INDUSTRIAL & SYSTEMS ENGINEERING

ISE NEWS

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UF ISE: Saluting our Military with Long-Term Support

UF | UNIVERSITY of FLORIDA

CHAIRMAN'S COLUMN

Dear Alumni and Friends,

It seems that every time I have the opportunity to write this column, some good news has come our way. You may be aware that President Bernie Machen has agreed to stay at the helm of the University of Florida, with the Governor's backing, with a renewed goal of making UF a Top Ten university. To back his commitment, the Governor has asked the Legislature to direct $15 million to UF (in addition to our normal annual allocation) and the Provost has suggested that this will be used to fund new faculty lines. The Governor has also asked for $100 million to be made available for capital projects and it is expected that UF will pursue a new chemistry building and potentially another building project in engineering. Of course, this is all subject to Legislature debate, but we are confident that there is good economic news on the horizon.

We are excited about the possibility of additional faculty lines in ISE due to rising enrollments. Our total student enrollment is roughly 850, with 600 at the undergraduate level, 200 master's students and about 50 doctoral students. We are currently in the midst of a faculty search and will update you on our progress in the future.

Despite our swelling enrollments, our graduates continue to do extremely well in the job market. We graduated 42 students from our undergraduate program in the fall. Based on an 83% response rate to my inquiries, 77% were headed to industry and 9% to graduate school with 14% still looking three months after graduation. General Electric was the leading employer, hiring five students, followed by three with Eaton and two with Accenture. Unfortunately, it has been harder for our foreign national students, especially undergraduates, to secure employment.

U.S. News and World Report released its new rankings for graduate programs a short time ago. Last year at this time, I talked about the excitement of our Top 10 ranking. We retained our Top 10 ranking among public institutions (ranked 9th) but slid slightly to 13th overall. I was pleased that our score increased to 3.7, its highest value ever. This score is the average of assessments from our peer institutions which assign a value between 1 and 5, with higher preferred. It should be noted that this year represented a significant change in the rankings, as "Systems" programs were included with Industrial/Manufacturing programs. This led to an increase of 15 programs to be considered in the rankings (91 in total now) such that schools including MIT, Virginia, and the Naval Postgraduate School, are now considered.

Speaking of the Navy, this newsletter is dedicated to our military. The state of Florida is home to a number of military bases, including the Panhandle, which houses the Navy in Pensacola and Panama City and the Air Force at Eglin, Hurlburt and Tyndall Air Force Bases; to the great Navy presence in Jacksonville; to the Air Force and CENTCOM at MacDill Air Force Base in Tampa; to the Navy's presence with its Warfare Center in Orlando and Partrick Air Force Base by Cape Canaveral; and to the Navy's presence in Miami and Key West. Finally, not far from Gainesville, the Army operates out of Camp Blanding.

The ISE Department has a history of serving the military. Directly, we have taught courses in the Panhandle for decades, most notably to provide a Systems Engineering curriculum to the Air Force at Eglin Air Force Base. On campus, we routinely graduate students into military leadership positions, often after they complete ROTC training. We have also placed a number of graduates into civilian posts for the military, such as analysts for NAVAIR or NAVSEA. In this issue, we feature stories of a student ROTC participant, alumnus fighter pilot, an alumnus civilian working for the Navy, and an alumnus Army reservist.

Our partnership is also prevalent through our support of military contractors. Florida is home to a number of sites for these companies, such as General Dynamics, Harris Corporation, Lockheed Martin, Northrop Grumman, Raytheon, Rockwell Collins and others. Lockheed Martin has been the top hirer of ISE graduates over the past five years, providing opportunities in Ocala, Orlando and Marietta, Georgia.

Finally, our Department receives significant funding from the Department of Defense (DOD). Professors J. Cole Smith and Stan Uryasev are currently funded by the Air Force Office of Scientific Research while Professors Yongpei Guan, George Lan, and Smith are funded by the Office of Naval Research. Professors Vladimir Boginski, Panos Pardalos and Smith also have funding from DTRA, the Defense Threat Reduction Agency of the DOD. Dr. Boginski oversees the DOOR, or Defense Oriented Operations Research, Lab which works closely with the Air Force Research Lab at the REEF (UF Research and Education Extension Facility) in the Panhandle. Recently, Dr. Smith was named the Director of FINS, the Florida Institute of National Security, a College of Engineering initiative to promote our work in this area. You can read more about FINS here, too. So please enjoy these insights as we honor those that serve and protect our country.

In closing, it is always good to hear from you. Please drop me a note if you have an update or are interested in supporting the Department in some fashion (352-392-1464 ext. 0, hartman@ise.ufl.edu). I do hope our paths may cross during your or my travels.

GO GATORS!

