 2nd in Mortar Cube, and 3rd in Professional Paper. And again this past year, half of the senior class participated in either teaching or research. Again, this fall 15 of our best undergraduates assisted faculty with teaching, while another 43 pursued undergraduate research with faculty mentors. Our goal is that 100% of our students acquire engineering experience and leadership skills from participating in either an external internship, active research, or assisting faculty with classroom instruction. Our desire is that most of these students continue onward in their choice of ESSIE's three Master's programs and perhaps a few are inspired to consider doctorates and ultimately pursue academic positions.

ESSIE's graduate programs in civil, environmental, and coastal and oceanographic engineering continue to achieve national distinction. According to the most recent data gathered by the American Society for Engineering Education, ESSIE's combined

doctoral and master's enrollment is the fifth largest in the United States, after the University of Illinois, Texas A&M, Stanford University, and the University of Washington; whereas, our doctoral program is the 2nd most productive in terms of doctoral graduates per faculty at public institutions following UCLA. And as expected and desired the quality of our graduates is outstanding as evidenced by their many achievements. One external confirmation of quality is that five of our most recent cohort of doctorates accepted faculty positions at prestigious Universities and Colleges in the United States and Australia.

ESSIE's faculty members are also doing exceptionally well. Dr. Lily Elefteriadou received ASCE's distinguish James Laurie Prize. Air & Waste Management Association selected Dr. CY Wu to receive the Association's 2015 Lyman A. Ripperton Environmental Educator Award. Dr. Tom Sputo was promoted to Master Lecturer and elected Fellow of ASCE. Dr. John Sansalone was awarded the Rudolf Hering Medal, and the Naval Research Laboratory honored Dr. Don Slinn with the 2013 Alan Berman Research Publication Award. And then there was Dr. Treavor Boyer who was promoted to the rank of Associate Professor with tenure. ASEE Southeastern Section also recognized Dr Boyer with the 2014 New Faculty Research Award.

The ability to attract and retain exceptional faculty is also an important indicator of success. Since 2011 we have hired six faculty members two in Civil Engineering, one in Coastal and Oceanographic Engineering, and three in Environmental Engineering Sciences. We continue to search for three new faculty members to fill positions in Materials, Structures, and Environmental Engineering Sciences. The last search being part of a larger preeminence hiring plan led by the College of Engineering and involving more than 30 new faculty hires College-wide.

Yes, it is great to be a gator and even greater to be a graduate from the Civil Engineering, Environmental Engineering, or Coastal and Oceanographic Engineering programs in ESSIE. If you have a story to tell, feel free to contact me at 352-392-9537, Ext. 1401 or email me at kirk.hatfield@essie.ufl.edu. You may also contact Ms. Frann Murphree Richards, our Director of Development, at 352-392-9537, Ext. 1540 or email her at fmrichards@ufl.edu.

Kindest regards,

Kirk Hatfield
School Director and Professor

.....
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College of Engineering
Dr. Cammy Abernathy

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Cover photo by Dr. Mark Brown Systems Ecology Group

ALL IN THE NUMBERS

PhD Graduates	2013 Graduates
University of Texas--Austin (Cockrell)	40
Texas A&M University--College Station (Look)	39
University of Illinois--Urbana-Champaign	38
Purdue University--West Lafayette	38
University of California--Berkeley	37
Georgia Institute of Technology	37
University of Florida	37
Stanford University	26
University of Colorado--Boulder	26
Virginia Tech	24
University of California--Los Angeles (Samueli)	22
North Carolina State University	19
Massachusetts Institute of Technology	18
University at Buffalo--SUNY	17
Carnegie Mellon University	16
University of Maryland--College Park (Clark)	16
University of Michigan--Ann Arbor	13
University of Minnesota--Twin Cities	13
Princeton University	13
University of Washington	12

PhD Productivity	2013 Graduates/ faculty
University of California--Los Angeles (Samueli)	1.40
California Institute of Technology	1.17
Stanford University	0.96
University of Florida	0.88
University of California--Berkeley	0.86
Princeton University	0.81
University of Texas--Austin (Cockrell)	0.77
Carnegie Mellon University	0.76
Purdue University--West Lafayette	0.75
University of Illinois--Urbana-Champaign	0.73
Georgia Institute of Technology	0.70
Texas A&M University--College Station (Look)	0.70
University of Colorado--Boulder	0.68
North Carolina State University	0.66
University of Maryland--College Park (Clark)	0.59
Columbia University (Fu Foundation)	0.57
University at Buffalo--SUNY	0.57
University of Southern California (Viterbi)	0.52
Virginia Tech	0.52
Massachusetts Institute of Technology	0.51

Department Size	Faculty Number
Texas A&M University--College Station (Look)	56
Georgia Institute of Technology	53
University of Illinois--Urbana-Champaign	52
University of Texas--Austin (Cockrell)	52
Purdue University--West Lafayette	51
Virginia Tech	46
University of California--Berkeley	43
University of Florida	42
University of Colorado--Boulder	38
University of Wisconsin--Madison	38
Massachusetts Institute of Technology	35
University of Washington	35
University of Michigan--Ann Arbor	33
University of California--Davis	33
University of Minnesota--Twin Cities	32
University at Buffalo--SUNY	30
North Carolina State University	29
Stanford University	27
University of Maryland--College Park (Clark)	27
Pennsylvania State University--University Park	26

PhD Productivity	2013 Graduates/ faculty/ Years to Graduation
University of California--Los Angeles (Samueli)	0.48
University of Florida	0.26
Stanford University	0.21
Princeton University	0.20
California Institute of Technology	0.19
Texas A&M University--College Station (Look)	0.17
University of Colorado--Boulder	0.16
University at Buffalo--SUNY	0.16
University of California--Berkeley	0.16
Carnegie Mellon University	0.15
University of Texas--Austin (Cockrell)	0.15
Georgia Institute of Technology	0.14
Purdue University--West Lafayette	0.14
University of Illinois--Urbana-Champaign	0.12
Massachusetts Institute of Technology	0.10
North Carolina State University	0.10
Pennsylvania State University--University Park	0.09
University of Southern California (Viterbi)	0.09
Virginia Tech	0.09
University of Minnesota--Twin Cities	0.08

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Need to update your contact information? If so, contact: news@essie.ufl.edu



Above: Beginning stages of construction on the Belo Monte dam on the Xingu River in Brazil.

Focus on Ecology: Dr. Kaplan

A team of faculty led by Dr. David Kaplan was awarded the 2015 Water Institute Graduate Fellows (WIGF) Program. The WIGF program, which is awarded to an interdisciplinary group of UF faculty every two years, aims to promote interdisciplinary research in an emerging area of water science. The proposal, “Hydrologic transformation in the Amazon basin: reconciling economy, society, and the environment in the world’s largest watershed” brings together Amazon Dam Network (ADN) faculty from the biophysical and social sciences to address the complex and interactive set of impacts brought about by the construction and operation of dams and other hydraulic infrastructure in the Amazon.

The WIGF faculty team includes David Kaplan (ESSIE), Stephanie Bohlman, and Denis Valle (School of Forest Resources and Conservation), Kai Lorenzen (School of Natural Resources and Environment), and Cynthia Simmons and Bob Walker (Geography). The WIGF award, which supports six PhD students, was recently matched by the Brazilian Ministry of Education, which is funding an additional six PhD fellowships for Brazilian students to study with the group at UF. The faculty team is currently recruiting highly qualified students from around the world.

The collaborative proposal was motivated by ongoing efforts of the ADN, which was initiated in 2012 to improve interdisciplinary understanding of the links between energy production, environmental conservation and human well-being in the Amazon. The ADN is hosted in the Tropical Conservation and Development (TCD) Program in the Center for Latin American Studies, which accumulates more than 30 years of experience on training, research and capacity-building in the region. At UF, the program is coordinated by Dr. Simone Athayde, with strong support from TCD Director Dr. Bette Loiselle. In Brazil, the program is led by Drs. Carolina Doria and Elineide Marques (Universidades Federal de Rondônia and Tocantins, respectively). The ADN currently has 274 members from 61 organizations in 11 countries.

Most recently the ADN organized series of workshops on dam impacts in Brazil (see pictures) and hosted the international symposium: “Engineered Landscapes: Society, the Environment, and Shifting Values in Brazil and the U.S.” which can be viewed online at: <http://ufifas.adobeconnect.com/r5qp2os9bep/>.

