

2011
Annual Report



USF
UNIVERSITY OF
SOUTH FLORIDA
COLLEGE OF ENGINEERING

2011-2012 Overview



Dean John Wiencek

I am pleased to provide this annual review to faculty and administrators. This review builds upon last year's annual report and the College of Engineering's Strategic Plan. Our collegiate vision is to be considered a peer among engineering programs at notable public research institutions (see strategic plan for the list). Our strategic plan, which seeks to realize this vision, contains three major goals:

- 1. Ensure academic and future professional success for our students.*
- 2. Achieve and sustain national recognition in focused areas of research.*
- 3. Establish essential operational infrastructure to achieve the College's vision.*

Three new Department Chairs were appointed this year: Manjriker Gunaratne, Civil and Environmental Engineering, replacing retiring chair, Bill Carpenter; Tapas Das, Industrial and Management Systems Engineering, replacing Jose Zayas-Castro (now Associate Dean of Research) and Tom Weller, Electrical Engineering, replacing Sal Morgera. The College expresses its sincere gratitude to these individuals for the leadership roles they have played and will play within the USF College of Engineering.

The College's Advisory Board continues to attract members from high profile companies who are tremendous assets to the College. We have appointed seven new board members (all but two are alumni) from organizations such as Honeywell, Chromalloy, Tampa Electric, Harris Corporation, Tampa Armature Works, Bracken Engineering, and HSA Engineers and Scientists.

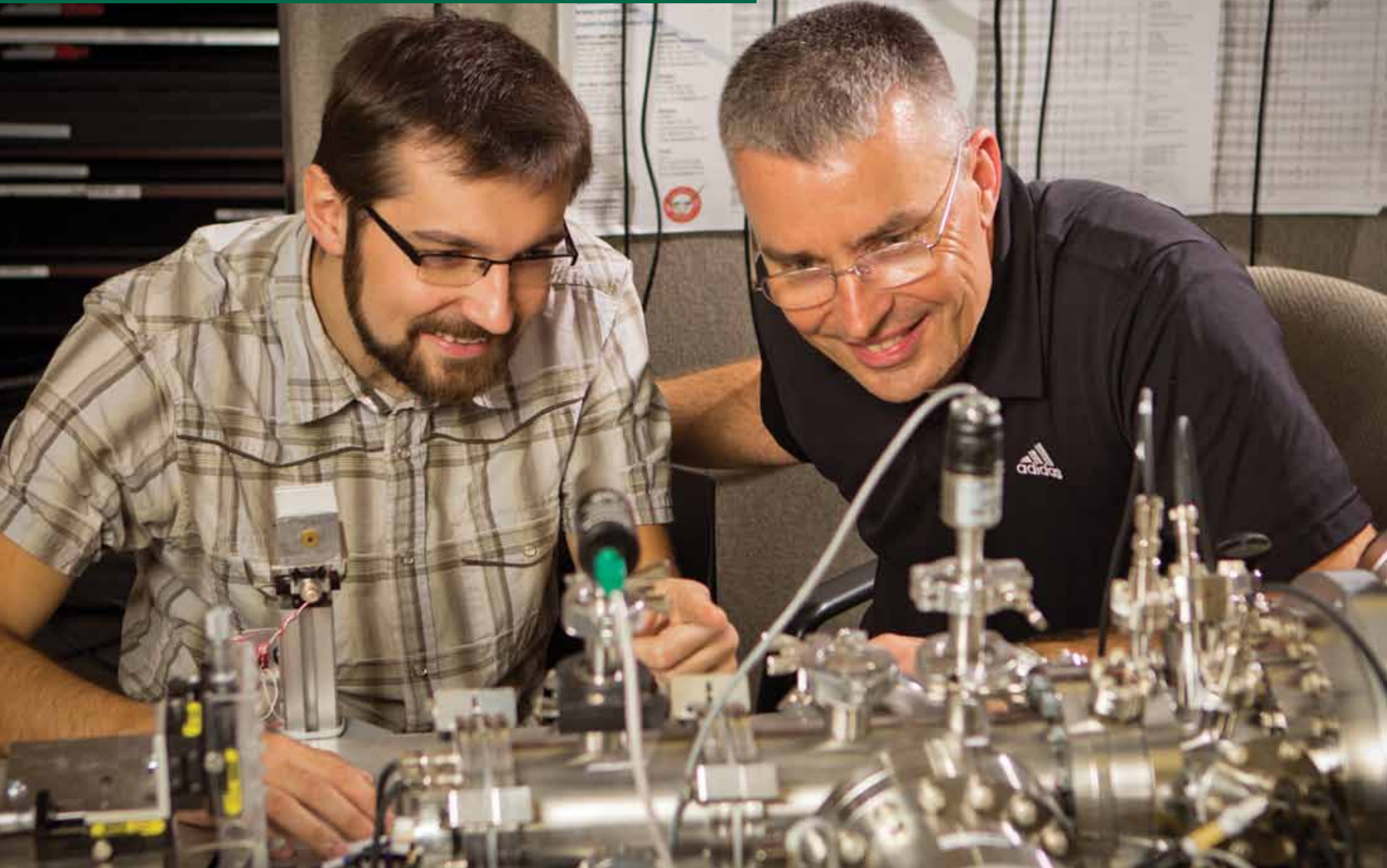
Major Accomplishments

The past year has seen a continuation of the College's forward progress on a number of fronts. The data comparing USF Engineering to AAU public institutions shows our degree productivity