Sincerely,

Joseph C. Hartman
Professor and Chair

FACULTY UPDATES


Ravi Ahuja


Elif Akçali


Sherman Bai


Vladimir Boginski


Joe Geunes


Yongpel Guan


Joe Hartman


Serdar Kirli


Guanghui (George) Lan


Peter Momcilovic


Toi Lawphongpanich


Panos Pardalos


Jean-Philippe Richard


J. Cole Smith


R. Keith Stanfill


Suleyman Tufekçi


Stan Uryasev

Ravi Ahuja continues to grow his company, Innovative Scheduling, in Gainesville. Their client list includes major railroads throughout the world as well as a variety of trucking companies.

Elif Akçali was a featured speaker at the 2013 CASE Kickoff Event with Tzveta Kassabova, Visiting Assistant Professor, School of Theatre and Dance, of a program entitled "Search: Algorithms and Dance." CASE features science research posters, art exhibits, film, and a variety of performances.

Sherman Bai organized a conference on financial engineering in the Fall of 2012 at Zhengzhou University in Henan, China.

Vladimir Boginski continues to study the design of robust networks with funding from the Air Force and DoD through his Young Investigator Award from the Defense Threat Reduction Agency.

Joe Geunes recently published two papers in *Mathematical Programming*. He is working on a variety of grants dealing with logistics planning problems supported by CSX, FDACS, Crowley, and the USDOT. In addition, the 16th offering of OEM was launched with 58 students in August at a new UF facility in the Lake Nona area of Orlando.

Yongpei Guan is serving as guest editor for a special issue entitled "Optimization Methods for Smart Grid Problems" for *IEEE Transactions on Smart Grid*.

Joe Hartman concluded eight years as Editor of *The Engineering Economist*, stepping down in December of 2012. The Institute of Industrial Engineers presented him with the Wellington Award for his work in the field of engineering economy.

Serdar Kirli is advising the first senior design project with Herren Associates of Washington, D.C. He continues to teach the decision-support systems courses in the department.

Guanghui (George) Lan won the CAREER Award from the National Science Foundation for his proposal "Reduced-order Methods for Big Data Challenges in Nonlinear and Stochastic Optimization." This is the highest award for young investigators from NSF. He and his student, Saeed Ghadimi, also won the JFIG paper competition from INFORMS in the Fall.

Peter Momcilovic continues to build ties with the Medical School as well as advising senior design project teams working with the U.S. Navy Bureau of Medicine and Surgery in Jacksonville..

Toi Lawphongpanich and Yafeng Yin of Civil and Coastal Engineering are studying how to alleviate congestion on Florida roads with a FDOT grant. Toi is also serving as a guest editor of a special issue of the *European Journal on Transportation and Logistics* on pricing in transportation networks.

Panos Pardalos recently hosted two conferences in Gainesville involving dynamics of information systems and computational biomedicine as well as one in Italy on learning and optimization. He also published two monographs: *Data Correcting Algorithms in Combinatorial Optimization*, with Boris Goldengorin, and *Robust Data Mining* with Petros Xanthopoulos and Theodore B. Trafalis. He also received an award from Catania University in Italy and delivered invited talks at the AAAS meeting in Boston and at the University of Toronto.

Jean-Philippe Richard has been reaching out to Williams Elementary students over the last few years to teach them about Industrial Engineering, including talking about the traveling salesman problem (using a wood board with pegs and some string and letting students compete to find the best tour) and assembly lines, using Legos and timing to see which configuration works best.

J. Cole Smith has been named the inaugural Director of FINS, the Florida Institute for National Security. He and George Lan were also awarded a grant from the Office of Naval Research for their proposal "Dynamic and Adaptive Sensor Operations Under Uncertainty." Smith also has funding from the Air Force Office of Scientific Research, the Defense Threat Reduction Agency and the National Science Foundation.

R. Keith Stanfill continues to oversee the highly successful Integrated Product and Process Design (IPPD) program at UF. See http://www.ippd.ufl.edu for more information if your company is interested in participating.

Suleyman Tufekçi is advising a senior design team that is supporting an IPPD project for a new start-up company – the first collaboration between IPPD and senior design. The product detects leaks in packaging specifically in the food industry.

Stan Uryasev has teamed with Raphael Haftka of Mechanical and Aerospace Engineering and **R. Tyrrell Rockafellar** to study engineering design through the proposal, "Design and Redesign of Engineering Systems: Uncertainty and Tradeoffs between Performance and Development Costs," with support from the Air Force Office of Scientific Research.

Atkins Prepares for Service with ISE and NROTC

The Reserve Officer Training Corps provides a mechanism for training future leaders of the United States Armed Forces. The University of Florida is home to Naval (NROTC), which prepares candidates for both the Navy and Marine Corps, Army (AROTC) and Air Force (AFROTC) units.

ISE Senior, Clayton Atkins, is currently a member of the Navy ROTC unit at Florida. "I applied for the NROTC Scholarship my senior year of high school after much encouragement from a family friend who was currently enrolled in the program at UF," he explained. "She convinced me that the experiences and challenges would provide me with a better post-college career, especially considering the naval career available upon graduation." His uncle also had a naval career after attending the Naval Academy, further providing encouragement. This encouragement trumped the fact that his brother was attending Florida State.