Article and photos by Dr. David Kaplan

Watershed Ecology Lab Develops Nation's First Municipal Science Plan

Dr. Kaplan's Watershed Ecology Lab worked with the UF Levin College of Law's Conservation Clinic and the town of Yankeetown, FL to develop the first municipally adopted science plan in the US. The science plan was part of a larger Natural Resources Adaptation Action Plan designed by the lab to help rural coastal communities adapt to climate change. Yankeetown will bring the NRAAA up for integration in their comprehensive plan via a community-wide referendum in 2015. If adopted, the NRAAA will guide community development and land use policy in this vulnerable community.

New Research from the Center for Wetlands Published in WRR and Cited in EPA Report: Isolated Wetlands Critical to Regional Hydrology

Recent rulings by the U.S. Supreme Court have limited federal protection over geographically isolated wetlands (i.e., wetlands you can walk around without getting your feet wet), requiring documentation of a "significant nexus" to a navigable waterbody to ensure federal jurisdiction. We hypothesized that geographically isolated wetlands influence shallow aquifer dynamics that regulate flow in jurisdictionally protected surface water systems, suggesting they meet the significant nexus criteria. To explore this hypothesis, Dr. Kaplan worked with colleagues Matthew Cohen and Daniel McLaughlin (both graduates of the Systems Ecology program in EES) to simulate the hydrology of a low-relief Florida landscape with and without isolated wetlands. The results, published in Water Resources Research (<http://onlinelibrary.wiley.com/doi/10.1002/2013WR015002/abstract>), show that isolated wetlands play a strong role in regulating regional groundwater and the delivery of baseflow to rivers and streams through an indirect, but significant nexus. These results were cited prominently in a January 15, 2015 EPA report posted on the Federal Register, and have the potential to change the way geographically isolated wetlands are protected and managed across the US.

Watershed Ecology Lab Awarded New Grant from USGS and National Park Service

Dr. Kaplan's Watershed Ecology Lab (www.watershedecology.org) recently received a \$300k grant from the United States Geological Survey and National Parks Service Water Quality Partnership program. The project, "Modeling the connections between hydrology, water quality, and ecosystem health to support coastal preservation efforts across the Northern Gulf Coast" will fill an urgent need for information about how rising salinity levels in freshwater swamps are related to the delivery of freshwater flow to coastal systems, which is often driven by local water governance. The award will fund student support and field research in Florida, Louisiana, and Texas, and the results have the potential to aid coastal forest conservation and restoration across the Gulf of Mexico.



Above: Amazon Dams Network participants visiting the hydroelectric power plant in the Lajeado Dam on the Tocantins River in Brazil.

POWELL FAMILY STRUCTURES



Boundary Layer Wind Tunnel

The Boundary Layer Wind Tunnel (BLWT) is the wind engineers' principle tool to optimize designs and determine strength and serviceability requirements for mid- to high-rise buildings, long-span bridges and other wind-sensitive structures (e.g., wind turbines). It simulates the first few hundred meters of the earth's atmosphere at reduced geometric scale on the order of 1:50 - 1:400. Specialized models are placed on a turntable downwind to characterize the resultant pressure, displacement, acceleration, and base reactions caused by the action of wind. Dr. Masters, Gurley and Rice recently received a \$1.3M award from the National Science Foundation to vastly expand the capabilities of this facility, which is already one of the largest in the world.

AND MATERIALS LABORATORY

ESSIE operates one of the largest and most diverse experimental research facilities in the world. Located at UF's Eastside Campus, the Powell Family Structures and Materials Laboratory supports the study of hurricanes, tornadoes, earthquakes and human-devised threats and their impact on the built environment. In the coming newsletters, we will showcase our major equipment and tell you more about how they enable research that makes civil infrastructure and lifelines more resistant to hazards. This article gives a sneak peak of the five major wind engineering testing apparatuses in the Powell Laboratory:

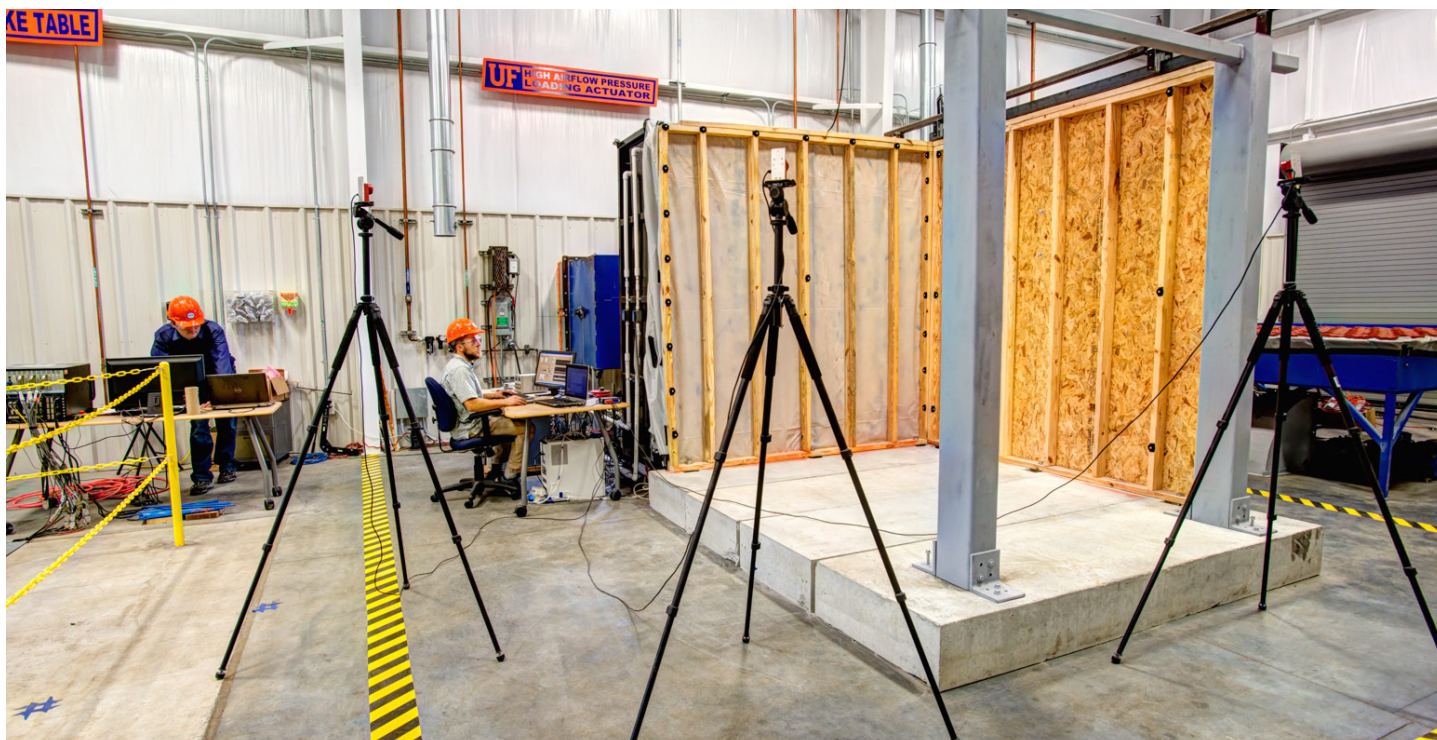
Boundary Layer Wind Tunnel | Spatiotemporal Pressure Loading Actuator
High Airflow Pressure Loading Actuator
Dynamic Flow Simulator | Multi-Axial Wind Load System

Article and photos by Dr. Forrest Masters

Spatiotemporal Pressure Loading Actuator

The Spatiotemporal Pressure Loading Actuator (SPLA) uses four individual pressure loading actuators and a large re-configurable test bed to more closely approximate the pressure fluctuations on roof surfaces. Dr. Prevatt is currently bringing this system online to study how cladding systems respond to variations in pressure caused by flow separating at the roof corner and the windward edge of the wall.





