

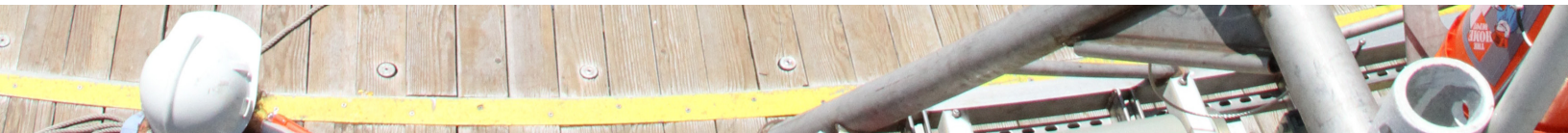
INSIGHTS

INTO SUSTAINABLE ENGINEERING



SPRING | SUMMER 2014

UF | UNIVERSITY of
FLORIDA



SPRING | SUMMER 2014

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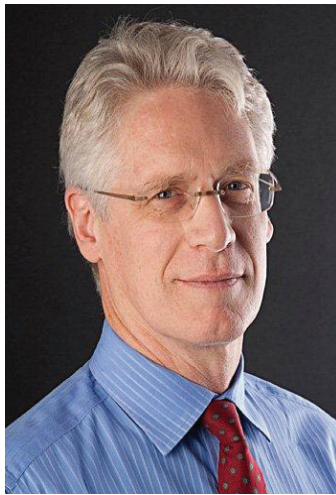
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Dr. Kirk Hatfield

Director
Engineering School of
Sustainable Infrastructure &
Environment

DIRECTOR'S COMMENT

As we close out another academic year, I am reminded of all of the accomplishments of our faculty, students, and staff. We have had a banner year for recognitions of excellence within ESSIE from faculty and staff, to graduate and undergraduate students, and student organizations – a sign that ESSIE is following the current mission of the University of Florida: “UF Rising to National Preeminence.” Our faculty and affiliates were recognized at the state, national and international level by such organizations as NSF, ASCE, NIH/ERST, ASEE, NRL and the Mexican Academy of Sciences. Many of our students were also recognized by receiving top awards from NSF, SACNAS, ASCE, FSAWWA, WTS, PTI and ACI. Locally, out of eight individuals who were selected for the 2013-2014 UF College of Engineering Excellence Awards, four of them were ESSIE faculty and staff members, an honor that is not frequently bestowed on any single unit.

As ESSIE continues to evolve, so do our research programs. There is a stronger interest among our faculty to create new alliances and collaborate on areas within Civil, Coastal and Environmental Engineering that push beyond traditional lines of thinking in our fields.

Our faculty have also reached out to form collaborations within our state and at national and international institutions following our current direction of establishing and sustaining resilient coastal communities and pursuing global opportunities. We have hired two new talented and promising faculty members, Dr. Christine Angelini and Dr. Xiaoyu Song. Dr. Angelini's area of expertise falls within wetland ecology and Dr. Song's expertise is in the area of geosystems engineering. Their backgrounds will help expand the breadth and depth of the research activities within each of these specializations and we are thrilled that they have joined our faculty.

While writing this, I have come to realize that when one looks back and sees how much growth and success has been achieved and acknowledged, it is a great position to be in. However, the challenge is to continually look forward. There are many more opportunities and achievements that we will continue to pursue for the benefit of our students, the institution and the global community.

This year has been stellar and yes, it's great to be a Florida Gator Engineer!

ALL IN THE NUMBERS

According to the most recent data gathered by the American Society for Engineering Education from 2012, ESSIE ranks among the top ten largest programs in terms of number of tenure-track faculty and numbers of students enrolled as undergraduates, master's or PhDs. In addition, ESSIE's doctoral program ranks among the top ten most productive programs as measured using the number of PhD graduates in 2012, PhD graduates per faculty, and PhD graduates per faculty per time-to-degree.

Department Size	Faculty Number
Texas A&M – College Station (Look)	56
University of Texas – Austin (Cockrell)	55
Georgia Institute of Technology	54
University of Illinois – Urbana-Champaign	48
Purdue University – West Lafayette	45
North Carolina State University	45
Virginia Tech	44
University of Florida	43
University of California – Berkeley	42
Massachusetts Institute of Technology	35

PhD Graduates	2012 Graduates
Georgia Institute of Technology	36
University of California – Berkeley	32
University of Texas – Austin (Cockrell)	31
Texas A&M University – College Station (Look)	30
University of Illinois – Urbana-Champaign	29
University of Florida	27
Virginia Tech	25
Stanford University	21
University of California – Davis	19
North Carolina State University	19

PhD Productivity	2012 Graduates/Faculty
Lehigh University (Rossin)	0.81
University of California – Los Angeles (Samueli)	0.81
Stanford University	0.81
University of California – Berkeley	0.76
California Institute of Technology	0.70
Georgia Institute of Technology	0.67
University of Florida	0.63
University of Southern California (Viterbi)	0.63
Carnegie Mellon University	0.61
University of Illinois – Urbana-Champaign	0.60

PhD Productivity	2012 Graduates/Faculty/ Years to Graduation
Lehigh University (Rossin)	0.21125
Stanford University	0.139029
University of California – Los Angeles (Samueli)	0.133703
University of Florida	0.133492
Pennsylvania State University – University Park	0.132075
University of California – Berkeley	0.121905
Georgia Institute of Technology	0.12
California Institute of Technology	0.116667
University of California – Davis	0.107249
University of Minnesota – Twin Cities	0.107248



Diverging Diamond Interchange (DDI)

Incorporating Alternative Intersections and Interchanges Into the Highway Capacity Software (HCS 2010)

The use of alternative intersection and interchange designs in transportation engineering is continually becoming more popular in the United States – approximately fifty exist today, with many more currently in the planning and development stages. As a result, practicing civil engineers that specialize in transportation planning and traffic operations must be able to accurately quantify their performance (i.e., capacity and level of service) to make informed design and operations decisions.

The McTrans Center within the University of Florida Transportation Institute (UFTI) is collaborating with several researchers and investigators as part of an ongoing Federal Highway Administration (FHWA) project to define methods for integrating new procedures and methodologies for these alternative intersection and interchange designs into the Highway Capacity Manual (HCM 2010). In particular, the FHWA is interested in four at-grade designs: the Median U-Turn (MUT),

Restricted Crossing U-Turn (RCUT), Displaced Left-Turn (DLT) and Diverging Diamond Interchange (DDI).

While these alternative designs may initially require some time to establish familiarity and consistently meet driver expectations, many experts in the field believe the investment is worth considering. Conventional signalized intersections that experience excessive levels of congestion and delay cannot always be solved by simply adding extra lanes or expanding the right-of-way – in many cases, the necessary funding and land space simply do not exist. These four designs are examples of innovative solutions conceived by transportation engineers that maximize capacity and level of service while minimizing land use and construction costs.

The first step in the process was collecting as much information on the designs as possible from a number of sources; this included observing microscopic simulation videos as well as



Median U-Turn (MUT)



evaluating research publications, operational reports, and design guidelines for all four designs in order to become familiar with all of the unique intricacies and nuances within the each of the designs. Secondly, a series of origin-destination tables were developed in order to equate peak-hour turning movement counts of conventional intersections to those of alternative intersections, as well as to account for additional movements previously undefined (U-turns, for example). Then, the designs were incorporated into the Streets module of the Highway Capacity Software (HCS 2010) by developing a number of “shortcuts” in order to model the unique features of these designs.

Many components of the expanded procedures and methodologies are still forthcoming; “gaps” or limitations with the current HCM 2010 have been identified and are being addressed using statistics-based analytical techniques based on recorded video feeds stationed at several existing alternative intersections and interchanges located throughout the United States. One of the more significant concepts being considered is the use of travel time as a parameter for measuring level of service, potentially replacing control delay used for conventional signalized intersections.

This would account the additional distances required for some movements in these designs. Right-turn on red (RTOR), yield-controlled right turns and right turns not under signal control (free rights) are also being analyzed. Other familiar concepts that must be further evaluated to account for new geometric features within these alternative designs include lane utilization factor, adjusted saturation flow rate, upstream filtering adjustment factor, free-flow speed, deceleration time

Displaced Left Turn (DLT)

and queue storage ratio, to name a few. The ability to model alternative intersections and interchanges within

HCS 2010 provides the tool for the research process to evaluate each of these design features.

Once the procedures are finalized within the HCM 2010, the HCS 2010 will be modified to provide this capability to end users within a more intuitive interface application. Just as roundabouts were once considered inventive and groundbreaking when they were introduced in the United States in the 1990’s, alternative intersections and interchanges are considered by many in the field to be the wave of the future in transportation engineering.

Article and photos by Bill Sampson

Restricted Crossing U-Turn (RCUT)

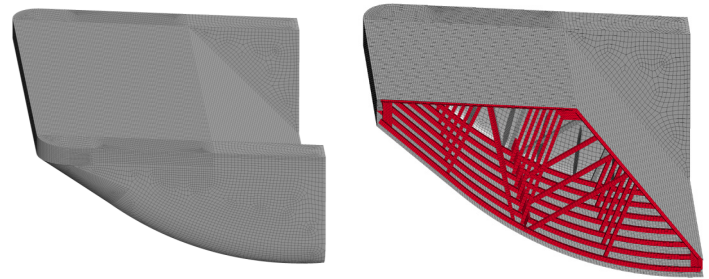
“UF Vessel Impact Research – for Safety in Design”

Commercial waterway shipping vessels can be large in size: a single barge, for example, can weigh up to 1500 tons; the equivalent of 58 fully loaded trailer trucks. When such massive vessels collide with bridge piers located in navigable waterways, significant damage and loss of life may result (Figure 1). To mitigate the threat from such collisions, researchers at the University of Florida (UF), led by Dr. Gary Consolazio, have worked with the Florida Department of Transportation (FDOT) for more than a decade to: 1) develop a better understanding barge-bridge collision dynamics, 2) develop impact analysis tools, and 3) make design recommendations that lead to impact-resistant structures.