Surprisingly, engineers are the most popular major for those in ROTC. Atkins started in Mechanical Engineering, but lacked interest in the classes and quickly switched to ISE. He found the ability to incorporate business courses into the curriculum appealing.

Outside of the traditional coursework for the ISE bachelor's degree, the scholarship requires active participation within the NROTC Unit. This may be through various leadership roles or billet positions such as Company Commander or Community Service Coordinator, and requires a two-block "drill" period on Tuesdays and Thursdays where the midshipman and Officers/Staff meet to carry-out the plan of the day including uniform inspections, briefs, athletic events or various types of other training exercises.

In addition to these meetings, classes are taken every semester that educate the midshipmen on various military training, naval history, sea navigation, weapon systems, leadership and ethics. These classes count towards the student's overall grade-point-average and are required for commissioning, but they generally do not count toward degree requirements.

The physical training schedule currently has midshipmen meeting Monday, Wednesday and sometimes Friday mornings at 6 a.m. The location varies as for each designated workout that is outlined in the "Plan of the Week." This plan describes each day's event as well as the watch standing order for each week and is updated/approved by the Unit Staff.

Given the time commitment, it is clearly not a trivial task to pursue with engineering. "I would have to admit that there may be more difficulty in being a part of ROTC in addition to engineering, but it only motivates you to try harder," said Atkins. "The challenges definitely exist and require you to rise to the occasion. There are many students who chose to drop the program after a year."

Atkins feels the extra work has been worth it. "There are many lessons that I have learned while in this program that I may not have learned elsewhere, such as my leadership and ethics skills, my knowledge and exposure to world events and my understanding of the importance of responsibility," he said. "I've had my trials and tribulations throughout this experience and recognize the value of learning from them now, rather than later on when potential lives may be at stake."

Upon graduation, Atkins will head to the Naval Air Station at Pensacola, Florida to begin training as a Naval Flight Officer (commonly referred to as a navigator in flight), although final assignments are still pending and there is a chance that he can still become a pilot. This selection requires 6 – 8 years of service (twice the normal) due to the additional training. This training requires three months of Aviation Preflight Indoctrination, six months of primary training and then further training in a chosen specialization.

Songer Puts Skills to Use in Cockpit and Classroom

Despite encouraging parents, Billy Songer (BS IE 1981) was not a motivated student through high school. He attended Miami-Dade Community College and started to apply himself. "Being the youngest of eight children of a father who never had the opportunity to even finish high school and who preached the value of education, I came to the realization that he was right," said Songer.

In exploring career options, he joined the Air Force Reserve Officer Training Core (AFROTC) after a former F-4 fighter pilot said "it beats working for a living." He immediately transferred to the University of Miami with the 3-year scholarship. However, he was not happy with the Engineering program, so he transferred to UF.

"I decided on Industrial Engineering as my mother was a secretary in Miami for Eastern Airlines' Industrial Engineering Department. I met some of the engineers for whom she worked and thought that I would really enjoy the work that they did," he said. This provided plenty of motivation.

He stayed active in ROTC at UF but did not start flying until his senior year—a Cessna 152 at Gainesville Regional Airport in the fall of 1980. He graduated in 1981 and headed for Air Force Pilot Training at Laughlin Air Force Base (AFB) in Del Rio, Texas. After graduation, the Air Force kept him on as a T-37 instructor pilot. This was the start of a fruitful career both as a pilot and educator.

Since that initial time as an instructor, Songer has been an instructor of pilots or a trainer of instructors all over the world for the T-37, T-38 and F-16. "Teaching gives me a great sense of achievement and I feel honored to help these young men and women gain the knowledge and skills required to fly high-performance aircraft," said Songer. In addition to a variety of stints in America (Texas, New Mexico, Arizona and Georgia), he has served in numerous locations in Asia.

For example, in 1989, he was assigned to the 13th Fighter Squadron at Misawa Air Base in Japan and then (1992) a pilot and instructor for the 36th Fighter Squadron at Osan Air Base in Korea. Later in his career (2000), he supervised Operations, Maintenance and Logisitcs as Director of Operations of the 497th Combat Training Squadron in Singapore, overseeing COMMANDO SLING, a joint exercise with the Singapore Air Force. While stationed in Singapore, he was deployed to Korat Air Base in Thailand on two occasions to help supervise Exercise COPE TIGER, the largest multinational fighter training exercise in Asia. He also served briefly in Port-au-Prince, Haiti with the Army's 10th Mountain Division as the Deputy Director of the Multi-National Force Plans & Policy (J5) Directorate in support of Operation UPHOLD DEMOCRACY.

"Although I worked extremely hard in all of my F-16 assignments, I can hardly call flying that aircraft 'work,'" said Songer of his favorite jet aircraft. "It was a wondrous and challenging experience!"

In addition to the pilot and instructor roles, he spent significant time at Eglin AFB in Shalimar, Florida testing systems for the new F-35 fighter jet. He served in a variety of roles, such as the Air-to-Air Missile Test Manager, Chief of Air-to-Ground Conventional Munitions Test Manager, Member of Aircrew Systems Advisory Panel for Avionics Development, and finally Chief of Air-to-Ground Munitions Test.