High Airflow Pressure Loading Actuator

The High Airflow Pressure Loading Actuator (HAPLA) was designed to test highly air-porous systems and wall systems that progressively fail during testing. The HAPLA can be used to study (a) through-soffit wind-driven rain effects in residential attics (b) Effects of weathering and aging on structural performance (c) Structural load path at residential building corner walls (d) Validation of standard test protocols against realistic simulations of wind and wind-driven rain and (e) Fenestration performance tests. This design enables the HAPLA to test components under simultaneous fluctuating pressure up to a 3 Hz waveform at pressures up to 6 kPa. A variable intensity water spray system (VIWSS) was developed to simulate wind-driven rain effects on building envelope systems. The VIWSS is installed within steel chamber and it consists of two separate spray racks with 25 nozzles. Wetting rates are adjustable from 50 mm/hr to 550 mm/hr.

Multi-Axial Wind Load System

The Multi-Axial Wind Load System (MAWLS) is a unique large-scale dynamic wind effects simulator that imposes dynamic wind pressure in combination with static in-plane shear or uplift forces. The system was designed to accommodate walls, components, or cladding specimens up to 18 ft by 24 ft. The system is based on the pressure loading actuator concept originally developed by the Building Research Establishment and later improved upon by the University of Western Ontario. Conceptually the system can be thought of as a means to replicate naturally-occurring pressure in a controlled laboratory environment. For example, if a pressure sensor recorded high-fidelity data on the wall of a commercial building in Homestead, FL during Hurricane Andrew, the Simulator could 'replay' this pressure sequence in its entirety. Ideally, the measured and artificially applied loading would be virtually indistinguishable.





Dynamic Flow Simulator

The Dynamic Flow Simulator (DFS) is used to determine ultimate wind uplift capacities of discontinuous roofing systems (such as tiles, asphalt- or metal- shingle systems, for which the uplift capacity is dependent on the geometric profile and the air permeability). The unique features of the DFS include the maximum velocity at the test section of 231 mph and the ability to replicate up to 2 Hz waveforms in wind velocity.



Development of the Florida Air Quality Modeling System (FAQMS)

PhD students, Ross Beardsley, and Robert Nedbor--Gross, in the environmental engineering sciences department have been developing an air quality forecast system specifically for Florida called the Florida Air Quality Modeling System (FAQMS). This project has important implications as it could be used for emissions reduction strategy analysis and provides valuable information for health and climate studies. In addition, there are currently no available daily air quality forecasts for Florida. FAQMS can be used help the public be aware if there are potential health risks on a daily basis.

The FAQMS system is made up of two main parts, the meteorology model and the air quality model. The meteorology model being used is the Weather Research and Forecasting (WRF) model. WRF has been developed and is maintained by the National Center for Atmospheric Research (NCAR) and it is the leading mesoscale meteorology model available. The chemical transport model is the Community Multi--scale Air Quality (CMAQ) model. CMAQ has been developed and is maintained by the Community Modeling and Analysis Systems (CMAS) center. CMAQ is one of the most used air quality models and is often implemented for regulatory purposes.

FAQMS is a fully automated system that seamlessly downloads and processes necessary forecasted input data then runs the WRF and CMAQ models. First, FAQMS actively downloads the input meteorology data from the Global Forecast System (GFS) to provide WRF with a starting point for meteorology. Then, FAQMS uses WRF to generate a 3--day meteorological forecast (Figure 1). After that, FAQMS processes the meteorology data to prepare it for CMAQ and downloads a chemistry starting point from the Real--time Air Quality Modeling System (RAQMS). Finally, CMAQ is run, which provides an air quality forecast for 3 days (Figure 2). Currently, FAQMS is using emissions data from the National Emissions Inventory (NEI) and is run on a 12 km resolution domain covering the southeast United States. In addition, FAQMS is run on the University of Florida's High Performance Computing Center. FAQMS has been evaluated against observational data from monitors in the MADIS data network for meteorology and the EPA's AirNow data network for air quality. From initial evaluations, FAQMS has shown generally good forecasting capabilities for Florida.

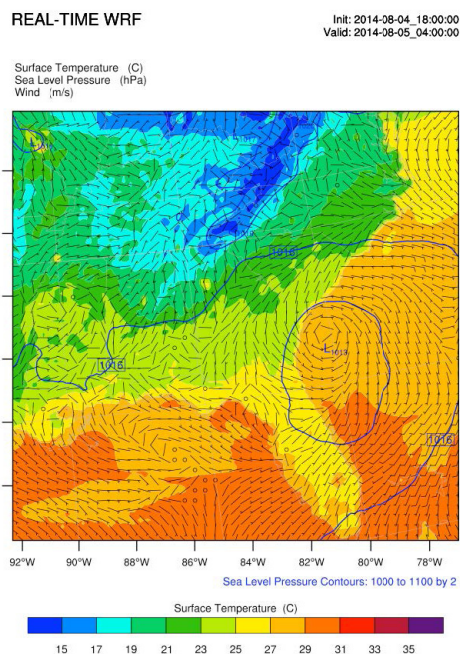


Figure 1: Sample meteorology output from WRF for the FAQMS domain. Temperature is shaded, pressure is contoured, and wind arrows are plotted

Work is continuously being done to improve FAQMS. An undergraduate researcher, Natalie Mecklenburg, has joined the FAQMS team to continue development and analysis. Future work will include updates to the emissions inventory data, and nesting domains with finer resolution inside the current domain to provide more detailed forecasts for certain cities including Gainesville, Tampa, Orlando, Miami, and Jacksonville. Once work on FAQMS is completed, a website will be published and publicly available. The website will provide the coming days' air quality index along with time series plots, and animations of criteria air pollutant transport. With this system in place, citizens of Florida will have access to easy to understand information on their local air quality.

Article and photos by Dr. Henderson, Ross Beardsley, and Robory Nedbor-Gross.

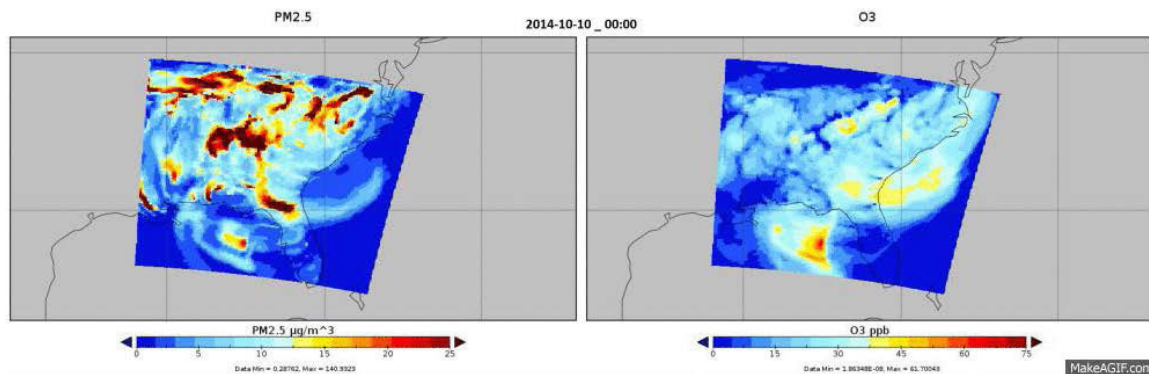
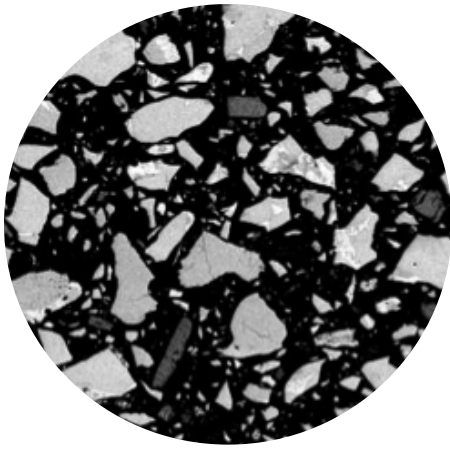
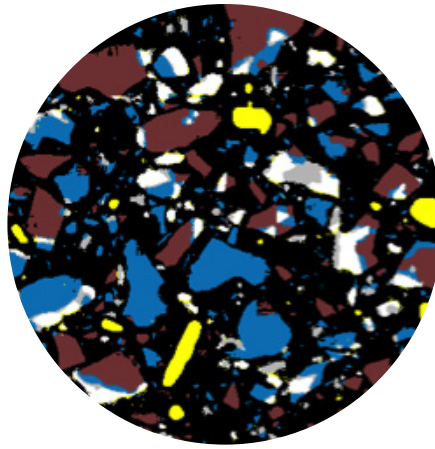


Figure 2: Sample output from CMAQ for pollutants ozone in ppb, and particulate matter $\mu\text{g}/\text{m}^3$.



a. Image Obtained via SEM



b. After Combination with EDX

Materials Research:

From **PHYSICAL** to **Virtual**

Recently, concrete materials research has taken on a more “virtual” aspect. Dr. Ferraro’s research group is working to develop advanced modeling techniques for performance prediction of concrete and cement based materials. An essential part of accurately modeling Portland cement behavior is a thorough characterization of the cement being simulated. This requires a sophisticated analysis involving Scanning Electron Microscopy (SEM), Energy Dispersive X-ray Spectroscopy (EDX) and Laser Particle Size Analysis (LPA). These techniques have been developed over the last several years, and continual refinement is a part of ongoing research led by PhD student Benjamin Watts.