Figure 1. I-40 bridge collapse due to barge collision at Webbers Falls, OK (2002) (Photo credit: Oklahoma Department of Transportation)

One of the primary research products of this UF/FDOT research has been the development of an impact load prediction model, based primarily on analytical (finite element) studies, which can be used to compute design impact forces for barge collisions with bridge piers and waterline pile caps. As with any coupled structural system, the level of force imparted during an impact event is a function of the stiffness of the impacting barge as well as that of the bridge structure. Within the bow (front portion) of a barge, primary sources of stiffness are internal structural trusses (fabricated from steel) that are positioned laterally across the width of the vessel (Figure 2), and which are confined within external steel hull plates. Findings from analytical studies conducted by UF have revealed that the number of these internal stiffening trusses that become engaged on initial contact with a pier, directly influence the magnitude of impact forces that are generated. Importantly, narrow or rounded piers engage fewer internal trusses on initial impact, thus resulting in smaller impact forces. Conversely, if a pier is wide, or flat-faced (for example, a rectangular waterline pile cap), a larger number of internal trusses are engaged, thereby increasing the magnitude of the impact forces that are exerted by the barge on the pier.



(a) (b)
Figure 2. Finite element model of a) barge bow; b) section through barge bow showing internal trusses (barge bow model is composed of approximately 120,000 shell elements)

Experimental validation of these analytical findings has been carried out in two distinct stages: full-scale testing (in 2004) and reduced-scale testing (in 2014). In 2004, full-scale barge-bridge impact experiments were conducted by UF and FDOT on piers of the old St. George Island Causeway bridge (Figure 3-a) near Apalachicola, FL. These experiments generated a wealth of data relating to barge impact forces, and pier and soil response, however due to safety considerations, only moderate levels of barge bow deformation could be achieved (Figure 3-b). Consequently, to validate analytical findings relating to collisions that produce high levels of barge deformation, reduced-scale pendulum impact experiments were conducted in Spring 2014.



(a) (b)
Figure 3. Full-scale barge impact tests at St. George Island (2004): a) overview of tests; b) deformed bow following testing

In this most recent effort, UF and FDOT researchers conducted tests on two 0.4 scale replicates of a jumbo hopper barge bow in order to quantify severe barge deformations and corresponding impact forces. Preparation for this effort was executed in large part by Dr. Daniel Getter and George Kantrales (former and current UF doctoral research assistants, respectively), and took more than a year to complete. The test program involved impacting each barge bow replicate with one of two large impact blocks (weighing approximately 9,500 pounds each). Early in the conceptual development of the experiments, it was decided that, rather than swinging a moving barge bow into a stationary representation of a bridge pier, a rigid impact block (a pier) would instead be swung at a stationary barge bow. The decision to swing the pier instead of the barge was based both on the improved quality of data that would be measured in this configuration and a variety of logistical reasons. Pre-test finite element simulations confirmed that swinging the pier into the barge would yield nearly identical force-deformation relationships to those that would have been obtained had the barge been swung into a pier. All tests were conducted using a high-energy impact pendulum (Figure 4-a) designed by the UF team during an earlier project and constructed at the FDOT Structures Research Center in Tallahassee, FL. The pendulum consists of three towers 50 ft. in height, to which an impact block is connected using steel support cables. One of the towers is used to pull the impact block to the desired drop height, while the other two towers support the block during the downward swinging motion. The two impact blocks used in this study—one with a round impact surface, and one with a flat (rectangular) impact surface—were dropped from heights ranging from 14-20 feet, resulting in impact speeds between 20-25 mph. Each block struck one of the two replicate barge bows four times (in sequence), producing up to 4 feet (Figure 4 b) of cumulative deformation at the 0.4 test scale (which would be equivalent to 10 ft. of deformation in a full size barge).

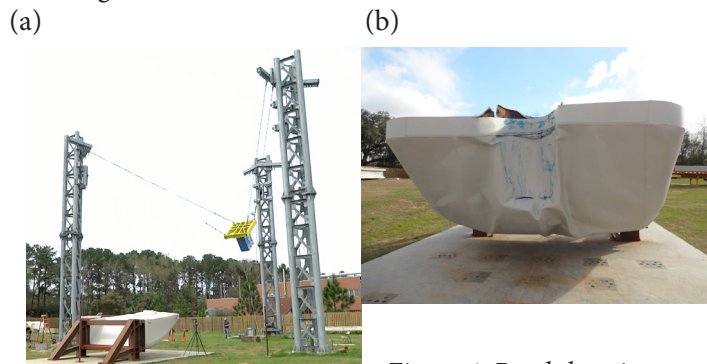


Figure 4. Pendulum impact testing (2014): a) impact block in raised position; b) final deformation pattern on barge replicate after four impacts with round impact block

Maximum impact forces determined experimentally from the round nose impact tests were significantly

smaller than those determined from the flat nose tests—a finding that is consistent with previous analytical studies. In order to validate finite element simulation techniques that were used in previous UF research (to develop the UF/FDOT impact load prediction model), the same techniques were used to build finite element models (Figure 5) of the reduced (0.4) scale replicate barge bows and the impact block used in the test program. These models contained over 150,000 shell and solid elements, and represented the physical impact conditions that were used in the pendulum impact experiments (for example, the specific impact speeds used during each test).

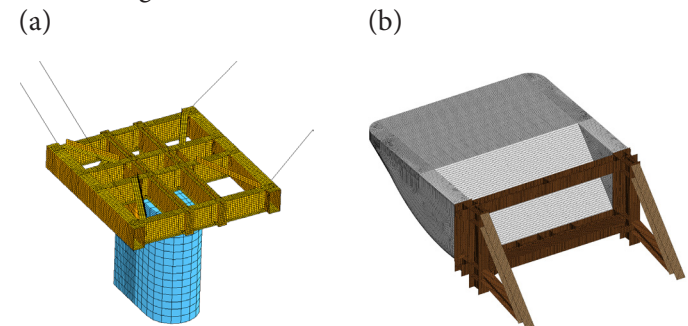


Figure 5. Finite element models of reduced (0.4) scale: a) round impact block (and hanger frame); b) replicate barge bow and reaction frame

Time-histories of impact force, as well as barge deformation patterns, obtained from the finite element analyses showed good correlation to those observed during the pendulum impact testing program (Figure 6), thus corroborating findings from previous analytical studies. Since the modeling techniques used to construct the 0.4 scale finite element models were validated by the reduced-scale tests, it may be concluded that, by extension, the results from the full-scale (1.0) finite element simulations are also valid. As a consequence, research products (e.g., the load prediction model) previously developed using full-scale finite element barge models, can be confidently employed.

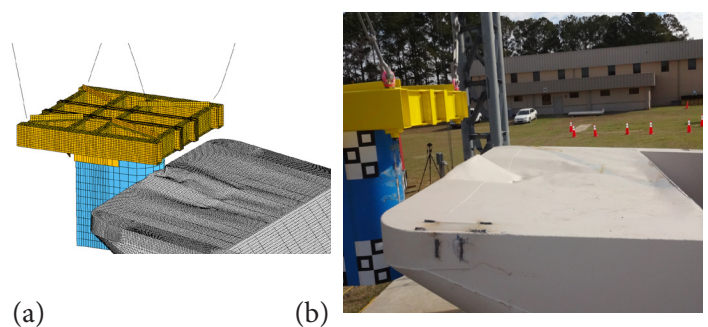


Figure 6. Deformation patterns on replicate barge bow after first impact with round block a) finite element simulation; b) pendulum impact experiment

Article and photos by Dr. Gary R. Consolazio and George Kantrales

UP IN THE AIR



View of Bogotá air pollution from the top of Monserrate mountain

Air pollution causes millions of deaths every year, but the sources are not always next-door. Air pollutants move freely through the air; they are not constrained by shores or political boundaries. This easy transport made early air pollution strategies easy: get the pollutants up and they will go “away.” As the global population grows, the definition of “away” becomes murky. Today, national air pollution regulations have been updated to include interstate. As the United States has reduced emissions of many pollutants, it has become more apparent that international sources affect us. More importantly, these international sources have dire consequences for their local citizens. Assistant Professor Barron Henderson’s research group is addressing global air pollution three ways: (1) characterizing international contribution to local pollution, (2) improving our understanding of processes that occur during pollutant transport, and (3) collaborating internationally to cleanup air pollution in Colombia. Understanding local air pollution requires accounting of local and international sources. For the United States, this means accounting emissions from our immediate neighbors (Mexico and Canada) as well as our more distant neighbors like China. Dr. Henderson and collaborators developed a database of international air pollution that impacts the United States. In addition, they developed a tool for connecting that database to models used to develop national regulations (doi:10.5194/gmd-7-339-2014). This system can be used to support national or regional modeling and it has been integrated into the United States EPA official modeling platform.