Because of his fighter experience and Industrial Engineering degree, he was selected to be one of the two Air Force fighter pilots to serve on the Aircrew Systems Advisory Panel for Avionics Development of the new F-35 Fighter. The role called for travel to the various competing manufacturers of this next-generation fighter (Lockheed in Fort Worth, McDonnel Douglas in St Louis, Boeing in Seattle and Northrop Grumman in Los Angeles) to "fly" their prototype simulator in future mission scenarios and provide feedback on the hardware layout and software displays. "The challenge was providing the pilot accurate and pertinent data about potential ground and air threats without overwhelming him," explained Songer. "This was and still is a large challenge as there is now the capability to provide information from innumerable on- and off-board sources."

Songer took advantage of the lighter schedule (pilots traditionally work 12-hour days while he typically worked 8-hour days at Eglin) to pursue his M.S. in Aeronautical Science from Embry-Riddle. "I would have much rather worked toward an Engineering Master's through the University of Florida," he confessed, but it would have taken too long. The degree further enabled his eventual promotion to Lieutenant Colonel, his rank at retirement from the Air Force.

After his stint at Eglin and in F-35 development, he returned to instructor duties in 1996 as the Director of Operations of the 84th and 85th Flying Training Squadron at Laughlin AFB, the Air Force's largest flying squadron at the time. The group had 130 Instructor Pilots, 105 T-37 aircraft and flew 200 flights a day, compiling 48,000 flying hours per year. The squadron received the Air Education and Training Command's "Top Operations Squadron" for 1998. His duties entailed directing and supervising the primary training of nearly one third of the US Air Force's pilots. "Industrial Engineering well prepared me," explained Songer, "for the routine required crafting of solutions to the many impediments brought on by personnel, weather or maintenance problems."

In 2003, he again returned to the states as an instructor to teach new T-6 instructor pilots at Randolph AFB in San Antonio. "What could possibly be better than to teach something you find extremely challenging and rewarding to highly motivated students?" replied Songer when asked about his role as a teacher. "I am now teaching the next generation of pilots who will be defending our great way of life here in the United States." His love of his work is clearly reflected in his *13* "Favorite T-6 Simulator Instructor" awards received from student pilot classes over the last five years.

While an Instructor Pilot at Laughlin in 1985, he met and married his wife Sandra (pictured with their two sons in Osan). Their older son, Scott, is an Air Force Captain and an Air Force Developmental Engineer. He studied Electrical Engineering at the University of Texas - San Antonio and will graduate this month from the Air Force Institute of Technology in Dayton, OH with a Masters Degree in Systems Engineering focusing on the Autonomous Control of Unmanned Aerial Vehicles. Their younger son, Brad, is at Mississippi State studying Industrial Maintenance Technology.

Songer retired from active duty in 2007 but is still engaged in teaching flying as a T-6 Texan II Simulator Instructor for Lear Siegler Services in Columbus, Mississippi.

While many would not consider a degree in Industrial and Systems Engineering ideal for a career in the Air Force, Songer disagrees. "Industrial Engineering was an outstanding choice," he explained. "It trained me to think logically and to always pursue and find better ways to accomplish all types of tasks, from employing the F-16 to helping develop the avionics of the F-35 to teaching new student pilots."

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Many people strive to help others at one point in their careers. Rudy Santacroce, PE (BS ISE 1992, MS AS 1999) is able to do this for multiple people and two simultaneous careers.

Santacroce holds the position of Director of Management Engineering at Shands Healthcare, and is an officer in the United States Army. His current military position is Chief, Strategic and Operational Plans for United States Southern Command where he translates national level policies and guidance into joint, multi-national engineering planning considerations for Central and South America and the Caribbean. He also advises joint staff on engineering capabilities for U.S. and foreign services in anticipation of and response to crisis events. He was selected for promotion to the rank of LTC in Sept 2012, and will move to a new assignment for United States Central Command at MacDill Air Force Base in Tampa.

At Shands, the department he manages is comprised entirely of ISE majors, many with graduate degrees in Industrial Engineering, Engineering Management, and business. The entire department provides an invaluable resource to the hospital. Reporting directly to the Chief Operating Officer, the team focuses on increased resource utilization, productivity, value-added analysis, facility design, simulation, and quality improvement; all of which are key skills for ISEs. The department provides recommendations based on data and analytics to enhance executive decision making. They have a great track record of contributing millions of dollars annually through cost savings, cost avoidance, and revenue enhancement recommendations.

In response to the demands of his work with the significant amount of architectural facility design and renovation projects at Shands, Mr. Santacroce pursued a Master of Science in Architectural Studies from UF.

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Being able to understand the language of architecture and understand how buildings come together was very valuable. His thesis was "Industrial Engineers in Architectural Practice: A Collaborative Effort Between Architects and Industrial Engineers in Architectural Design." He found tremendous value applying ISE tools during each phase of the architectural design process from concept/schematic design through construction administration to enhance the entire process and eliminate re-work and over/under design. This ultimately provides the client with a building that is optimized, flows well, and functions as intended.