The data acquired via SEM/EDX analysis is input to The Virtual Cement and Concrete Testing Laboratory (VCCTL), a cement modeling software package developed by the National Institute of Standards and Technology (NIST). Current efforts are focused on the continued validation of the VCCTL both through more sophisticated experimental testing as well as novel implementation of the software itself. Typically the simulations run in the VCCTL are performed in small numbers on a normal workstation, however, integration of the VCCTL into the HiPerGator supercomputer has enabled the automated execution of thousands of simulations simultaneously. This allows for the rapid analysis of large sets of model inputs and paves the way for automated refinement of the models capabilities as well as the creation of a sophisticated concrete mix design optimization tool.

Article and photos by Dr. Chris Ferraro

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employment opportunities for
our graduates? As an employer
are you interested in
presenting an information
session to our students?
If so, send an email with details
to careers@essie.ufl.edu



Dr. Scott Washburn Awarded NCHRP Project to Help Identify Ways for Improving Operational Performance of Two-Lane Highways

A large proportion of two lane highways in the U.S. serve an important role in transporting goods, services and people, and with expanding urban congestion, alternate routes are consistently being sought by shipping companies. This new NCHRP project headed by Dr. Scott Washburn, a transportation faculty member at UFTI, aims to create improved analysis methods for evaluating two-lane highways. Here's the project summary, including all the associated investigators:

Summary:

Two-lane highways account for a very significant portion of the national highway system and serve an essential function for the movement of people and goods. As urban areas continue to see growth further away from the central cities, two-lane highways in previously less developed areas are experiencing increases in traffic demand. Additionally, as urban area congestion continues to build, shipping companies are more frequently considering less congested two-lane highways in their routing decisions. The presence of commercial trucks on two-lane highways poses additional challenges for maintaining acceptable levels of operational performance due to more variance in the geometric design of these facilities and less favorable passing opportunities. Although adding additional lanes to a two-lane highway will often address operational deficiencies with two-lane highways, such construction projects are very expensive. Having good and accurate analysis methods for two-lane highways may allow roadway design and traffic engineers to identify ways to make significant improvements to the operational performance of a two-lane highway without resorting to a full multilane configuration.

The standard reference in the U.S. for traffic analysis techniques is the Highway Capacity Manual (HCM). The HCM 2010 contains a chapter that provides an analysis methodology for two-lane highways. Unfortunately, the HCM analysis procedure falls short in several respects of providing roadway design and traffic engineers the methods they need for performing accurate and comprehensive two-lane highway facility evaluations. The current HCM analysis procedure has been criticized on several issues, such as the speed-flow relationship, appropriate service measures, treatment of large trucks, guidance on base free-flow speed estimation, accuracy of passing lane adjustments, and limitations in analysis scope.

In addition to the need for a two-lane highway analysis procedure for the HCM that improves upon its various deficiencies and limitations, the transportation engineering and roadway design profession could benefit from a modern microscopic simulation tool that includes the ability to model two-lane highways, particularly the phenomenon of passing in an oncoming lane. Given the complexity of some two-lane highway facilities, it is unreasonable to expect that a deterministic, analytic procedure will be capable of accurately analyzing all two-lane highway configurations. For complex situations that are not amenable to analysis with the new HCM procedure, analysts should be able to utilize a simulation tool to help them analyze these situations, such as is commonly done for arterial and freeway corridors. Additionally, due to time and budget limitations with this project, it will not be possible to develop a new analysis methodology for the HCM strictly from field data. Thus, it will be necessary to make extensive use of a microscopic simulation tool to meet the objectives of this project. Unfortunately, simulation tools that were commonly used for modeling two-lane highway facilities in the past are no longer viable tools for future applications, for myriad reasons.

The objective of this research is to (1) identify appropriate performance measures for operational and capacity analyses of two-lane highways and develop models to produce these performance measures in an HCM context, and (2) develop or modify a simulation-based analysis method for two-lane highways and offer guidance for when to apply a simulation versus HCM methods. The resulting methods will lead to a two-lane highway facilities procedure suitable for incorporation into a future edition of the HCM.

Project link: <http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=3658>.

Research Team:

Scott Washburn, University of Florida
Ahmed Al-Kaisy, Montana State University
Tapio Luttinen, Aalto University
Richard Dowling, Kittelson & Associates, Inc.
Mike Dixon*, University of Idaho

* Passed away on May 7, 2014.

For more information, contact Dr. Scott Washburn at swash@ce.ufl.edu.
Article and photos by Dr. Scott Washburn

Reusing Florida's Wastewater: Past, Present, and Future

Grant Weinkam & Dr. Mark T. Brown



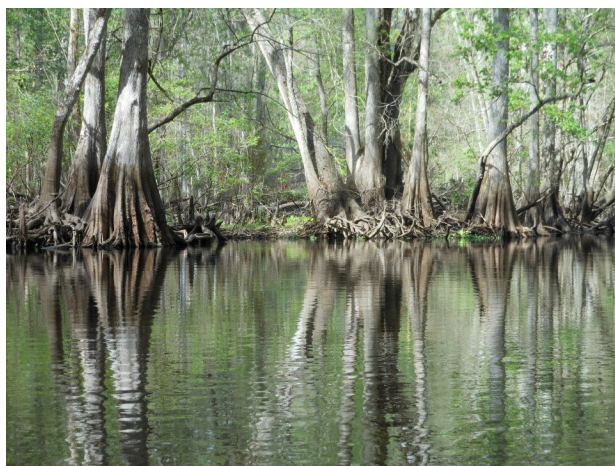
Agricultural Sprayfield in Central Florida- The billions of gallons of reclaimed water generated each year carries millions of points of nitrogen and phosphorus, which can help reduce the need for additional synthetic fertilizers in some agricultural operations.

Sewage around the world is typically discharged to surface water bodies, but continual loading can have undesirable effects from the wastewater constituents. The school of thought, of dilution being the solution, is changing as the negative accumulative effects of wastewater loading to surface waters is becoming increasingly evident around the world. Due to Florida's unique geography and topography, water quality issues associated with nitrogen and phosphorus loading gave rise to opportunities to determine viable alternatives for treated wastewater disposal.

The H.T. Odum Center for Wetlands, an ESSIE research center, conducted the first investigations on the use of natural systems to reduce surface water pollution by applying wastewater effluents to natural wetlands. Similarly, researchers in UF's Department of Agricultural and Biological Engineering studied the land application and use of spray irrigation of treated wastewater as a means of reducing surface water loading while producing crops and turf grasses.

Since these initial tests, emphasizing how natural systems can improve water quality, the state has embraced the practice of reclaiming wastewaters. Currently over 50%, equal to over 700 million gallons/day, of wastewater flows in Florida are reused, primarily as irrigation water to landscapes. Over 300,000 residences, 500 golf courses, 900 parks, and 300 schools (including the UF campus) are irrigated with reclaimed wastewater. In addition, millions of gallons/day of treated wastewater is

recycled through wetland treatment systems and infiltration basins. As the state continues increasing reuse volumes, it becomes progressively important to determine the best use of this resource in order to meet demands of a growing population that desires higher quality surface waters. Ph.D. student, Grant Weinkam's, ongoing research focuses on the long term fate of wastewater nutrients applied as spray irrigation around the state, and asks two questions... (1) Looking 10, 20, 50 years into the future, how will reclaimed water impact the natural filtration processes of lawns and golf courses receiving the water, and can they maintain our ideal performance expectations? and (2) Will preventive or reactive soil and land use management strategies be essential to adequately protect water quality and water quantity resources in these environments? Early results of the research suggest that the long term performance of spray irrigation systems is strongly influenced by effluent loading over time. Similar to the filtration process of many water treatment facilities, the wastewater effluent load applied to Florida soils over time may alter its chemical and biological characteristics, thus impairing the overall functionality of the system. Ultimately the results from this research may provide watershed modelers and managers information that will allow for more accurate determination of the long term fate of reclaimed water constituents in alternative reuse scenarios.