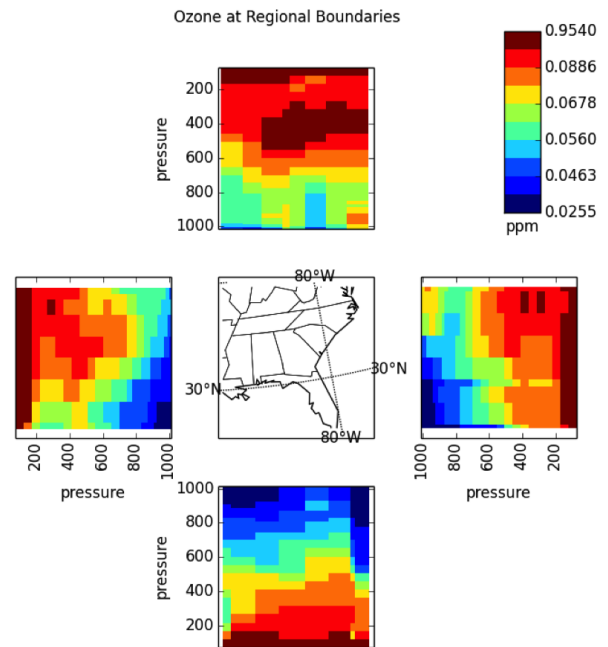
International pollutants can be rapidly transported to our national boundaries, but during that time they are constantly undergoing physical and chemical transformations. The most rapid transport occurs high in the air, between where we live and where airplanes fly, before returning to the earth’s surface. At these high altitudes, some of our models of the atmosphere require improvements. Dr. Henderson’s research has been improving the chemical and physical processes that control pollution. His group and collaborators are testing how updated chemistry (doi:10.5194/gmd-7-339-2014) changes the earth’s radiation balance, and investigating how chemicals interact with ice in clouds (doi: 10.1016/j.atmosenv.2013.12.041). The end goal is to improve our understanding of air pollution and its effects globally.

Dr. Henderson's group is also working to reduce air pollution in rapidly developing parts of Colombia. His group is collaborating with the Universidad de La Salle on a project funded by the Secretaría Distrital de Ambiente. The goal is to test and prioritize potential air pollution regulations in a model before implementing them in the real world. Reducing emissions requires a big initial investment and the complex atmosphere can lead to surprising outcomes. Vetting the regulations in a model (a process required in the United States) improves the return on investment. This ensures that public and private investments do the most good for human health and the environment. As a part of this project, Dr. Henderson and students (Colleen Baublitz and Robert Nedbor-Gross) have traveled to Bogotá to meet with collaborators and funders, and to experience the regional culture first hand.

Dr. Henderson's research helps to improve the global environment and improve human health. His research groups uses models to test atmospheric theories and provide scientific basis for national and international regulation. Closer to home, recent national regulations are likely to include Florida as a source for pollution in other states. Some air pollution from Florida must first be transported over the marine environment before impacting other states. Dr. Henderson and students are building a modeling platform to test our understanding of the chemical and physical transformations that occur during transport. As we better understand the connections between global emissions and health, we must constantly examine the depth of our knowledge.

Article and photos by Dr. Barron Henderson

Typical bus in Bogotá, Colombia



Ozone from global simulation for use in national or regional modeling

Dr. Henderson and collaborator Jorge Pachon at the Secretaría Distrital de Ambiente



The “Crestview Mix”: The Future of Airport Pavement

By: Virgil C. “Lee” Lewis, P.E.

The recent completion of the North Apron Rehabilitation project at Bob Sikes Airport in Crestview (FL) sets the groundwork for revolutionizing airport asphalt pavement construction as we know it. Through the use of a highly polymer-modified asphalt binder and reduced air voids, the project included the installation of a non-toxic, low-permeability asphalt that not only resists rutting and degradation, it also provides resistance to aircraft fuels and hydraulic fluids. This “Crestview Mix” was developed by AVCON, INC. of Okaloosa County in conjunction with national asphalt expert Dr. Robert Boyer, P.E. and represents the first fuel-resistant asphalt specification formalized for consideration as a federal standard.

Ordinarily, asphalt mixtures are highly susceptible to softening and rapid deterioration when exposed to aircraft fuels or oils. Asphalt binders—the dark liquid that “glues” the aggregate together—are a product of the crude oil refinement process. As a result, jet fuel, oils, and asphalt are chemically compatible and will readily mix with each other, causing degradation of the pavement surface. Exposure to fuel can quickly destroy the integrity of a good asphalt surface.

Careful monitoring of production and rolling operations ensured compliance with stringent acceptance criteria. “Now we have data and proof that fuel-resistant asphalt works,” notes Dr. Boyer. In April, Dr. Boyer was informed that the USAF has recently approved the specification for military use and will publish it shortly; the Federal Aviation Administration is expected to follow suit. He adds, “I believe this is the future of airport pavement.”



with PG64-22 Binder

with FR Binder

Example of fuel-soaked HMA Specimens. In fuel immersion tests, the mixture with PG64-22 binder lost approximately 10% weight, compared to less than 1.0% weight loss with the FR mixture.

Okaloosa County contracted with AVCON, INC. to design, bid, and administer the project. AVCON is a leading airport engineering and planning firm with expertise in airport pavements. “Obtaining good compaction with the stiffer mix was a concern, but the contractor was able to achieve excellent mat and joint densities in the initial test section and throughout the job,” states John Collins, Project Engineer for AVCON. “The higher-grade polymer binder and tight mix will give the airport a very durable apron pavement.”

Until the production and distribution of the binder material becomes more widespread, the pavement costs are anticipated to include a small premium over typical hot mix asphalt pavements (e.g. up to 10% increase in project costs). However, long-term maintenance benefits of the P-401-FR pavement are certain to reduce overall costs over the pavement life.

“We were fortunate to have the support of the Governor’s office, the State of Florida Aviation Office and the FDOT District 3 office in moving forward with this project,” states Tracy Stage, Airport Projects Manager for Okaloosa County Airports. “Their support gave us a unique opportunity to develop a new pavement design that will extend the pavement life and will set the standard for asphalt pavement construction on airport aprons. This is huge.”

Because of the economic importance of the activities occurring along the west side of Bob Sikes Airport, the project was a high priority for the State of Florida and Okaloosa County. “Our focus is to make certain our tenants have the infrastructure improvements necessary to succeed,” says Greg Donovan, Airports Director for Okaloosa County. “This project caps off \$20 million invested in 2011 at Bob Sikes Airport and is vital for meeting the infrastructure needs of our expanding aviation activities.”

With FAA and military officials evaluating the performance of this specification, the significance of the North Apron Rehabilitation project could ultimately extend much further than the Bob Sikes Airport activities it directly supports.

Virgil C. “Lee” Lewis, P.E. is a Principal with AVCON, INC., a leader in airport infrastructure engineering and planning.

Contact Lee at 850-678-0050 or VCLewis@AVCONINC.com.

Dr. Joe Delfino Retires



Dr. Joe Delfino (pictured above) retired from the University of Florida - Department of Environmental Engineering Sciences (EES) after a 32 year career. He served as EES Department Chair from January 1990 through August 1999, Interim Chair during 2002-2003, and Graduate Coordinator from 1990 to 2007. Previously, he served on the faculties of the University of Wisconsin at Madison and other institutions, including the U.S. Air Force Academy, where he was concurrently a Captain in the USAF. He was also a manager of an environmental consulting firm in the Chicago, IL area with emphasis on environmental impact studies. At UF, he taught courses in water quality analysis, instrumentation, water chemistry (equilibrium), water chemistry (organic), industrial ecology, environmental science, environmental engineering ethics, public health engineering and introduction to environmental engineering. He received eight J. J. McCreary Teacher of the Year Awards from the students in EES, most recently for the 2011-12 academic year. His research, funded by various federal and state agencies, focused on water quality chemistry including studies of the interaction of petroleum-derived fuels with water (e.g. oxygenated fuel additives such as MTBE), and the accumulation of mercury in Everglades soils. Additional studies included the distribution, fate and transport of toxic organic chemicals from hazardous waste sites to surface waters, and the aquatic chemistry of lead in an impacted wetland site. He has also guided studies on the chemistry of humic substances derived from Florida waters (including the use of stable isotopes to track carbon and nitrogen fluxes), the nature of organic matter in river sediments, the fate of carbamate pesticides in surface and ground waters, and the biodegradation of pentachlorophenol at a superfund site. Additional research involved the dissolution kinetics of explosive compounds, the fate of organic compounds and potential endocrine disruptors related to pulp mill processes, the uptake of carbon and nitrogen by shellfish in the Suwannee River Estuary, nitrates in ground water and surface waters with emphasis on the Suwannee and Santa Fe River watersheds, and water resources policy with emphasis on sustainable water supplies in Florida.

Throughout his professional career, his research has resulted in over 100 refereed publications as book chapters, peer reviewed journal articles, and co-authorship of a book with H.T. Odum and others titled *Heavy Metals in the Environment: Using Wetlands for their Removal*. He presented numerous papers and seminars at professional society meetings and universities, both nationally and internationally. His mentoring of graduate students includes several students at the University of Wisconsin and more than 100 students at the University of Florida. These graduates are employed in academia, consulting firms, and all levels of government including the military services. Several of his publications, mainly co-authored with his graduate students, have been highly cited in the scientific literature, with one in particular receiving more than 200 citations and several others with at least 100 citations. His professional activities included service to the American Chemical Society [the ACS Environmental Chemistry Division and the Florida Section], and the AWWA Committee that produces Standard Methods for the Examination of Water and Wastewater. Among his professional memberships were the Association of Environmental Engineering and Science Professors, the American Association for the Advancement of Sciences [elected Fellow], and the American Water Resources Association [elected Fellow]. He represented the University of Florida on the Board of Directors of the Universities Council on Water Resources and was elected as a "Friend" [Fellow equivalent] by UCOWR. He also served as Regional Vice President for North America of the Committee on Technology for the World Federation of Engineering Organizations. Further, he served on several NSF, USEPA and NOAA as well as Florida DEP technical peer review panels. Of note was his extensive contribution to faculty governance committees at the Universities of Florida and Wisconsin. He was the co-creator and chief technical advisor of The Florida Water Story, an award-winning two-hour documentary film that was produced by Courter Films and Associates for public television and originally aired state-wide on PBS stations in Florida managed through WEDU TV in Tampa, FL. He previously served on the City of Gainesville, FL Water Management Committee and the Alachua County FL Air Quality Commission and he recently concluded eight years of service as an Associate Editor for Water Quality Research for the Journal of the American Water Resources Association.