While in college, his decisions to pursue a career as an ISE and an Army officer happened almost simultaneously during the third year of his undergraduate studies. "At the time I really didn't connect the dots to understand what a tremendous complement both career paths were for each other, but as I grew more experienced as an ISE professional and Army Engineer officer I was able to take significant aspects from each profession and apply them to the other," said Santacroce. He decided in his junior year to join the Army ROTC, at almost the same time that he declared ISE as his major. Originally, he intended to become an Aerospace Engineer, but after two years in the program, it became evident that what he really wanted was a career that involved the technical aspects of engineering combined with leadership, interpersonal skills, and business practices. Industrial Engineering was the right fit. He sought out an internship at Shands Hospital and really enjoyed management consulting and the types of projects the ISE team did; "I was hooked," he summarized.

His military career began during his undergraduate studies when he was awarded an Army ROTC scholarship. "My father, a Korean War veteran, was at first, against me joining the Army. But I convinced him this was the right road for me to take and quite honestly it was one of the best decisions I've ever made," reflected Santacroce. This year marks 20 years of service—a true milestone. He decided to serve our country as an Army Reserve officer because he wanted to have a civilian career as an Industrial Engineer. "The experience I received as a young Army officer really benefited my engineering career and gave me a sense of perspective and confidence when making recommendations to senior executives at work."

Santacroce's joint application of industrial and systems engineering with officer training culminated during his time serving in Iraq at the Corps level as a strategic planner. With the help of two of his colleagues, he developed an advanced Monte-Carlo simulation model as a key planning tool in developing the strategic timeline for the drawdown of military forces and the closure of bases and infrastructure throughout Iraq. "Without a doubt, the longer I stay active in my military career, the more useful and applicable my ISE skill set is to the work I do," he said. "Upon returning from Iraq in 2009, I've sought out challenging military jobs where I could use my ISE tools. My most recent assignment was the Chief of Engineer Plans for United States Southern Command's Engineering Directorate in Miami, FL." Having an ISE skill set is invaluable, especially for projects involving large-scale logistics operations, resource planning, and course of action analysis.

He enjoys the challenges and the new perspectives for resolving complex problems that are presented in the military. "Today's military employs smart, talented people," explained Santacroce. "I enjoy the environment, camaraderie, and personalities of those whom which I serve; I look forward to continuing my service." He was honored for his service during Operation Iraqi Freedom 2008-2009 with the Bronze Star for meritorious service in a combat zone and the De Fleury Medal for rendering significant service and support to an element of the Engineer Regiment. "I am honored to receive both awards but because the De Fleury Medal is specific to only Engineer Officers and is very rare to receive, it holds special meaning for me."

The U.S. military is undergoing significant changes right now…from the drawdown of forces in Afghanistan and a downsized standing military to new challenges facing our nation both from abroad and within the military structure at home. "Change is everywhere so my advice is to remain flexible and open-minded," Santacroce explains for future ISEs. "As a young engineer, my mentor once said, 'change brings both danger and opportunity.' We are facing so much change as a nation and it is up to us to see the opportunities our ISE skills bring to facilitate change management. There has never been a better time to be an Industrial Engineer."

Dunlap at Home in Military Town of Jacksonville

There are a lot of ways in which civilians support our military and security efforts in the United States. Scores of our graduates have gone on to work for defense contractors such as Lockheed Martin and Northrop Grumman. Others work for the military as civilian contractors. One such contractor is Donald Dunlap (BS ISE 1984) who currently serves as Director, Engines for the Fleet Readiness Center, Southeast (FRCSE) (Engines Division Director) at the Naval Air Station in Jacksonville, Florida.

This was an easy career choice for Dunlap, who moved to Jacksonville after a brief stint with Eastern Airlines in south Florida after graduation. "I was a DOD Co-op student while at UF, so I had lots of familiarity with the Department of Defense and civil service," said Dunlap. Jacksonville is also his hometown.

The co-op position truly cemented his choice of studies. "I always knew I wanted to be an Engineer and while in my first year on Co-op assignment I fell in love with Industrial Engineering," said Dunlap. "It fit my personality."

In his current position, Dunlap is responsible for managing the overall cost, schedule and quality of the products produced from the Industrial Engine Repair Division. His team consists of 330 people of various trade skills and backgrounds for repairing, machining, assembling, measuring and testing components, accessories, engine modules, and entire engines for a variety of Navy aircraft. These include the F-18, P-3, H-60, A-10 and EA-6B aircraft.

Dunlap started in the facility as a Process Engineer and after 8 years, was promoted to a Branch Head position in the Process Engineering Branch. In this position, he was the team lead for an implementation of MRPII throughout FRCSE. This successful project propelled him into NAVAIRs Senior Executive Management Development Program. He then transferred into Industrial Quality Assurance as a Division Director and eventually was assigned as the Industrial Component Repair Division Deputy. Two years later, he was promoted into his current position.