(a lagging indicator) and our enrollments (a leading indicator) as well as other metrics. PhD productivity (degrees conferred per tenure track faculty) is currently around the 25th percentile and our MS productivity around the 75th percentile. We continue to recruit outstanding graduate students and shape our graduate enrollments so that our PhD and MS populations are at the appropriate quantitative levels (50th percentile for PhD and 75th percentile for MS enrollments vs. AAU publics). As you can see in the data, our enrollments are headed in a favorable direction with PhD enrollments approaching the 50th percentile and MS enrollments decreasing as planned, albeit a bit too much. In the coming years, budgetary uncertainty must be minimized if we want to maintain a more stable enrollment in our graduate programs. Budgetary stability remains a high priority of the College's leadership. Our faculty size has stabilized at approximately 110 tenure track faculty. Although we have discussed continued growth of the faculty, it is time for us to revisit our strategic plan in the coming year so that we recruit faculty in a manner that helps us implement the next phase of College's vision.

The USF College of Engineering continues to soar up the national rankings due to the hard work of our faculty, staff and students. In particular, we track the US News & World Report (USNWR) Engineering College Graduate program rankings. This ranking is published annually and uses a simple scoring system to map schools of engineering to a unique rank (i.e., a single numerical rank). With roughly 200 engineering programs reporting data to USNWR annually, only those schools that are in the top half receive a numerical ranking. USF College of Engineering was never numerically ranked until the 2011 rankings, when we broke into the rankings at No. 119 overall (79th among public institutions). I am pleased to report that our ranking continues to rise, coming in at No. 112 overall (75th among public institutions) last year (2012) and No. 109 (72nd among public institutions) in the most current rankings (2013). The key driver for our rise was increased research expenditures, secured via the hard work and creativity of our faculty and students. Quality metrics and selectivity in our graduate programs has also been helpful in moving us in the proper direction. As more of our PhD students move to completing their degrees and our PhD productivity increases in the next two to three years, we will see additional forward momentum. But the data also clearly supports a need to continue to hire more faculty and watch our MS enrollments and get them back to the 75th percentile level. We have forward positive momentum now and we need to continue to build speed and mass.

Finally, I continue to be amazed with the quality of our faculty and their dedication to our mission. We have had many notable accomplishments among our faculty this past year. Professors Ashok Kumar, Salvatore Morgera, and Yogi Goswami were all named Fellows of the American Association for the Advancement of Science. Professor Alberto Sagues was named a Fellow of NACE International. Professor Muhammad Rahman received the Distinguished Service Award from the ASME. Professor Larry Hall was named a USF Distinguished University Professor. Finally, Professor Abe Kandel was the recipient of the Fuzzy Systems Pioneer Award from the IEEE. Additional notable accomplishments are listed throughout the report and they all speak to the dedication and productivity of our faculty and students. I take great pride in saying I am a USF Engineering faculty member because I am surrounded by such dedicated people.



Our Vision

By providing a relevant, high quality educational experience for our students and by being a leader in innovative research in the areas of sustainability, renewable energy and biomedical engineering, the College of Engineering aspires to be a peer among engineering programs at research-focused public universities.

Our Mission

The Mission of the College of Engineering at the University of South Florida is to improve the quality of life in our community by:

- Providing a high-quality education for our students and practicing professionals
- Creating new knowledge and solving real world problems via innovative research
- Engaging in effective community service and outreach

Our Goals

- Ensure academic and future professional success for our students
- Achieve and sustain national recognition in research
- Establish essential operational infrastructure to achieve the College's vision

Our Values

Through the College's support and emphasis of these values, we lead by example and pass these attributes on to our students, empowering them to be creative and innovative engineering professionals in the 21st century as their work influences and impacts humanity.

- Student Centric
- Collaboration
- Collegiality
- Commitment to Continuous Improvement
- Innovation
- Diversity
- Service to Humanity

Four Key Action Items

FOR 2011-2012

As is our practice each year, we have a set of action items for the year to assist and guide us toward fulfilling the goals articulated in the College of Engineering Strategic Plan. For 2011-12 the Key Action Items were:

Follow up on our successful attainment of our capital campaign goal by seeking naming opportunities for the renovation of the Engineering II first floor

The College is pleased to announce that the renovation of the Engineering II first floor has raised \$235,836 as of June 30, 2012, including two naming opportunities.