Joe's wife, Dotti, earned two degrees at UF and was a former Coordinator in various UF offices. She is a rare and fine book dealer and repair specialist based in Gainesville and served as President and now current member of the Board of Directors of the Florida Antiquarian Booksellers Association. They are parents of two adult children and enjoy four grandchildren who live some distance from Florida. Clearly, extensive travel is anticipated for visits to their family members as well as to enjoy additional travel since there will be more time available for such activity.

Written by Dr. James Heaney

FACULTY & STAFF ACHIEVEMENTS



Dr. Prevat: Launch of Trinidad and Tobago Icons in Science and Technology

NIHERST presented its publication of biographical profiles of the 17 Trinidad and Tobago scientists honored at its 2012 Awards for Excellence in Science and Technology. The book, which is the seventh volume in a series, highlights the achievements of Caribbean scientists who have been outstanding in their fields, working either in the region or internationally. Dr. Prevat was a recipient of this Excellence Award.

As an aside, Dr. Prevat was also interviewed on WeatherBrains, a podcast that focuses on weather, as an expert on wind and the impact of tornadoes.



Dr. David Kaplan invited to speak at Harvard University

Dr. David Kaplan traveled to Harvard University's Graduate School of Design to participate in a colloquium on the relationship between engineering, the environment, and landscapes. The panel explored the overlaps, conflicts, and potential synergies between natural and human-modified environments and included faculty from Harvard, Princeton, the University of British Columbia, and the University of Maryland, as well as practicing engineers and designers. Dr. Kaplan discussed his recent research showing the potential for greatly increasing regional water availability through changes to the way forested lands are managed.



Dr. Treavor Boyer receives UF Excellence Award for Assistant Professor, ASEE SE 2014 New Faculty Research Award and Promotion to Associate Professor

Dr. Treavor H. Boyer was awarded the 2013-2014 University of Florida Excellence Award for Assistant Professors. The selection committee members found that Dr. Boyer emerged as being uniquely worthy of this award out of all of those who were forwarded for consideration. Dr. Boyer also received a cash prize and certificate naming him as the 2014 New Faculty Research Award recipient of the ASEE Southeastern section. He has also been promoted to associate professor within the Department of Environmental Engineering Sciences. We are very fortunate to have him as part of our faculty!



Dr. Forrest Masters receives the 2014 IAWE Junior Award

Dr. Forrest Masters received the International Associates for Wind Engineering Junior Award for his contributions to the wind engineering community. The award ceremony will be held in Hamburg, Germany. This prestigious award is presented by the association to recognize contributions of a researcher under forty years old who made a record of outstanding achievement within the previous five-year period, in at least one of the following categories: (i) significant and original contribution to wind engineering research; (ii) applications to wind engineering practice; (iii) educational contributions in the field of wind engineering.

The Award Committee recommended Dr. Masters receive the award because of his many contributions to hurricane wind field monitoring and the development of wind-related testing.



Dr. Trey Hamilton was named 2014 PTI Fellow and received the 2013-2014 UF College of Engineering Mentoring Award

Dr. H.R. (Trey) Hamilton was named as one of the 2014 PTI (Post-Tensioning Institute) Fellow inductees who have made outstanding contributions to the production or use of post-tensioning and who have made significant contributions to the PTI committees. Dr. Hamilton also won the 2013-2014 UF College of Engineering Mentoring Award. This award is given to a faculty member who has been an outstanding and on-going mentor to other faculty. Trey's dedication and commitment to his colleagues is evidenced by his receipt of this award and there was no surprise to anyone when he was selected to receive it.

Nancy McIlrath awarded College of Engineering Professional Adviser of the Year Award

We are excited to announce that Nancy McIlrath has been selected as the 2013-2014 recipient of the College of Engineering Professional Adviser of the Year Award! This award recognizes excellence, innovation, and effectiveness in professional advising and comes with a cash award of \$2000. With a portion of this cash award, Nancy established the Graduate Pay-It-Forward fund to assist graduate students with travel and emergency situations that arise. Her goal is to raise \$30,000 by next summer to endow the fund for perpetual use. Those who have had the good fortune to meet and interact with Nancy are not at all surprised by her act of kindness.





Dr. Tom Sputo promoted to Master Lecturer

Congratulations to Mr. Tom Sputo! He was promoted to the rank of Master Lecturer and he has served the Department of Civil and Coastal Engineering for over 25 years.



Dr. Reynaldo Roque receives Doctoral Dissertation Advisor/Mentoring Award

Dr. Reynaldo Roque was named as the 2013-2014 recipient of the UF College of Engineering Doctoral Dissertation Advisor/ Mentoring Award! Congratulations on his wonderful achievement and all the help he has given to his students!

WHERE ARE THEY NOW? ESSIE ALUMNI

Brandon E. Ross



Dr. Brandon E. Ross graduated with his PhD from the Department of Civil and Coastal Engineering in 2012. He specialized in structural engineering under the supervision of Professor Trey Hamilton. After graduating from UF, he went directly to work at Clemson University where he is currently employed as an assistant professor. When asked, "What was

your most memorable moment at UF?" he stated, "having my PhD committee call me Dr. Ross. It was a great moment." He continues to collaborate with Dr. Hamilton and Dr. Gary Consolazio (his co-chair) and he feels that UF "prepared me well for my current position."

Forrest Masters



Dr. Forrest Masters is a Gator engineer through and through. He received his BSCE ('99), ME ('02) and PhD ('04) from the University of Florida. After receiving his PhD, Dr. Masters taught at Florida International University before returning to

his beloved UF to become an assistant professor. In just a few short years he has reached the rank of associate professor and continues to make his mark in the field of structural engineering within the hurricane research field. He has received the NSF Career Award and believes that UF created professional opportunities that helped shape his career. When asked about his most memorable moment at UF, Dr. Masters jokingly replies that there was "nothing that I could put in writing" – we believe he was referring to his undergraduate years! Forrest continues to be a superstar within the Department of Civil & Coastal Engineering working with industry to establish greater research opportunities to proactively improve those impacted by hurricane and wind devastation.

Robert Constanza



"G'day mate!" is something you may hear Dr. Robert Costanza say as he is a professor and chair of public policy at the Australian National University. Robert obtained his PhD in 1979 under the supervision of ecosystem ecology pioneer, Howard T. Odum, which is what brought him to the University of Florida.

He states that UF has impacted his career because the program "allowed me to transcend disciplinary boundaries and develop new fields, like ecological economics." Robert has had an amazing journey since graduating from UF. His research is highly cited and he has worked around the globe (Sweden, Washington DC, Vermont, Australia, New Zealand, China, Oregon, and Maryland to name a few). He serves on numerous editorial boards, has received two honorary doctoral degrees and has amassed a plethora of notable accomplishments, far too many to mention here. Robert's many successes embody what every Gator engineer strives for and seeks to achieve. We applaud him for carving this pathway for future generations of Gator engineers!

Darina Palacio



One of our most recent graduates is Dr. Darina Palacio. Darina graduated with an MS (2009) and a PhD in Environmental Engineering Sciences (2013). Darina's specialization was within the water resources/surface water hydrology area under the supervision of Dr. David Kaplan. Darina's journey since graduation came quickly as she was offered a part-time faculty position at her

alma mater (California State University) and found herself moving back to California a week after her graduation from UF. When asked, Darina states that she attended UF based on the reputation of the program and recommendations from faculty members that she met at various conferences of the National Society of Black Engineers. We have little doubt that this energetic and talented young woman will make a big splash in the field of hydrology.

WHERE ARE THEY NOW?

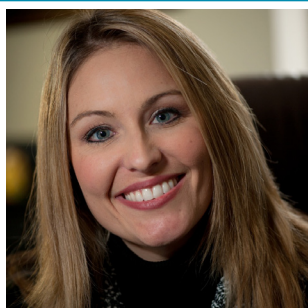
Bret Webb



Dr. Bret Webb chose to attend UF as many of his family members were also Gators. He completed all three of his degrees (BSCE- '01, MS- '04 & PhD - '08) in the UF Department of Civil and Coastal Engineering. However, Bret chose the Coastal & Oceanographic Engineering discipline once he completed his bachelor's degree. Bret is another one of our young mavericks making waves in the field of coastal engineering. In the last seven years, as an assistant professor at the University of South Alabama (USA), he has published over 15 papers, presented research at more than 45 conferences, and has secured over \$1M in externally-funded research projects. He is the lead principal investigator and developer of the South Alabama Jag Ski, a personal watercraft-based system for shallow water hydrographic data collection. During and following the 2010 Gulf Oil Spill he served as co-chair of a state-wide \$5M research program. Through his research activities at USA he has become a nationally-recognized leader in the design and use of living shorelines as alternatives to traditional shoreline armoring. He has also received several prestigious awards for his teaching and research at the University of South Alabama. Most

recently, some of his work on modeling the effects of climate change on storm surge and waves was adopted by and appears in the newly drafted National Climate Assessment to be released in 2014. This work has also been specifically addressed in cabinet-level speeches and a presidential address. His work on climate change, resilience, and vulnerability is also specifically mentioned in the President's Climate Action Plan. Bret's insights about how UF helped shape his career are summed up here - "Receiving your graduate degrees from the most well respected coastal engineering program in the US (if not the world) certainly set the tone for much of my career. There has long been a tremendous amount of respect and prestige affiliated with that specific degree program, and it has been evident traveling around the world and meeting other coastal engineers. Many people within the coastal engineering profession received their degree from UF and it is always somewhat of a reunion when that topic comes up when meeting someone for the first time. I feel that the reputation of the coastal engineering program at UF was certainly one thing that gave me instant professional credibility, but my academic preparation was also superb." We just learned that Dr. Webb has been promoted to associate professor at USA. Way to go Bret - we are Gator proud!