Current funding challenges have caused his organization to look harder at costs. "The Continuing Resolution and Sequestration are a huge challenge for the country, the command, the business, the people and me personally," said Dunlap. "We have had, and are planning for, workload reductions, hiring freezes, and furloughs for the rest of the fiscal year."

"As a maintenance and repair organization, this has caused us to focus more on being cost-wise, agile and efficient," said Dunlap. "We focus on continuous improvement through Lean/Six Sigma principles." He admits that the future looks leaner, where the FRCSE will continue to provide service at the lowest cost.

They have had to cut overtime, expenditures and reduce throughput. However, they always keep the war fighter in mind in all that they do. "Test pilots work at FRCSE to test fly our finished products and we receive many visits from our active duty customers," said Dunlap. "This provides tremendous motivation and dedication to doing our job and doing it right." His group has a high percentage of ex-military personnel, only adding to the motivation and pride of the team.

grants

Since 2006, the ISE department has received over $4.2 million in funding from the Department of Defense. The grants are listed below.

Lan, Guanghui and Smith, Jonathan Cole. Dynamic and Adaptive Sensor Operations Under Uncertainty. US Navy 2013-2015

Boginskiy, Vladimir. AFRL/RW and UF-DOOR Partnership in Network Science. US Air Force 2012- 2015

Haftka, Raphael, Rockafellar, Ralph, and Uryasev, Stanislav. Design and Redesign of Engineering Systems: Uncertainty and Tradeoff between Performance and Development Costs. US Air Force 2012-2015

Smith, Jonathan Cole. Analysis and Algorithms for Imperfect Sensor Deployment and Operations. US Air Force 2012-2015

Rockafellar, Ralph and Uryasev, Stanislav. New Developments in Uncertainty: Linking Risk Management, Reliability, Statistics and Stochastic Optimization. US Air Force 2011-2014

Guan, Yongpei. Multistage Formulations and Solution Methods for Mixed Integer Programming Under Uncertainty. US Navy 2010-2014

Pardalos, Panagote and Smith, Jonathan Cole. Mathematical Approaches to WMD Defense and Vulnerability Assessments on Dynamic Networks. Defense Threat Reduction Agency. 2010-2014

Pardalos, Panagote. A Dynamic Data Driven Cognitive Control Architecture for Exploration. US Air Force 2013-2014

Boginskiy, Vladimir. New Robustness Characteristics and Phase Transition Problems For Complex Networks in Dynamic and Uncertain Environments. Defense Threat Reduction Agency. 2009-2013

Boginskiy, Vladimir. Reliability of Complex Networks Under Uncertainty. US Air Force 2011-2012

Boginskiy, Vladimir and Pardalos, Panagote. Equipment for DoD-Funded Large-Scale Analysis and Network Optimization Projects at the University of Florida. US Department of Defense 2010-2012

Pardalos, Panagote and Uryasev, Stanislav. Tracking and Jamming Communication Networks in Anti-Access Environments. US Air Force 2008-2010

Smith, Jonathan Cole. Variable Expansion Techniques for Decomposable Optimization Problems. US Air Force 2008-2010

Hearn, Donald. IPA Assignment for Dr. Donald Hearn. US Air Force 2007-2010

Boginskiy, Vladimir. Dynamic Sensor Networks under Risk and Robustness Considerations. US Air Force 2009-2010

Pardalos, Panagote. Human Supervision of Time Critical Control Systems. US Air Force 2009-2010

Boginskiy, Vladimir. Design of Sensor Networks. US Air Force 2008-2009

Uryasev, Stanislav. Engineering & Risk Control Optimization: A Conference. US Air Force 2008-2009

US Air Force

US Navy

Smith to Lead New National Security Institute for College

Over the past few years, the College of Engineering at the University of Florida has launched several interdisciplinary institutes, which are designed to facilitate research and education in several strategic areas outlined by the college. Some of the previously established institutes focus on cell engineering and regenerative medicine, sustainable energy, autonomous systems, computational engineering, and nanoscience. The most recent institute supported by the college is the Florida Institute for National Security (FINS). Dr. Cole Smith, Professor of Industrial and Systems Engineering (ISE), has recently been appointed by Dean Cammy Abernathy as the first director of FINS. Dr. Smith has collaboration experience with the Department of Defense (DoD), has published various research journal articles contributing new methods and theory in the support of national-security related topics, and is currently supported by funding from the Air Force Office of Scientific Research, the Defense Threat Reduction Agency, the Office of Naval Research, and the National Science Foundation.

FINS is dedicated to providing a unique research and education consortium for University of Florida students and faculty in the College of Engineering. FINS houses security-related research arising across different engineering settings, and encompasses both theoretical and applied studies. Therefore, the institute relies on involvement across several different departments within the college in order to leverage the considerable strength of our existing research programs in the national security field, and for FINS to promote further development in the field. Students that focus in the FINS program will take classes across several departments that introduce them to the mathematics and the applications that are critical to exploring cutting-edge security research problems.