Cypress wetlands like this one were first used to provide treated effluent polishing which, in the long run, provided a nutrient source for increased tree growth.

Tim McClanahan works to save coral reefs using the language of science



Wildlife Conservation Society Senior Conservation Zoologist Tim McClanahan has spent the last 30 years studying the health of coral reefs along the Kenyan coast and throughout the Western Indian Ocean. (Photo by Emily Darling)

Sometimes scientific data can be used to tell both sides of a story. Sometimes it's the very thing that bridges divided interests, offering real-world solutions that speak where words have failed.

AAAS member Tim McClanahan was banking on that in 1994 when he invited a disgruntled group of traditional Kenyan fishermen to meet with him and marine resource managers to try to hash out new fisheries management practices.

He was stepping into the middle of a fire storm.

McClanahan, a senior conservation zoologist for the Wildlife Conservation Society (WCS) in Mombasa, Kenya, had just supported recommendations that some of their prime fishing territories located on the Kenyan coral reefs be designated as marine-protected areas. The fishermen were outraged, afraid the restrictions would damage their ability to make a living.

McClanahan had collected extensive data over a 10-year period demonstrating the destructive effect of some fishing techniques—such as seine fishing—on the coral reefs and fishing stocks. His research also showed the role that large marine-protected areas could play in conserving biological diversity and helping fishing stocks recover.

"There were a lot of accusations, blame and emotional discussions," recalls McClanahan. "You're dealing with traditions, asking communities to do things different from ways their fathers and forefathers did things."

McClanahan, who speaks fluent Swahili, served as a mediator among the stakeholders. The conflict didn't faze him, he says. In fact, he used the fishers' concerns to help guide new research: "My role was to be unemotional and to evaluate peoples' positions ... to look at whatever data—including opinions—that were available to use as a basis to try to reconcile some of the rift between managers and fishermen.

"And then to go out over the course of the year and collect data and test those ideas and come back a year later and say, 'Okay, here's what we were getting worked up about, here's the data and the results.' If people agree to make a change you make them part of the experiment," he says, "if not, they become the baseline for comparison."

As a result of the data—and new relationships forged—the fishermen agreed to stop seine fishing on Diani, a large, popular reef and beach just south of Mambasa.

Their small-scale meeting eventually ramped up into a national collaborative for fisheries management, the annual Fishers Forum—a model of solutions-based science collaboration in which McClanahan leverages scientific findings to help fisheries managers and fishermen solve problems of mutual interest.

McClanahan is a bit of a rare fish himself. A tall, white American scientist, McClanahan has been persistent and often unconventional in his efforts to understand and protect coral reef ecology throughout the western Indian Ocean and beyond. ("I look like a California surfer boy who spends his time speaking Swahili to fishermen," he quips.)

He first came to Kenya in the 1980s on a study-abroad program in college. While there, he fell in love with Nyawira Muthiga, a Kenyan woman studying zoology at the University of Nairobi. After several years of going back and forth between Kenya and graduate programs at the University of Florida, he married Muthiga in a traditional ceremony ("Very long and drawn out," he chuckles, adding, "100 goats and worth it!")

Settling in Mombasa, McClanahan was the first marine scientist to begin collecting large data sets on Kenya's reefs, which extend over most of the coastline. "In terms of marine conservation, there were few scientific publications at all, nothing broad-scale, a 19th century sort of biology," he observed.

He contacted the Wildlife Conservation Society—a leading, science-based conservation organization—about establishing some marine ecology programs in the region, which led to the establishment of its Coral Reef Conservation Project in 1990. Since then he has galvanized WCS efforts to develop tropical-marine ecology programs globally, with field offices now located in countries including Belize, Mozambique, Tanzania, Indonesia, Madagascar and Papua, New Guinea.

Often working as a team with his wife, a respected marine conservationist in her own right, McClanahan has spent the past 35 years studying, conserving and working on community-based projects to protect and restore Kenya's extensive coral reef.

A typical morning begins with a stroll along the beach outside his home, then a session of snorkeling or a dive as McClanahan collects field data, "maybe counting fish, counting corals, looking to see what they might tell me about the state of the ecosystem and its health."

Diving on Kenya's reefs is like leaving planet Earth, he marvels: "Reefs are fantastic because of the colors, the behaviors of the animals, the combination of the quirky fish morphology and their colors."

Afterwards he might go to a fish landing site to measure fish catches, interacting with Kenyan fishers, many of whom he now calls his friends. Afternoons are spent either on the phone with peer scientists at marine sites around the globe or supervising a cadre of fervent young marine conservation scientists he is training and deploying to conservation sites the WCS is establishing throughout the globe.

By nature, McClanahan exudes collaboration. With fishers, managers, biologists, sociologists, students, governments, NGOs. His interests dance between field studies, lab work, social science research, and community action. “I bounce between environmental, ecological and social research,” he says, adding, “I make a concerted effort to mix it up.”

His wide ranging interests have yielded more than 200-peer reviewed papers on topics including the status of reefs



McClanahan often collaborates with his wife, Nyawira Muthiga, a marine conservation scientist who directs the Kenyan marine program at the Wildlife Conservation Society.

in the Indian Ocean, the effects of humans on coral reefs, the role of fisheries management on their ecology, the effects of the 1998 coral bleaching event, simulation models of coral reef adaptation to climate change. He is the author of several books, including “Adapting to a Changing Environment: Confronting the Consequences of Climate Change,” which he co-authored with Joshua Cinner.

One of McClanahan’s most impactful conservation projects is also the simplest. He has championed the use of escape-gap fishing traps among local fisherman to reduce their sizable bycatch, which is placing a tax on the fragile reef ecosystem. These woven traps feature slots in the corners where smaller, non-target fish can escape.

“It seems like a stupid thing to do. Why put a hole in a trap?” says McClanahan. “The idea is they won’t catch fish of low economic value, but will catch large fish. We had [local] fishers try it on an experimental basis and they were making 20 percent more money. We’re now trying to get whole communities to adopt these traps.”

Despite his bucolic environs and varied research interests, McClanahan struggles daily against the single, depressing reality that the world’s oceans are in deep trouble. He wrestles with ways to help coral reef ecosystems survive in the face of ocean acidification and global warming.

“Some of the things I do come out of angst,” he acknowledges. “You are watching this beautiful ecosystem be degraded by climate change or human interaction. It can be frustrating.”

The worldwide coral bleaching event that occurred in 1998 sent McClanahan into an emotional tailspin, he said: “Half the corals died from warming surface water. There was a recognition that, ‘Woah, the future could be like this more and more because of climate change.’”

Initially, McClanahan succumbed to a feeling of despair about the future of the reefs, “then you sort of pull up your socks and go see what you can do,” he said.

For him, that meant suiting up in his diving gear and experimenting. He tried scrubbing off invasive algae with wire brushes and gardening shears. He planted new corals that he thought might survive in warmer waters. He collected reams of data—coral life histories which would indicate “which corals would be promoted by climate change and which demoted.”

With these data, McClanahan helped develop a new classification system of biological traits of corals that indicate which corals have the capacity to adapt to a rapidly changing environment. Simulation models based on these data are likely to be a vital baseline guide for reef management efforts in the future, as oceans warm further.

As discussions of climate change move from prevention to resiliency, McClanahan becomes even more convinced that conservancy of marine ecosystems depends on creative solutions to problems shared very locally between those who make a living on the sea and those who use science to help keep it alive.

“Getting the social and ecological context right is what’s important,” he says. “We don’t really believe in large-scale policies. I know that if you do promote policies that are actually doable, that improve their livelihoods and ... translate scientific ideas into a common language [pdf], then [people] are eager to participate.