Jamie Padgett



Dr. Jamie Padgett (BSCE - 2003) states that "hurricane chasing" while working in Dr. Kurt Gurley's lab affected her future path tremendously and is an experience she will never forget. After graduating from UF, Jamie pursued her PhD in Civil Engineering at Georgia Tech. In 2007 she moved to

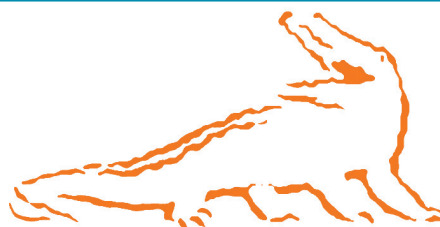
Houston to join the faculty at Rice University. She also married her high-school sweetheart (also a Gator alum) and now has a 18-month-old son named David. She continues to work with UF CCE stating, "I have ties with CCE faculty there, and enjoy interacting with them through conferences, the occasional visit to campus, or even research exchange and proposal development. The ties are mostly with Structures faculty, like Drs. Masters, Gurley, Prevatt, and Rice." Jamie selected UF because it is the best school in her home state of Florida. She states that, "Studying at UF definitely set me up for successful pursuit of grad school and academia. It gave me a solid background in civil engineering through the combination of coursework, interaction with faculty and bright students, access to facilities, and involvement in undergrad research. I also benefited from the diverse educational experiences offered at UF, including the Business Minor and Sales Engineering Certificate program that offered me complementary skills that I use on a regular basis as a faculty member."

Grady Carrick



Dr. Grady Carrick began his tenure within the Department of Civil and Coastal Engineering as a Master's student in 2006. He proceeded to matriculate into the PhD program and graduated with a specialization in transportation engineering in 2012. Grady worked full-time while in graduate school as a regional director

with the Florida Highway Patrol. He also got married during this time and fathered two sons so his study and research time were precious commodities. His notable accomplishment in the field was that he assisted the Federal Highway Administration (FHWA) with the implementation of a Traffic Incident Management training program for incident responders. Upon his graduation he transitioned from the public sector to an entrepreneurial venture forming Enforcement Engineering, Inc. When asked, "why did you select UF to complete your degree" Grady replied, "(It's) the best graduate transportation program in the state." He still collaborates with the faculty from the Transportation Engineering and Urban and Regional Planning programs.



Lance Gunderson



Dr. Lance Gunderson, who was supervised by Dr. Joe Delfino, studied systems ecology while completing his PhD at the University of Florida in 1992. Like Dr. Costanza, Lance selected UF because two of the most notable re-

searchers in the field of systems ecology were here – Drs. H.T. Odum and C.S. Holling. Lance's professional teaching career actually began in the Department of Zoology at UF. He is currently a professor in the Department of Environmental Sciences at Emory University where he was the founding chair of the department. Some of his notable accomplishments are: Editor in Chief, Ecology and Society; Fellow, Beijer Institute of Ecological Economics; Swedish Royal Academy of Sciences, Stockholm; and Chairman of the Board, Resilience Alliance. He cites that UF gave him "interdisciplinary training in wetland ecology and management, systems ecology which has been fundamental to my work since leaving UF"

Celalettin Ozdemir



Dr. Celalettin Ozdemir's journey at the University of Florida began within the Coastal Engineering program although he changed to the Civil Engineering program due to the nature of his research. He is currently employed with the Woods Hole

Oceanographic Institution (WHOI) as a postdoctoral Investigator and in August he will move to Louisiana to become an assistant professor at Louisiana State University with a joint appointment in the Department of Civil & Environmental Engineering and the Center for Computation and Technology. Celalettin states that he chose UF "because of the vibrant collaborative research activity and significant educational resources provided by the university. The quality of researchers that I worked with and also the faculty's willingness to help is extraordinary. I am always influenced by their quality and took them as my role models." He received his PhD in 2010.

Matthew Ohland



Since graduating from the University of Florida with his PhD in Civil Engineering in 1996, Dr. Matthew Ohland has certainly made his mark in the world of engineering education. He started as an assistant director of the Southeastern University Coalition for Engineering Education at UF, moved on to become an assistant professor at Clemson in 2000 and was tenured in 2005, and then he joined the School of Engineering Education at Purdue University in 2006. His notable accomplishments include: election to Fellow of the American Society for Engineering Education and IEEE; election to National President of Tau Beta Pi, the Engineering Honor Society (2002-2006); and authoring a textbook (Thinking Like an Engineer: An Active Learning Approach).

Matthew, who is now a leader in the field of engineering education, was provided the opportunity to study engineering education at UF as a formal discipline when there was little known about the field at the time. To this day, he continues to collaborate with key personnel within the UF College of Engineering in regards to his research.

Are you a Civil
Engineering Graduate?

You can join the
Civil Gators!

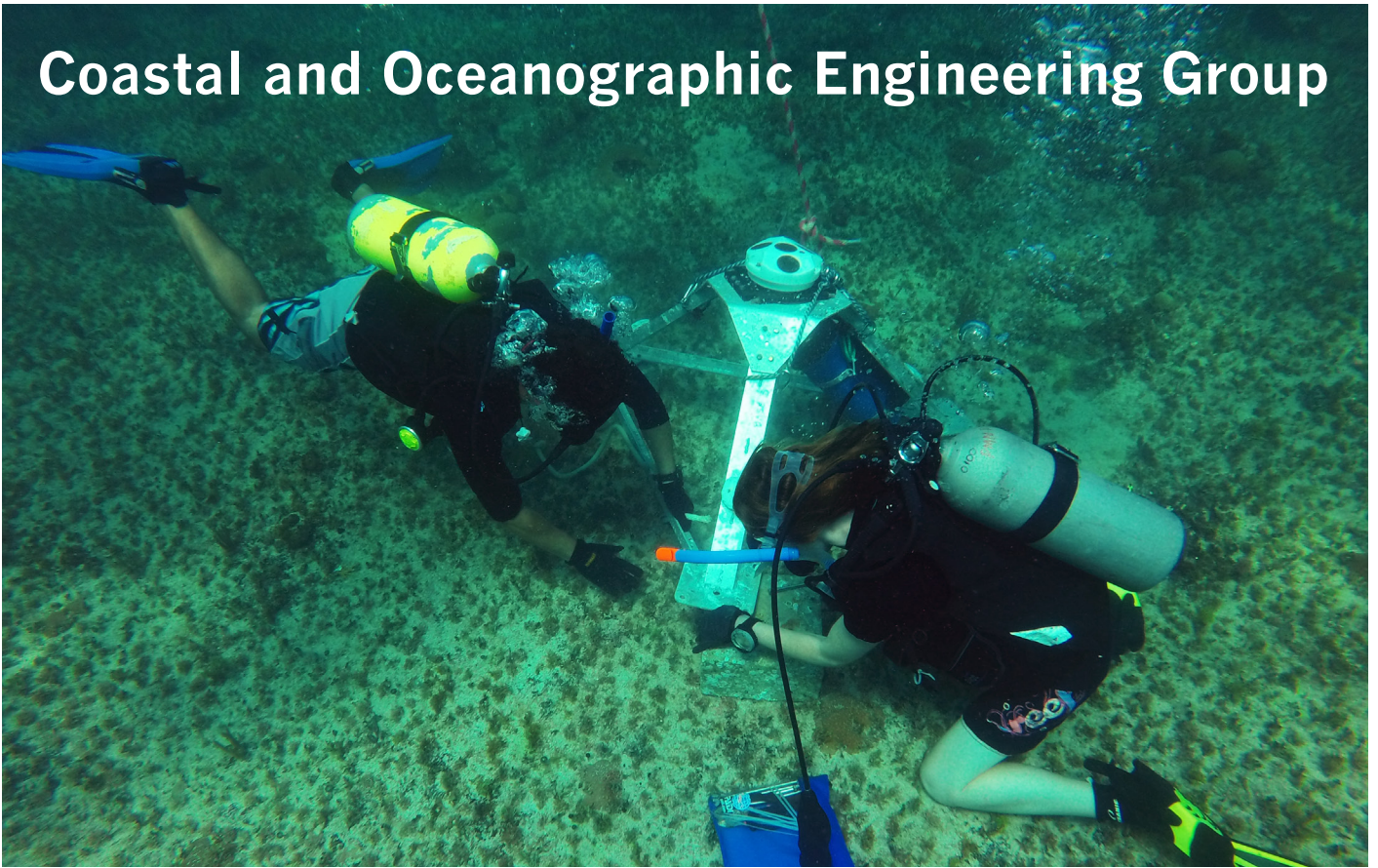
To find out more, visit:
www.civilgators.com

Alumni, are you looking for job
opportunities? Need assistance
in updating your resume? Want
help in job searching skills? You
still have access to many of the
services available at the Career
Resource Center!