National security is, in fact, quite prevalent in many different engineering areas. Several departments within the College of Engineering at the University of Florida conduct research projects that intersect with the FINS mission. Some traditional research areas that fit under the FINS umbrella include, for instance, cybersecurity, sensor development and deployment, nuclear materials interdiction, infrastructure security, transportation systems, and control mechanisms for autonomous vehicles. Emerging areas of research, such as social network analysis as applied to the detection of terrorist cells, are also of primary interest to the FINS community. These research areas need not deal with military settings, per se, but may instead examine the development of infrastructure that is robust to natural disasters or accidental disruptions.

FINS will soon be recruiting many research experts across the College of Engineering along with selected prominent University of Florida researchers in other colleges. The primary research mission of FINS will then be to assemble research teams that collaborate on complex engineering problems via the exploration of complementary facets of these problems. This institute also provides a setting in which researchers having different backgrounds can determine common themes within their research programs, identify emerging challenges in security-related engineering applications, and address these problems together using state-of-the-art approaches.

ISE researchers have a specific expertise on identifying system designs that most effectively deploy limited resources, and this knowledge will form a critical component of the FINS research portfolio. As such, FINS will emphasize foundational mathematics and computational research that tie together seemingly disparate fields of research. For instance, consider the situation arising in securing heavily populated centers. Sensor technology is needed to search for potential threats (e.g., radiation signatures) and to work in varying environments. Mathematical techniques are required to optimally deploy these sensors to effectively work in a coordinated manner with overlaid physical networks (such as transportation, communication, and electricity networks). High-fidelity simulations are also required to model civilian behaviors in emergency situations. FINS researchers work in an integrated manner to work on facets of such complex problems, and to design systems that work in harmony to reduce threats from natural disasters or intentional disruptions.

This year, FINS will, for the first time, receive nominations for prestigious fellowship awards that can be used to recruit elite domestic Ph.D. students to the College of Engineering. These students will be committed to working in the field of national security for their dissertation, and will be exposed to some of the most compelling and sophisticated challenges that we face today. This unparalleled exposure to real-world problems is enabled by the access that FINS personnel will have to world-class researchers working on problems funded by the DoD, Department of Energy, and National Science Foundation, among other sources. This institute will bring together local researchers for informal research seminars, and will host multiple seminars from external experts in the field of national security engineering.

Ultimately, FINS students will benefit from the long-term relationships that the College of Engineering has built with DoD employers to both enhance the quality of research pursued by the FINS group at Florida, and to give FINS students prime exposure to employment opportunities within the national security sector.


Mario Padron


Barbaros Tansel


Carlos del Sol

Alumni Updates

The Department expresses its condolences to the families of Dr. Mario Padron (PhD '69) and Dr. Barbaros Tansel (MS '76, PhD '79).

Dr. Padron passed away in February of this year. He was the first Ph.D. graduate of the Department. He is survived by his wife and three daughters.

Dr. Tansel passed away in January of this year. He was the former Department Chair of Industrial Engineering at Bilkent University in Ankara, Turkey. He is survived by his wife and daughter.

David Thomas (BS '71, MS '72) has been appointed to the University of Florida Board of Trustees.

Carlos del Sol (BS '72) has been named Chair of the University of Florida College of Engineering Dean's Advisory Board.

Scott Ellyson (BS '93) delivered the Gregory Lecture in December of 2012 to students in the Sales Engineering Seminar. He is the CEO of East West Manufacturing in Atlanta, GA.

Altannar Chinchuluun (MS '04, PhD '07) was given the title of State Laureate by the President of Mongolia, Ts. Elbegdorj.

Mike Fant (BS '09) is now an Associate Attorney at Waller, Lansden, Dortch and Davis. He graduated from the University of Florida Levin College of Law in 2012.

Michelle Guadagna (BS '09) has a new position for the Carnival Corporation as a Business Analyst, Strategic Projects. She was previously with Citrix Systems.

Greg DiNardo (BS '10) is now a Sales Engineer at ABCO Refrigeration Supply Corp. He was previously with Trane.

The online LinkedIn Group for UF Industrial and Systems Engineering Alumni has over 750 members. If you are not a member, join today at www.linkedin.com

IPPD

Miller and Milch Named 2013 Superior Accomplishment Award Winners

On February 20, IPPD Program Assistant Maureen Milch and IPPD IT Expert Norman Miller were recognized as 2013 Superior Accomplishment Award winners. The UF Superior Accomplishment Awards are a way for UF to recognize faculty and staff who contribute outstanding and meritorious service in their fields, as well as those who have made exceptional contributions to UF's efficiency, economy, or to the quality of life provided to students and employees. Maureen was recognized as a Division Three (Office of Academic Affairs) Clerical/Office Support Superior Accomplishment Award winner. Norman was recognized as a Division 3 Scientific/Technical Superior Accomplishment Award winner.