“In ecology we typically spend a lot of time studying impact,” he adds, “but we need to spend equally as much time crafting solutions to those impacts [video]. If we don’t, we’re not part of the social contract of scientist and society to improve the relationship between man and nature.”

Dr. McClanahan graduated from the University of Florida’s Department of Environmental Engineering Sciences in 1990 under the supervision of Dr. Howard T. Odum.



McClanahan has developed large-scale data sets on corals in the Western Indian Ocean and routinely counts species of fish and corals along Kenya’s reefs.

Written by: AAAS MemberCentral Writer Selby Frame with photos by Emily Darling

FACULTY & STAFF ACHIEVEMENTS



Dr. Mark Brown

Mark Brown, was invited to give a plenary lecture titled “Emergy and a Post-Carbon Society: Insights on de-growth, austerity and well-being” at the International Symposium on Transitions to Post-Carbon Societies, organized by the University of Valencia, Spain Post Carbon Project, 6, 7 and 8 October 2014.

Mark Brown was named Distinguished Visiting Professor, School of the Environment, Beijing Normal University, June, 2014

Mark Brown conducted an International Course on Environmental Accounting and Management at Beijing Normal University. This three-week short course in emergy accounting was attended by 67 faculty and students from Beijing Normal University as well as 5 other universities in and around Beijing, China.



Dr. Lily Elefteriadou

Dr. Lily Elefteriadou has been selected by the Transportation and Development Institute to receive the 2015 James Laurie Prize “For outstanding leadership as one of the world’s foremost experts in the field of traffic operations, traffic flow theory and simulation and her research which has been incorporated into the Highway Capacity Manual.”



Dr. Arnoldo Valle-Levinson

Dr. Arnoldo Valle-Levinson was nominated for a membership in the Affiliate Faculty of the Center for Latin American Studies. The Faculty Advisory Council has also recommended Dr. Valle-Levinson for Graduate Faculty status in the Center. Once the Graduate School has approved his appointment, he will be eligible to chair Masters in Latin American Studies (MALAS) theses in the Center.

The Center is the oldest and one of the largest in the US, with over 160 Latinamericanist and Latino Studies faculty distributed in some 50 departments across campus. The Center has been a US Department of Education, Title VI, National Resource Center in Latin American Studies since the inception of the Title VI program in 1961.



Dr. Scott Washburn

Dr. Scott Washburn has been selected as a College of Engineering Doctoral Dissertation Advisor/Mentoring Awardee for academic year 2014-2015. This honor, based upon an extensive review of his application packet, recognizes your excellence, innovation, and effectiveness in doctoral student advising and mentoring.

Dr. Washburn award will be formally acknowledged at the Spring College of Engineering Awards Luncheon in 2015.

Where are they now? ESSIE Alumni

Patrick Simpkins



“To infinity and beyond” (as spoken by Buzz Lightyear in Disney’s Toy Story) epitomizes exactly what Mr. Patrick Simpkins (BSEE – ’83) has achieved since graduating. Upon his graduation, Patrick immediately began his career with NASA at the Kennedy Space Center as a lead engineer in the Space Shuttle Engineering organization. He was responsible for the engineering, test, processing, launch, and on orbit performance of the Environmental Control and Life Support Systems on the space shuttles, including system lead for the Space Shuttle Discovery. He moved into greater roles of responsibility, earned an astronaut award only given to less than 1% of the entire human spaceflight government and contractor workforce, the “Silver Snoopy” award. He then moved into greater leadership responsibility and even Agency-wide efforts. These include re-engineering the Kennedy Space Center organizations, designing, implementing, and leading the NASA Kennedy Space Engineering and Technology Directorate, the first of its kind at the KSC. He has received numerous awards including the Presidential Meritorious Rank award for performance at the Senior Executive Service level (the highest civilian grade in the Federal government). So, this Gator alum certainly exemplifies how one can “Reach for the sky” (Woody, Disney’s Toy Story) while keeping his feet on the ground by being a key player in the NASA organization.

Where are they now?

Gregg Schoppman



Mr. Gregg Schoppman, BSCE ('96) ME ('08) worked as a project engineer for Vogel Brothers Building Company in Lakeland, FL. He went on to work for The Murray Company in Tampa as a project manager. He was recently named as one of the 2014 Top 25 Consultant of the

Year worldwide and has received various awards throughout the Tampa area. He doesn't hesitate to describe the reason he chose to attend UF with many "greats" (reputation, program, institution). He clearly still believes this as he serves on the UF ESSIE Advisory Board and is actively involved with our students in providing them with real world experiences about the industry and construction business. He states that UF gave him the tools to be successful and helped him become a leader in the field today. Gregg is a "great" example of a Gator alum!

Peter Moore



As Robin Williams states in his role as Peter Pan in the movie Hook, "to live, will be an awfully big adventure", Mr. Peter Moore (BSCE- '97, ME - '04) proves these words. Peter, who has received countless awards (ASCE Fellow, Florida Engineering Society Younger Engineering of the Year

from Florida, Edmund Friedman Young Engineer Award from ASCE) and is under the age of 40, graduated from the University of Florida in December of 1997 having previously accepted a verbal offer from an engineering company's branch office in Nashville, Tennessee. Unfortunately, the verbal offer never materialized into a written offer because the firm was on a hiring freeze and the relationship that was taking him to Nashville abruptly ended. So, with the holidays approaching he went home to South Florida with no career prospects and a heavy heart. At the time, South Florida was in a construction lull and even though he had many interviews, the prospects of finding a job were low. Fortunately for Peter, a fellow named Tery Glunt took a chance on a newly minted graduate (he was looking for someone with experience). The position was based in a branch office with only Mr. Glunt, an owner of the firm. This allowed Peter to develop marketing and management experience at a greatly accelerated rate. At the same time, he became active in the local chapter of the Florida Engineering Society and the MATHCOUNTS program specifically. He joined the firm now called Chen Moore and Associates in late 1999 as the third employee. At Chen Moore, he took on a number of roles as opportunities presented themselves, becoming a partner in 2002, President in 2008 and having the firm's name officially changed to include his own in 2011. With seven offices and nearly fifty employees, the firm is well poised for continued success and growth into the future and his journey will take him along with it. Peter, a very proud Gator, states "I know that the "Gator Nation" commercials are the subject to much ridicule from our rivals, but I really and truly believe that for about 99% of UF graduates, there really is a difference. From the quiet confidence that our graduates hold from our first class education to the unmistakable bond that Gators have between one another, UF has truly been a fantastic foundation for my career." We will watch in awe as the adventure for this young entrepreneur continues.

Randy Cohen



Randall (Randy) Cohen, PE, was recently appointed to Regional Manager of Miller Legg's Winter Park Office. He will be instrumental in the expansion of the firm's business practices in Central Florida. With 18 years of Central Florida experience, he will also work with clients on land development and

permitting projects in both the private and public sectors. He has been responsible for management, design, permitting and construction administration of residential, resort, commercial and institutional projects. Cohen's areas of expertise include site due diligence and feasibility studies for land development projects. He brings valuable knowledge necessary for the successful design, permitting and construction of projects and assurance of project team interaction and coordination.

Cohen earned a Bachelor of Science degree in Civil Engineering from the University of Florida in 1996 and has been a licensed professional engineer since 2002.

Miller Legg successfully improves communities and creates environments for a variety of clients from multiple locations, as shown on our website at www.millerlegg.com. Client sectors include land development, transportation, municipal and county government, healthcare, education, federal and international.

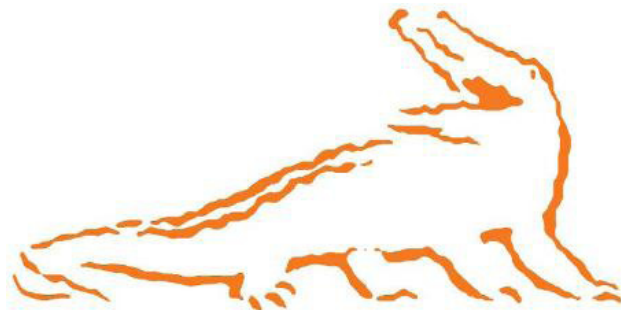
WHERE ARE THEY NOW?