Check their information at
www.crc.ufl.edu/alumni

Do you know of internship or
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

Coastal and Oceanographic Engineering Group



The 2014 spring semester was filled with classes, conferences, and fieldwork for the UF coastal and oceanographic engineering group. At the end of February, a group of students and faculty presented at the biannual Ocean Sciences Meeting (OSM) in Honolulu, Hawaii. Dr. Arnolando Valle-Levinson, Dr. Alex Shermet, Jackie Branyon, Tracey Staples, and Miao Tian promoted Gator coastal engineering with topics ranging from storm surge anomalies, to estuarine circulation, to sediment transport and nonlinear wave modeling. The quest for knowledge continued in March when the UF Water Institute Graduate Fellows (WIGF) cohort traveled to Puerto Morelos, Mexico to conduct a multidisciplinary field experiment as part of the NSF Coastal SEES project. The experiment spanned numerous disciplines including physical oceanography, hydrography, geochemistry, microbiology, ecology, and anthropology. Puerto Morelos is a coral reef lagoon that is hydraulically connected to the groundwater matrix through submarine groundwater (SGD) discharge via springs (point sources) and seepage (diffusive sources).

Gator coastal scientists, Dr. Valle-Levinson and Jackie Branyon worked with Universidad Nacional Autonoma de Mexico (UNAM) colleagues to deploy several ADCPs (Acoustic Doppler Current Profilers), ADVs (Acoustic Doppler Velocimeters), and CTDs (Conductivity, Temperature, Density devices) over the 2 week period. The data collected are being analyzed and demonstrate a fortnightly variation in SGD, which indicate a flow reversal at the springs during syzygy high tide. This realization indicates that the system is just at the threshold for saltwater intrusion, highlighting the significant threat sea level rise poses to future water resources. Another fieldwork expedition is planned to collect fortnightly data during the rainy season in September 2014 for a seasonal comparison.

Article and photos by Jackie Branyon

FEATURED STUDENTS

Cruz Ortiz and Kelly Landry awarded 2014 NSF Graduate Research Fellowship



Cruz Ortiz

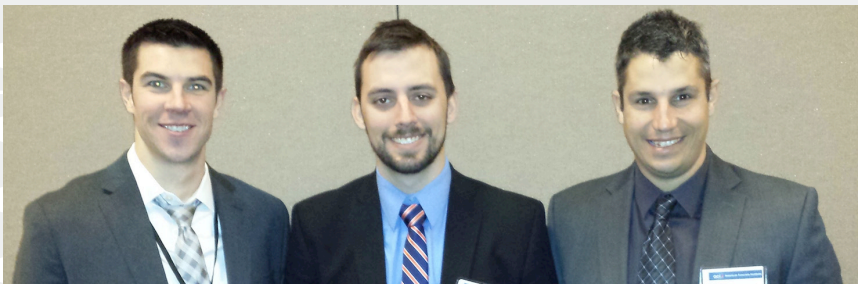


Kelly Landry

Please join us in congratulating Ms. Kelly Landry and Mr. Cruz Ortiz on being awarded the 2014 NSF Graduate Research Fellowship. Mr. Justin Roessler received an honorable mention for this award as well.

Cruz Ortiz also won 1st place in the 2014 Air and Waste Management Association's (A&WMA) Doctoral Student Poster Competition!

Jordan Nelson wins the 2013 NDT James Instruments Award for original research



Jordan Nelson, a recent graduate, won the 2013 NDT James Instruments Award for original research on nondestructive testing of concrete. The award was presented to Jordan at the Spring ACI Convention, held in Reno on March 23rd, 2014. Jordan's paper was entitled "Full-Field Visualization Techniques for High Density Ultrasound Measurements" and his research topic focused on the automated nondestructive testing for applied research and evaluation of structures (ANTARES), which was performed for the Florida Department of Transportation. Jordan recently received his M.E. degree in mechanical engineering from the University of Florida while working under Dr. Christopher Ferraro in ESSIE and Dr. Peter Ifju in Mechanical Engineering. The research performed for this project is a prime example of interdisciplinary research between the Civil and Mechanical Engineering Departments. (The picture above shows Mr. Nathan Rende of Wiss Janney Elstner Associates (left), Jordan (center) and his project advisor Christopher Ferraro (right)).

Hugo Sindelar and Stephanie Ishii received awards at FSAWWA

Hugo Sindelar and Stephanie Ishii were both given awards at the annual Fall Conference of the Florida Section of the American Water Works Association (FSAWWA), held in Orlando, Florida in December 2013.

Hugo Sindelar, a doctoral candidate under the mentorship of Dr. Treavor Boyer and Dr. Mark Brown, was awarded with the Roy Likins Scholarship. Hugo was selected based on a wide range of criteria, including academic performance, work experience, community and civic activities, honors, career goals, and recommendations. Hugo will be graduating with his PhD in Environmental Engineering in December 2013.

Stephanie Ishii was selected as the Young Professional of the Year based on her dissertation research, mentoring of K-12 students, and involvement with FSAWWA. Stephanie is a doctoral candidate under the mentorship of Dr. Treavor Boyer and she is expected to graduate with her PhD in May 2015.



EES PhD Student Nima Afshar-Mohajer received Marilyn Little Altrusa Scholarship

Nima Afshar-Mohajer, an EES PhD candidate, received the Marilyn Little Altrusa Scholarship. Among 32 students from 19 different countries, he was recognized as one of the two recipients of the scholarship awarded by the international committee of Altrusa International of Gainesville in March 2014. The International Committee of Altrusa International of Gainesville annually offers the Marilyn Little Scholarship to international students in their fourth year of undergraduate studies or in graduate school studies with a major of particular need in their home country. He was selected as an award winner due to his efforts regarding improvement of the air quality and control technologies for mitigating suspended aerosol from the atmosphere.

2013 Rainworks Competition

The US EPA announced its 2013 Rainworks Challenge winners on Earth Day in April 2014. EES students, Trace Fanara and Kelsie Timpe, were members of the University of Florida team. UF's team received first place in this year's competition which was a repeat performance from 2012...ESSIE says - "way to go team UF - go for three in a row!"

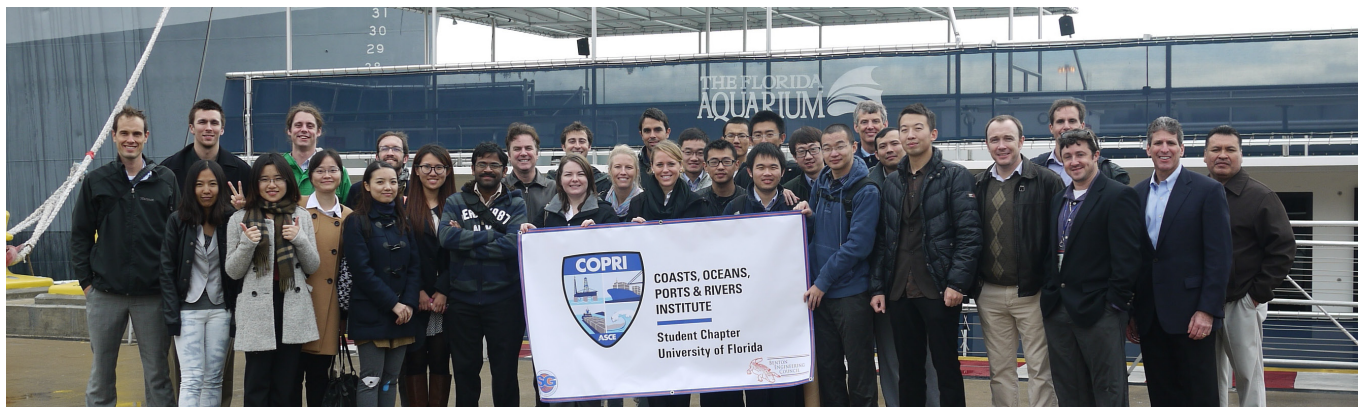


Kelsie Timpe



CCE PhD Student Natassia Brenkus Awarded PTI AMSYSCO Scholarship

Natassia Brenkus, a structural engineering PhD student working with Dr. Trey Hamilton, was awarded a graduate scholarship from the Post-Tensioning Institute in March 2014. The award recognizes the academic achievement and promise of an engineering student studying and/or researching post-tensioned concrete.



COASTS, OCEANS, PORTS & RIVERS INSTITUTE

**Student Chapter
University of Florida**

The Coasts Oceans Ports & Rivers Institute (COPRI) – “Gator Student Chapter” has remained active entering its second year and currently has 35 participating members. Over the course of the first 12 months, the UF COPRI student chapter kept a primary focus on professional development activities through attending conferences, hosting seminars, and arranging field trips. The UF chapter is primarily funded by the national American Society of Civil Engineers - COPRI and also receives funding locally as an active member of the Benton Engineering Council. Members attended the PORTS’13 conference in Seattle, WA last fall as well as the Florida Shore and

Beach Preservation Association – Beach Preservation Technology Conference in Hutchinson Island, FL this spring. UF COPRI hosts a weekly “Coastal Engineering Seminar Series” featuring speakers from industry, government, academia and also encourages students to present. In addition to the weekly seminar series, UF COPRI hosted two information sessions with Manson Construction and representatives from the Florida Board of Professional Engineers and traveled to Taylor Engineering in Jacksonville and Moffatt & Nichol in Tampa. These latter two sessions were in conjunction with field trips to both the Jacksonville Port Authority and the Tampa Port Authority. Additional field trips were taken to visit a Tetra Tech coastal engineering project in Fort Pierce, FL as well as a hydrographic survey company, Measutronics, in Lakeland, FL. UF COPRI is actively scheduling speakers for another seminar series for the upcoming fall semester and has scheduled field trips to the United States Geological Survey (USGS) in St. Petersburg, FL as well as the US Army Corps of Engineers (USACE) – Jacksonville, FL District. Please visit www.ufcopri.blogspot.com to stay up to date with the UF COPRI student chapter.