Keith Stanfill, IPPD Director, nominated both Maureen and Norm for this prestigious award. "I am very fortunate to have such dedicated and effective staff members to help me run and grow the IPPD program," said Stanfill. Milch's job is to handle the preparation of all the proposals and budgets for each project, process and track project- and program-related travel and procurement of materials and services, hire and manage part time help, and support the teaching mission of the IPPD program. Her support of the IPPD teaching mission is particularly noteworthy. The IPPD program prepares students for professional practice. To accomplish this, the program utilizes industry best practices for product and process design, provides facilities that promote research and development work, and encourages professionalism throughout the program's activities. "Maureen constantly works to improve the positive impact the IPPD program can have on the professional development of our students," said Stanfill.

Miller serves as the System Administrator for the IPPD Program. His duties include procuring, configuring, and maintaining servers and workstations used by project teams in the IPPD program. He also manages a number of public and private IPPD websites, including providing firewall and spam filtering appliances, LAN and wireless networking solutions, and redundant/failover storage systems. Over the past six years, the program has invested in development of secure web applications to help recruit and manage IPPD students and projects. These applications include the apply.ippd.ufl.edu portal created to manage the process of students applying to the IPPD program, and a second portal, called my.ippd.ufl.edu used to manage students, coaches, sponsors and projects. Keeping the IPPD custom web applications current with server upgrades, and adding needed features is a constant struggle.

In these tough budgetary times, Miller provided a shining example of selflessness and ingenuity by upgrading the apply.ippd.ufl.edu portal after the original developers graduated, saving a project $5000 in outsourced development cost. His *esprit de corps* and hard work is an important part of keeping the IPPD Program successful, and, as College of Engineering Dean Cammy Abernathy often says, "the crown jewel of the undergraduate engineering program."

UF UNIVERSITY of FLORIDA

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FALL, 2012 GRADUATES

THE DEPARTMENT conferred 42 undergraduate and 24 graduate (M.S. and M.E.) degrees in the fall of 2012. Our graduates continue to be in great demand. According to the information gathered from exit surveys, 77 percent of our undergraduate students have already accepted jobs in industry, with employers such as the Eaton Corporation, GE, Procter & Gamble, Microsoft, Accenture, Cameron International, Kisinger Campo & Associates, Team International, Barclays, Nielsen, and Deloitte Consulting. Another nine percent were headed to graduate school.

Additionally, Sibel Sonuc, advised by Dr. J. Cole Smith, completed her Ph.D. She is currently an adjunct professor at the University of Central Florida.

B.S. in Industrial and Systems Engineering

Argov, Daniel Jacob
Barboza, Humberto Jose
Benhamu, Jose Abraham
Brown, Jaquelyn Marie
Daly, Victor Daniel
Devlin, Aaron
Elderdice, Laura A.
Farooqui, Zareen
Friere, Veronica Lisse
Gomes, Ronny Joaquin
Gwyn, Rachel Marie
Hernandez, Devin M.
Hockenberry, Samantha
Jean-Baptiste, Woudlin
Kirwan, Kyle J.
Liu, Christopher W.
Lopez, Melissa
Mor, Yoav
Moreno, Katherine
Morgan, Brittany R.
Neumayer, Federico
Oliva, Giovanni M.
Oxilien, Jennifer S.
Pabon, Nelson
Parsons, Devon R.
Perreault, Robert
Quezada, Jose Javier
Rodriguez, Juan C.
Sanchez, Juan Pablo
Serota, Richard M.
Shapiro, Adam D.
Shaw, Thomas J.
Silvagni, Sofia
Taylor, Solomon A.
Van Zanten, Yasmin S.
Waronicki, Matthew
Wasala, Laura French
Whalen, Megan Amanda
Wiggins, Jasmine K.
Williams, Robert O.
Zapata, Jennifher
Zoghbi, Nadim

M.S./M.E. in Industrial and Systems Engineering

Adka, Rashmi Jitendr
Aka, Stephanie M.
Armstrong, Jeremy N.
Arnould, Matthieu P.
Bahtiyar, Huseyin
Carrillo, Rene N.
Catron, Travis L.
Chen, Szu-Ying
Cooley, Candace P.
Farshi, Shahrzad
Fowler, April M.
Freisthler, Beth K.
Gao, Jingqi
Leidel, Robert W.
Lo, Yan-Fu
Ma, Jing
Mathews, Kendall A.
Moiseeva, Svetlana
Narasimhan, Balaji
Pena, Maria A.
Qint, Rui
Taylor, Amanda Marie
Wang, Qianfan
Yue, Xiaofei

ALUMNI ROLL CALL

Robert Bacchus (BS ISE 1987)
Paul Brown (BS ISE 1984)
Randall Deane (BIE 1963)
Stephanie Ellenberg (BS ISE 1990)
Susan Lin (BS ISE 1998)
Coleman McClain (BS ISE 2011)
Robert McClure (BS ISE 1993)
Chris Seibert (BS ISE 1992)
Jo Smith (BS ISE 2009)
Oliver Vagner (BS ISE 1996, MS ISE 2004)
Carl Williams (BS ISE 1984)