Ron Antevy



Mr. Ron Antevy (BSCE – '91) was hired right out of UF and relocated to Chicago by Waste Management, Inc. to participate in an engineering and management training program. He spent close to 10 years in the construction and environmental services industries where he had the

opportunity to work closely with many engineers designing and managing hundreds of millions in environmental projects. In 1998 he teamed up with his brother Jon, an architecture and building construction graduate of UF, to develop and grow e-Builder. e-Builder pioneered the design and use of cloud-based collaborative project management software for construction. The software was recognized by Engineering News Record (ENR) as one of the top 100 innovations of the last century in the construction industry. Today the e-Builder software is in use by over 40,000 construction professionals to manage \$150 Billion in active projects, including many notable civil engineering projects throughout the world. Ron states that UF helped him in many respects. He started two businesses while in school – so he honed his entrepreneurial skills here. Also, although he doesn't practice engineering on a day to day basis and hasn't for a long time, he states that his engineering education gave him a framework and methodical process to identify and solve problems. He believes that his "engineering way of thinking" has been central to his success in business over the last 25 years. We certainly agree and are very proud of this Gator "engineer"!



Donald Eckler



Mr. Donald Eckler's (BSCE – '73, ME – '74) most memorable moment at UF was completing his oral defense of thesis for his master's degree under the supervision of Professor John Davidson (now emeritus faculty.) With his solid background in geotechnical engineering, Donald designed a

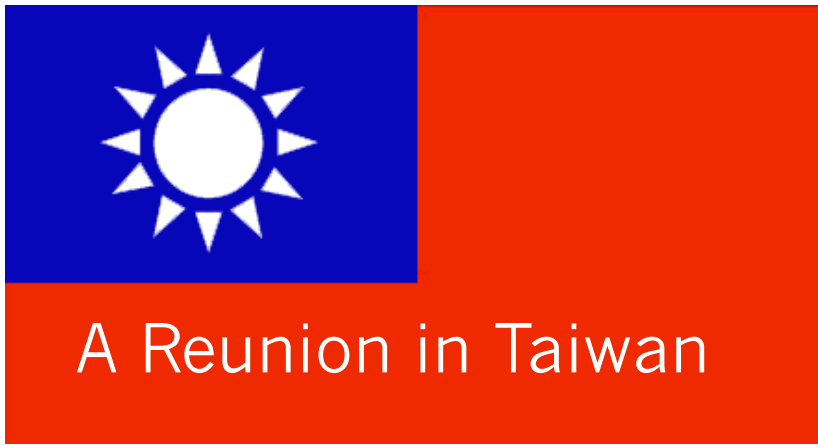
one mile-long, 18 inch diameter, HDPE horizontal directional drill in the Florida Keys. He also designed the first MIEX water treatment system in the US. He is a Fellow in ASCE and was named Broward County Florida Engineering Society's, "Engineer of the Year" in 2004. Donald was employed by CH2M Hill for eleven years as a project manager then went on to form his own company (Eckler Engineering, Inc.) where he has been President for 29 years. UF ESSIE is fortunate to have Donald as an active member of the UF ESSIE Advisory Board where his input is greatly revered as a seasoned professional in the industry.

Tim Ziegler



Tim Ziegler, PE, recently joined Miller Legg as Senior Engineer. With 18 years of Central Florida experience, he works with a broad range of clients in both the private and public sectors. In Ziegler's career, he has been responsible for design, permitting and construction administration of various private

projects including residential, resort, commercial and institutional projects. His areas of expertise include site due diligence, site design, stormwater permitting and feasibility studies for land development projects. He brings valuable knowledge necessary for the successful design, permitting and construction of projects and assurance of project team interaction and coordination. Ziegler earned his Bachelor of Science degree in Civil Engineering from the University of Florida in 1996 and has been a licensed professional engineer since 2002. Miller Legg successfully improves communities and creates environments for a variety of clients from multiple locations, as shown on our website at www.millerlegg.com. Client sectors include land development, transportation, municipal and county government, healthcare, education, federal and international.



Professor Mang Tia was invited by a Florida Civil Gator alumnus--Dr. Dung-Myau Lue and gave a seminar talk titled "Evaluation of Long Life Concrete Pavement" at the Department of Civil Engineering of the National Chung Hsing University, Taichung, Taiwan on the morning of June 30, 2014.



Another Florida Civil Gator alumni reunion hosted on October 22, 2014 to greet with a special guest- Dr. Chung-Long Wu (more known by Dr. Chung Wu) who is working at the Hampton Roads District of Virginia Department of Transportation. He came back to Taiwan to give a Keynote speech on the annual meeting of the Chinese Society of Pavement Engineering on October 23, 2014. Dr. Wu is also the Protégé with Dr. Tia. The Florida Civil Gators are as follows in this photo from left to right: Dr. Yu-Min Su, Dr. Chui-Te Chiu, Dr. Chung-Lon Wu, Dr. Ming-Gin Lee, Mr. Yu-Chao Chang.

After the seminar talk at NCHU on the afternoon of June 30, 2014, there was a reunion party hosted by several Florida Civil Gator alumni.



FEATURED STUDENTS & STUDENT GROUPS

EES PhD student Chih-Hsiang Chien was Awarded won best poster in the Conference of the American Association for Aerosol Research (AAAR)

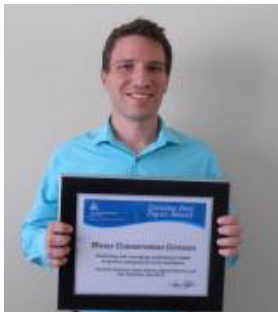


EES PhD student Chih-Hsiang Chien was awarded 'Student Poster Competition Winner' at the 33th Annual Conference of the American Association for Aerosol Research (AAAR) on October 24, 2014. His presentation focused on a new personal sampler for measuring sulfuric acid mist and sulfur dioxide. Chih-Hsiang is pursuing his PhD in the Department of Environmental Engineering Science and mentored by Dr. Chang-Yu Wu.

Stefy Alvarado Received an Honorable Mention at the Graduate Student Research Day Poster Competition

Congratulations to Stefy Alvarado who received an Honorable Mention at the Graduate Student Research Day poster competition! There were more than 200 posters in the competition. Stefy's presentation stood out, especially as an undergraduate among so many graduate students.

EES Publication Wins 2013 Journal of the American Water Works Association Best Paper Award



During the past seven years, the Conserve Florida Water Clearinghouse research team, headed by Professor Jim Heaney of the EES Department, has developed a variety of innovative simulation and optimization techniques to promote improvements in urban water use efficiency. These methodologies are being incorporated into internet based software called EZ Guide to

assist Florida water utilities in evaluating water use efficiency. One of our recent papers titled "Predicting and Managing Residential Potable Irrigation Using Parcel Level Databases" was selected as the winner of the 2013 Best Paper award of the Journal American Water Works Association (JAWWA). AWWA was established in 1881 and has around 50,000 members worldwide. The lead author on the paper, Dr. Ken Friedman, received his Ph.D. in December 2013 and is now working as a water resources engineer with the Northwest Florida Water Management District. Dr. Miguel Morales received his Ph.D. in August 2014 and is doing post-doctoral research with Professor Heaney. Mr. John Palenchar received his M.E. degree in 2010 and is employed as an environmental control supervisor for the City of Largo, FL

CCE student Brandon Hunter won 1st place in Technical Research Exhibition Competition

Brandon Hunter was awarded First Place in the Technical Research Exhibition Competition at the Fall Regional Conference of National Society of Black Engineers (NSBE) in Tampa, Florida on November 1st, 2014. Brandon is a CCE student conducting research with Dr. Tim Townsend in EES.

Lauren Shuler recieved the CDM-Smith Fellowship Award



This year marks the 22nd CDM-Smith Fellowship Award. The fellow chosen for 2015 is Lauren Shuler, an EDGE ME student originally from Boulder Colorado. The ceremony was held in the Keene Faculty Center

and many faculty, stents, and alumni joined to celebrate the event. Photo: from left, 2014 Fellow Weizhi Cheng, EES Head C Y Wu, CDM-Smith Vice President Patrick Victor, 2015 Fellow Lauren Shuler.