Article and photos by Uriah Gravois

Working Hard and Seeing Results: An ASCE Update



The UF Student Chapter of the American Society of Civil Engineers has been incredibly active this past spring semester with preparations for the 2014 Southeast Student Conference. They sent 64 students and 5 advisors to Tampa for the Conference in which they placed 1st overall, as well as in the Concrete Canoe and Steel Bridge competitions! Both the Concrete Canoe (Captain: Tyler Mokris) and Steel Bridge (Captains: Joseph Allen, Andrew DeAlba, and Sean Egan) teams had been hard at work preparing the design, fabrication and athletic portions of their competitions for over 8 months and their hard work truly paid off. They also placed 2nd in Balsa Pyramid and Mortar Cube and 3rd in Professional Paper. We are extremely proud of our teams and their hard work in preparation for competition and excited that our Concrete Canoe and Steel Bridge teams participated at the national competitions this summer! (See results on next page.)

In addition to preparing for competition, on April 4, UF ASCE sent 19 members to Orlando for a joint field trip with UCF and PUPR in which they toured several transportation and structures construction sites and visited the traffic management center there. Our Chapter has continued its dedication to the local Gainesville community through various service activities. A few of these activities have included weekly tutoring with Lincoln Middle School students, providing 25 students volunteers for the Family Engineering Night at Kimball Wiles Elementary and participating in Engineer’s Week in February in which they assisted elementary and middle school students in designing structures to mimic the “Angry Birds” game. (Read more information on pg. 19.)

For more information about the UF Chapter of ASCE, please see visit <http://www.gatorasce.com/> or send an inquiry to asce@ce.ufl.edu.

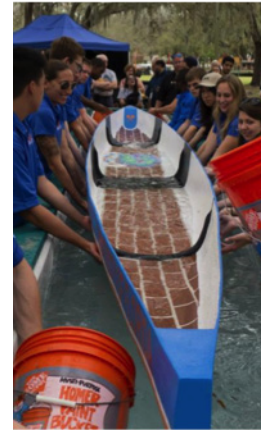
Prepared by Laurel Welch, Past President of UF American Society of Civil Engineers

ASCE Competition Update

National Steel Bridge Competition (May 2014)

The UF ASCE Steel Bridge Team qualified for the national competition by placing 1st in Steel Bridge at the regional ASCE Southeast Student Conference at the University of South Florida in Tampa on March 27-29, 2014. The competition has 5 technical aspects (Stiffness, Lightness, Construction Speed, Construction Economy, Structural Efficiency), and a Visual Display component (which is only used as a tiebreaker). The UF Steel Bridge Team put on a dominant performance at the regional as they swept to 1st place finishes in all 5 technical aspects and also earned 3rd place in Visual Display.

At the National Competition the team finished 4th overall, including a 3rd place in Stiffness and 2nd place in Structural Efficiency.



National Concrete Canoe Competition (June 2014)

The UF Concrete Canoe Team earned their spot in the National Competition by placing 1st in the Southeast Region (March 27-29). The Canoe Competition has four equally weighted aspects (Design Paper, Final Product, Oral Presentation, and Racing). The team won trophies in the following events at the Southeast Regional Conference Competition:

Design Paper: 1st

Final Product: 1st

Oral Presentation: 2nd

Women's Endurance: 1st (the only race completed - the other four races were canceled by thunderstorms)

At the National Competition, UF finished 12th out of the 24 teams participating. The team earned trophies in the following competitions:

Men's Endurance Race: 5th place

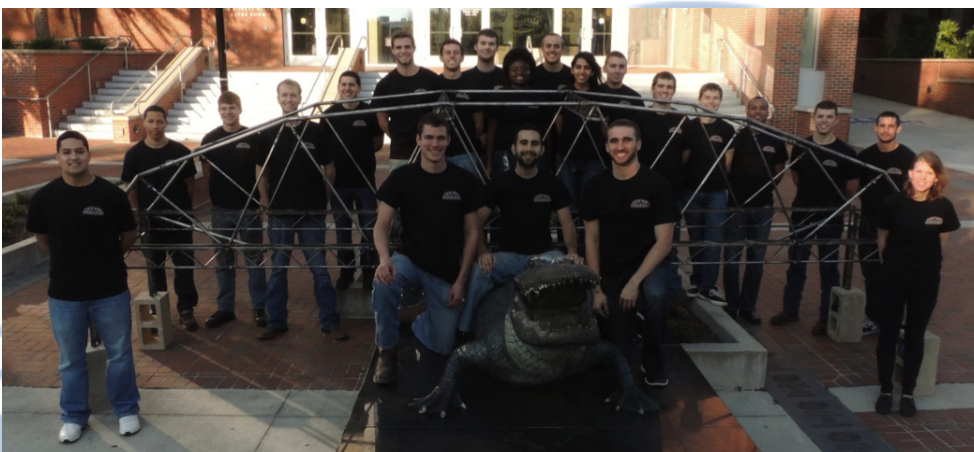
Women's Sprint Race: 2nd place

Coed Sprint Race: 1st place

The coed sprint team won the R. John Craig Memorial Award and their win marked the first-ever 1st place race finish by any UF Concrete Canoe team.



Concrete Canoe Team



Steel Bridge Competition Group



Family Engineering Night

The University of Florida Transportation Institute (UFTI) hosted an informal engineering education program, “Family Engineering Night,” on March 13 at Kimball Wiles Elementary School in Alachua County. Ninety-six families attended, with a total count of 158 children participating in the activities. The event, sponsored by the Southeastern Transportation Research, Innovation, Development and Education Center (STRIDE), actively engaged elementary-aged children and their families in fun, hands-on engineering activities. Engineers play an essential role in our designed world, yet many people are unaware of what engineers actually do. By showing interest and exploring engineering with their children, parents and other caregivers can positively influence a child’s attitude about engineering, as well as encourage their children to consider engineering as a possible career. Student chapter volunteers from the American Society of Civil Engineers (ASCE), the Institute of Transportation Engineers (ITE), and Women’s Transportation Seminar (WTS) assisted in providing this positive, fun experience for the attendees and their parents.

Article and photos by Leslie D. Washburn



More pictures and information can be found on Facebook - search for “South-eastern Transportation Research Center (STRIDE)”

ESSIE 2nd Annual Poster Symposium

As part of the ESSIE Graduate Student Recruitment Weekend events, the Air and Waste Management Association (AWMA) hosted its annual poster symposium on February 27, 2014. In previous years the event was only open to students within the Department of Environmental Engineering Sciences. For the past two years, the event was opened up to all ESSIE students and co-sponsored by ESSIE and AWMA. Twenty judges from industry participated and were able to select the top finalists (three from the graduate students and three from the undergraduate student submissions.) Below is a list of those students who were selected as the top three finalists (there was a tie in one category) at each program level:

Graduate:

- 1st Grant Weinkam
- 2nd Stephanie Ishii
- 3rd Kelly Landry

Undergraduate:

- 1st Daniella Saetta
- 2nd Joseph Marchionno
- 3rd Ashley Walsh
- 3rd Alexis Johnson

Thank you to our Sponsors and Judges!



Congratulations to all of the winners! We are proud to have each of you representing ESSIE in this capacity!

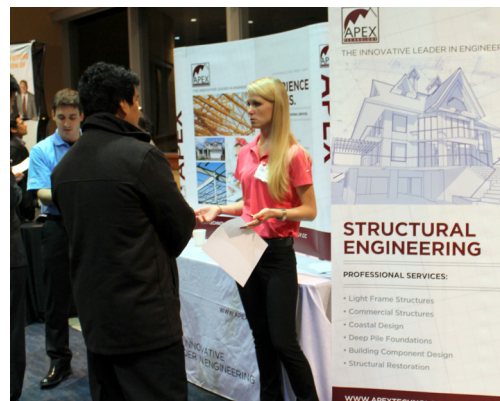
Spring 2014 ESSIE Annual Career Planning & Resume Workshop

The third annual ESSIE Career Planning and Resume Workshop was held on January 22, 2014. Almost 300 students attended the event. Students gathered to meet personnel from seventeen firms who have continuously supported ESSIE graduates. The students were able to interact directly with top industry leaders and learn more about specific career opportunities and internships in civil, coastal and environmental engineering sciences. All students are encouraged to attend to develop their networking skills and add to their contacts in the field. Freshman to PhD students participate in this event and the comments are overwhelmingly positive from year to year. This event combined both Department's (Civil & Coastal Engineering and Environmental Engineering Sciences) previous events to allow for those in industry with employment needs in both areas to participate. The School would like to thank the company participants and encourage others to participate in the event this coming year.



Below is the list of companies who participated in this year's event. We applaud their dedication to our students, ESSIE and the university and appreciate their support of this annual event.

Apex Technology
Ardaman & Associates, Inc.
Brown and Caldwell
Chen Moore & Associates
Condotte America, Inc.
DRMP, INC.
EAC Consulting, Inc.
FDOT
HNTB Corporation
Jacobs
Kimley-Horn and Associates, Inc.
Koogler and Associates, Inc.
Professional Service Industries, Inc. (PSI)
Protean Design Group, Inc.
Stantec
Tensar International Corporation
Wantman Group, Inc.





2014 ESSIE Graduation Event

The second annual ESSIE graduation celebration took place on Thursday, April 24, 2014. Over 260 students, faculty and staff gathered to bid our graduating class of 2014 farewell. We also announced the 2013-2014 award recipients for the Department of Environmental Engineering Sciences (EES) and the Department of Civil & Coastal Engineering (CCE). The award recipients are nominated by the students for most of the awards. The only ones that are nominated by the faculty are the academic-based awards. Here is a list of this year's award recipients:

Graduate Outstanding Service Leadership

Gordon H. Brown- EES
Miguel Lugo-Ortiz- CCE

Undergraduate Outstanding Service Leadership

Kathleen Marie Kirsch- EES
Andrew J. Schwarz- CCE

Graduate Outstanding Academic Award

Nima Afshar-Mohajer- EES
Lauren Ross- Coastal Engineering (CCE)
Fang He- Civil Engineering (CCE)

Undergraduate Outstanding Academic Award

Regina Rodriguez- EES
Arthiya Suksuwan- CCE

Teaching Assistant Award

Justin G. Clar- EES
Luis A. Avila- CCE

Faculty Mentor Research Award

Dr. Timothy G. Townsend- EES
Dr. David O. Prevatt- CCE

Special guest appearances were made by Albert and Alberta Gator. Students enjoyed taking photos with their favorite mascots, viewing works of art submitted by ESSIE students and faculty, and eventually dancing to the smooth sounds provided by our distinguished DJ (and PhD graduate), Dr. Justin Clar. It was a fun, festive evening that will be remembered for years to come!



Recent Publications

Hale, D., Antoniou, C., Brackstone, M., Michalaka, D., Moreno, A., and K. Parikh, "Comparison of Optimization Methods for Assisted Calibration of Traffic Micro-Simulation", First International Conference on Engineering & Applied Sciences Optimization, Kos Island, Greece, 2014.

Hale, D., Park, B., and A. Stevanovic, "Optimality Versus Run Time for Isolated Signalized Intersections", First International Conference on Engineering & Applied Sciences Optimization, Kos Island, Greece, 2014.

Heaney, J. 2014. Evolution of Urban Water Systems Analysis. Jour. of Water Res. Planning and Management, Vol. 140, No. 1.

Casasus AI, Gruss A, Baun David, Morales M, Mazyck D. Silica-Titanium Coated Packing: A Novel Solution Capable of 90% Hg Capture with Low O&M Costs. Journal of Environmental Engineering, Vol. 139(1): pp. 86-94, 2013.

Friedman, K., Heaney, J.P., and M. Morales. 2014. Process Evaluation of Residential Water Use and Population Served. Journal of American Water Works Association. (Accepted for publication).

Friedman, K., Heaney, J.P., Morales, M., and J. Palenchar. 2014. Estimation of Single Family Residential Irrigation Demand Management Effectiveness. Journal of American Water Works Association. (Accepted for publication).

Friedman, K., Heaney, J. Morales, M. and J. Palenchar. 2013. Predicting and Managing Residential Potable Irrigation Using Parcel Level Databases. Journal of American Water Works Association, Vol. 105, No. 7.

Moreno, A., Llorca, C., Bessa Jr., J., Garcia, A., and D. Hale, "Evaluation of Traffic Performance Measures in Two-Lane Highway Passing Zones using TWOPAS", 11th Transport Engineering Conference CIT 2014, Santander, Spain, 2014.

Morales, M., Heaney, J., Friedman, K. and J. Martin. 2013. Parcel-level model of water and energy end use. Jour. American Water Works Assn., Vol. 105, No. 8.

Afshar-Mohajer, N.; Wu, C.-Y. and Sorloaica-Hickman, N. (2014). "Design of an Electrostatic Lunar Dust Repeller for Mitigating Dust Deposition and Evaluation of its Removal Efficiency", Journal of Aerosol Science, Vol. 69, No. 12, pp. 21-31. DOI: 10.1016/j.jaerosci.2013.11.005

Afshar-Mohajer, N.; Thakker, Y., Wu, C.-Y. and Sorloaica-Hickman, N. (2014). "Influence of Back Electrostatic Field on Collection Efficiency of an Electrostatic Lunar Dust Collector", International Journal of Aerosol and Air Quality Research, Vol. 14, No. 4

CIVIL & COASTAL ENGINEERING GRADUATES

Ph.D.	Derwood C. Sheppard Jr.	Suresh Babu	Adeeba A. Raheem	Johnathon R. Hardy	Yamai X. Yi
Spring 2013	Stephen D. Shortridge II	Carolyn Eastwood	Andy Tao	Stanley Evan Henderson	Summer 2013
Kimberly Dawn Arnott	Zhi W. Yang	Chong Yik Melvin Goh	Jovan Tatar	Sean A. Hicks	Chelsea Kaye Downs
Patrick A. Bekoe	Qi Zhao	Duncan Greer	Maria U. Van Houten	Borhan Jaber	Fall 2013
Sudheesh Thiyya Kkandi	Summer 2013	Zachary S. Harper	Jose M. Vela	Norman H. Jeter	Whitney N. Anderson
Summer 2013	Kile W. Alford	Haixia Hu	Ximing Wang	Sina Keshavarz Joud	Ei M. Aung
Sevcn Agdas	Bartley Ely Arrington	Georgios Ioannidis	Benjamin E. Watts	Stephanie Alexis Kinlen	Jacques Benhamu Brief
Tu Anh Do	Bruce J. Balsinde	Tanvi S. Jaywant	Kan Wu	Andrew Marc Kline	Philip L. Brannon
Daniel J. Getter	Geza F. Bankuty	Oh Hoon Kwon	Fei Xue	Alexi N. Lambert	Danielle Nicole Brisson
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Sangdon So	James L. Brown	Roosheb Nowrouzian	Yu Zhang	James Jennings Lloyd	LaToya Shuntaye Carter
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Craig Robert Dixon	Lawrence D. Delk	Yehya Shakeel Siddiqui	Jaime Luis Albino III	Kyle S. Mays	Patrick Blas Dancel
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ME	Travis R. Allen	Yunxiao Yang	Jonathan M. Brush	Xavier Jarrod Monroe	Dario A. Gerszuny
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Hugo I. Altimari	Natassia Rae Brenkus	Lei Zhang	Bruno Giovanni	William F. Murray	Amy R. Hodgson
Elorriaga	Kevin Michael Cann	Hao Zheng	Chiappe	Matthew R. Nance	Shelby N. Hughes
Andrew J. Byrd	Ricardo A. Cevallos	Leqi Zhu	Marlo A. Chumioque	James Nguyen	Cody Thomas Johnson
Melissa Deschamps	Loaiza	Summer 2013	Andrea Nicole Conedera	Leon David Paredes	Richard R. Johnson
Craig Robert Dixon	Andrew W. Duncanson	Sai Jiang	Nicola R. Cowap	Jesse J. Parrish IV	Sharmela Raju
Gabriel Duque	George A. Fernandez	Dhawal Nashikkar	Pedro Jose Crespi	Richard Jacob Pick	Khemlani
Jospeph Alexander	David H. Guttenplan	Fall 2013	Bradley J. Davis	Rachael Oliver Powlas	Timothy Evan
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Ravindra P. Ramgulum	Muhammad Ali	Xuebing Liu	Garrett Michael George	Jianyun Wang	
Aaron J. Ripple	Rahul Balagurvaiya	Justin Martinez	Eric M. Grant	Robert E. Wechsler	

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Spring 2013	Spring 2013	Eric Thomas Morgan	Melissa K. Hallas	Susan M. Knepper	Dollman
Amy M. Borello	Kathy Fitzpatrick	Jeremy A. O'neal	Shilpa Shrotriya	Kelly Ann Landry	Mark C. Dowst Jr.
Hao Zhang	Sandra K. Gaynor	Hugo R. Sindelar	Summer 2013	Shannon Julie Leicht	Karalyn J. Edquist
Summer 2013	Caitlin M. Gross	Melanie Ann Straub	Kelley A. Dyer	Jane Alexis Nappi	Jahnvi D. Harris
Brian Eduardo Damit	Katrina Anne Indarawis	Fall 2013	Fall 2013	Michael Vincent Taasan	Lindsey T. Koren
Katherine Y. Deliz	Mohammad N. Khairy	Christopher F. Beaubien	Alexander S. Gulde	Kelsie A. Timpe	Courtney Kay Marshall
Quinonez	Max J. Krause	Gregory A. Brenner	Wesley D. Hogan	Christopher D. Tobiere	Ryan T. Tordella
Katrina Anne Indarawis	Veronica L. Llanaez	Tyler D. Bridges	Matt Powers	Laurence Andrew	Alyssa M. Wharton
Julianne McLaughlin	Gabriel A. Maul	Meghan K. Donovan	Bachelor's	Vincent III	Jake N. Yap
Christopher Rokicki	Pedro A. Palomino	Stephanie E. Hanses	Spring 2013	Christine Nicole Vrabic	Nicholas Yonezawa
Jun Wang	Seth W. Tournay	William F. Huffman	Barbara J. Araneda	Ryan M. Walker	
Min Zhong	Matthew D. Tribby	Julie R. Midgette	Zachary Even Black	Summer 2013	
Fall 2013	David Vincent Willems	Amanda M. O'donnell	Nicholas M. Brown	Wendell Jay Stainsby	
Kenneth R. Friedman	Hao Zhang	Wesley N. Oehmig Jr.	Jordan I. Capeloto	Yatit A. Thakker	
Sheldon Adrian Gale	Summer 2013	Daniel V. Smith	Vincent S. Caputo	Fall 2013	
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Lin Shou	Charles T. Carton	Spring 2013	Chandler	Adam John Blythe	
Hugo R. Sindelar	Evan C. Ged	Lisa E. Eckert	Katie Lynn Cribbs	Trisha L. de Torres	
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