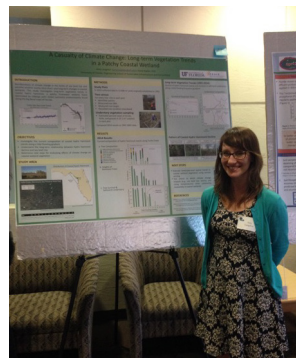
Stephanie Ishii, Environmental Engineering Sciences Ph.D. Student awarded Leadership Scholarship



Congratulations to Stephanie Ishii who has been awarded the 2015 Thomas O. Hunter Leadership Scholarship! Stephanie is a PhD student within Environmental Engineering, specializing in the area of water treatment. She is one of 4 students within the College of Engineering who was nominated by Department Chairs/Graduate Coordinators

for this award, chosen out of over 8,000 individuals.

PhD Student Amy Langston Wins Top Honor in AWRA Poster Contest



ESSIE PhD student Amy Langston won first prize at the 24th Annual Southwest Florida Water Resources Conference, organized by the Florida Section of the American Water Resources Association. Langston, a second-year PhD student in Dr. Kaplan's Watershed Ecology Lab (www.watershedecology.org) is studying long-term changes in Florida's coastal ecosystems.

ASCE Southeast Region Competition brings UF Another First Place Finish



The University of Florida's chapter members of the American Society of Civil Engineers (ASCE) recently participated in the ASCE Southeast Region Conference Competition. The team took home trophies for top-3 finishes in the following competition events:

Concrete Canoe	1st
Steel Bridge	1st
Surveying	1st
Environmental	1st
Concrete Ladder Golf	2nd
Professional Paper	3rd
Visual Display	3rd

The overall conference results were only released on March 26, 2015. UF did in fact repeat for 1st Place overall at the conference (68.3 points), followed closely by the University of Puerto Rico-Mayaguez (UPRM) in 2nd (65.7 points) and the University of Central Florida a more distant 3rd place (55.5 points). UPRM has firmly

established themselves as UF's major competitor (they finished 2nd in Concrete Canoe and 3rd in Steel Bridge).

Within the Steel Bridge competition the event breakdown was: Visual Display 1st, Lightness 1st, Stiffness 2nd, Construction Speed 2nd, Construction Economy 2nd and Structural Efficiency 1st.

Within the Concrete Canoe Competition the event breakdown was: Design Paper 1st, Oral Presentation 1st, Final Product 1st, Women's Endurance 4th, Men's Endurance 2nd, Women's Sprint 2nd, Men's Sprint 5th and Coed Sprint 1st.

The Concrete Canoe Competition was close enough that if our co-ed Sprint paddling team (defending National champions) did not win that last race and instead finished 4th or 5th, we would have finished 2nd in Canoe, which would also have made it very likely that we would finish 2nd overall in the conference. The co-ed sprint team won that race in impressive fashion - by 10 seconds over the other competitive teams. It was a superb finish to the day (and - as we later discovered - far more important than we realized at the time).

Both the Steel Bridge and Concrete Canoe teams are preparing and raising funding for their national competitions (Kansas City and Clemson respectively). Way to go GATOR Engineers and kudos to all of the UF members of ASCE who participated in the conference activities!

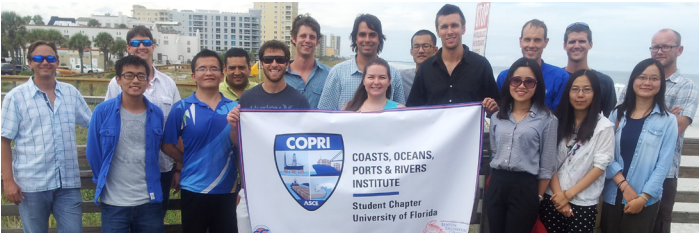
Photos courtesy of UF chapter members of ASCE 2015



UF co-ed sprint team



UF COPRI STUDENT CHAPTER FALL 2014

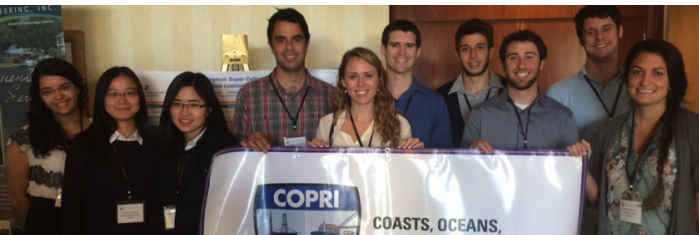


Coastal & Oceanographic Engineering students at the University of Florida continue to benefit from their involvement with the UF COPRI student chapter. Recent highlights include field trips to the United States Geological Survey in St. Petersburg, FL and to the United States Army Corps of Engineers Jacksonville District. These field trips provide an excellent educational and professional development activity for the chapter members.

Kara Doran and other scientists at the USGS hosted UF COPRI on May 13 for a series of seminars on various topics ranging from tar balls from the Gulf oil spill, coastal vulnerability to hurricanes and coastal numerical modeling. Following the seminars, the group toured several beach project sites including a shore stabilization project at Upham Beach with geotextile T-groins installations.

More recently, the UF COPRI chapter visited Jason Engle and other coastal engineers with the USACE Jacksonville District on September 5. A series of seminars were presented with topics including Jacksonville harbor deepening studies, various shore protection projects, as well as regional sediment management strategies. The group then visited and discussed the history of the Duval County shore protection project, one of the seminar topics from that morning.

UF COPRI STUDENT CHAPTER SPRING 2015



The UF Student Chapter of COPRI, an ASCE organization, has been quite active in the 2015 Spring Semester. Officer elections and new memberships have increased the student involvement in conferences, community projects, and chapter activities over the past few months.

At the beginning of February, COPRI helped fund 10 UF Civil and Coastal Engineering students to attend the 2015 National Conference on Beach Preservation Technology in

Clearwater Beach, Florida. The masters and doctoral students presented their research in a poster session and volunteered with coordinating and running the conference. It was a very unique opportunity to promote UF research and network with some of the biggest names in our industry from our own state!

Another project that COPRI is supporting is the Physics Bus Project, ran by Chris Discenza. This semester, COPRI members are volunteering to clean and build demonstrations for the bus, which will travel the southeast US this summer, teaching elementary through high school students about fundamental concepts of physics through fun, hands-on demonstrations.

Other Chapter activities include an overnight camping trip in Cedar Key, Florida; a beach cleanup and BBQ day; Happy Hour Resume Workshops; and an end of the semester social in celebration of our graduates.

Written with photos by Jackie Branyon, UF COPRI President

UFITE Wins 2nd Place at International Traffic Bowl Grand Championship 2014



2014 UF traffic bowl team (left to right): Michael Armstrong, Donald Watson, Richard (Thomas) Chase, Pruthvi Manjunatha

The UF Institute of Transportation Engineers (ITE) traffic bowl team competed in the 2014 ITE International Collegiate Traffic Bowl Grand Championship in Seattle, WA on August 12, 2014. The team advanced to this competition after winning the Florida District Traffic Bowl on June 26, 2014. The ITE traffic bowl is a Jeopardy-style game that tests students' knowledge of transportation engineering and transportation planning. The

2014 UF traffic bowl team consisted of Richard (Thomas) Chase, Donald Watson, Pruthvi Manjunatha, and Michael Armstrong. This year marked Thomas' fourth time competing in the Grand Championship and Donald's second. Both Thomas and Donald were on the UF team that placed 1st in last year's Grand Championship.

During this year's competition, the UF team advanced to the final round after beating Purdue University and Clemson University in the semifinal round. They competed against Penn State University and the University of Texas (UT) at Austin in the final round for a potential repeat of last year's victory. As they entered the Final Clue, all three teams were within 700 points of each other, with UT Austin in the lead. UT Austin managed to hold on to its lead and took 1st place. The UF team placed 2nd. The UF team is now looking to recruit new members for next year's competition in hopes to once again advance to the Grand Championship.

ESSIE's Evening with Industry Spring 2015



Thank you to all of the companies that participated in this event!

AIM Engineering & Surveying, Inc. | Apex Technology, Inc. | The Balmoral Group
Brasfield & Gorrie | Chen Moore & Associates | DRMP, Inc. | England-Thims & Miller, Inc.
FDOT | Geosyntec Consultants | Golder Associates, Inc. | HDR Engineering, Inc. | HNTB Corporation
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