HSA Engineers & Scientists \$100,000 – Classroom

USF Engineering Alumni Society \$75,000 – Conference Room



Finalize the formation of Student Services

(merging Advising and Outreach units within the College of Engineering)

The unification of the advising group and the outreach group into a single unit called Engineering Student Services has been completed. The direct benefits from this unification are:

- The number of individualized advising sessions for our students has been increased by an estimated 30 percent.
- The first all-female engineering living and learning community has been established and is already at full capacity for fall 2012.
- Course-based learning communities for engineering students will start in fall 2012.
- All engineering students will be placed in an orientation class their first semester at USF and will register with Career Services (pending fee approval).

Continue to expand learning experiences outside the classroom for our students

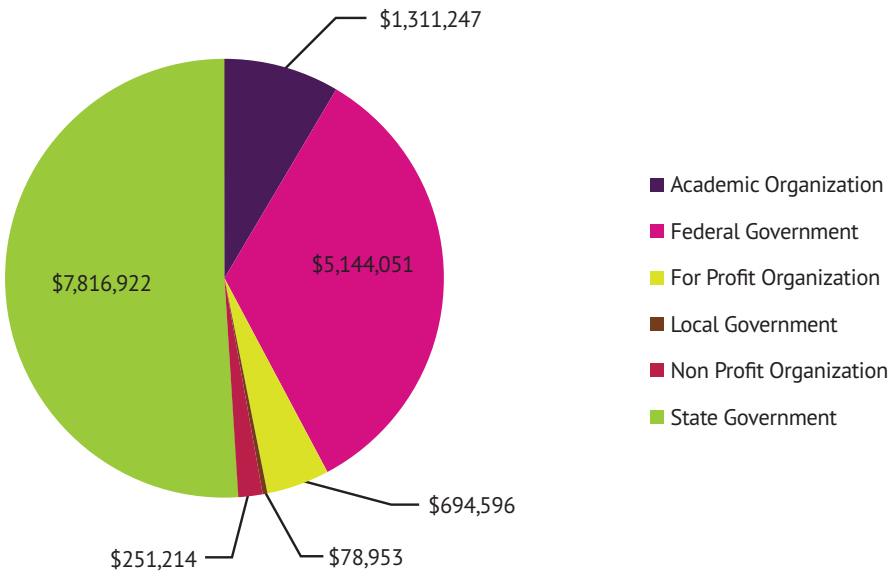
Efforts to secure learning experiences outside the classroom this past year have included:

- Regular communications with the USF Career Center and companies looking to fill engineering internships and other positions.
- Implemented a mandatory orientation class and registration with Career Services for first-year students (effective fall 2012, pending fee approval).

- Students are now directly informed on a regular basis of internships and other career related employment opportunities.
- Developed new internship opportunities and maintained existing relationships with employers that offer engineering internships to our students.
- During this past year internships and full-time employment opportunities were made available to our students by companies that include: Jabil, Lockheed Martin, Booz Allen & Hamilton, Boeing, Johnson & Johnson, NASA, Raytheon, Honeywell, SOCOM, etc.
- We continue to promote study-abroad opportunities to undergraduate engineering students through college-wide information sessions and scholarships.

Broaden our collaborative research efforts

Collaborative/Interdisciplinary Research Awards Funded in 2011:



Key Action Items for 2012-2013

- > With the completion of the 2008-2013 strategic plan we'll develop the next plan 2013-2018.
- > Prepare for the next accreditation visit in fall 2013.
- > Formulate collegiate educational goals for next accreditation cycle (2014-2020) as well as plan to implement such goals.
- > Seek opportunities to establish broad collaborative research centers within the College of Engineering which support and nurture faculty from other disciplines seeking to collaborate with engineering faculty.



Goal I

Ensure academic and future professional success for our students

Scholarships and Fellowships

Jean Weatherwax '12 Electrical Engineering prestigious postgraduate Marshall Scholarship. She will study at Imperial College in London. In 2011, Jean was awarded a Goldwater Scholarship and was a NASA MUST Scholar

Trina Halfhide Doctoral Student Engineering Science: Fulbright Fellowship

Mathew Verbyla Doctoral Student Environmental Engineering: National Science Foundation Graduate Research Fellowship

Joel Cooper '11 Doctoral Student Mechanical Engineering: National Science Foundation Graduate Research Fellowship

Hector Jose Machin Machin Doctoral Student Computer Science & Engineering: National Science Foundation Graduate Research Fellowship

Adrian Johnson Doctoral Student Computer Science & Engineering: National Science Foundation East Asia Pacific Institute Fellowship

John Shelton PhD '11 Mechanical Engineering: US Dept. of Energy - Energy Efficiency and Renewable Energy Postdoctoral Fellowship

Evelyn Benabe '00 MS EE Doctoral Student Electrical Engineering: Automatic RF Techniques Group Silver Student Fellowship

Jonathan Ticknor '10, '12 MSEV U.S. Dept. of Energy Office of Science Graduate Fellowship for study at Duke University

Civil Engineering undergraduates **Ileana Wald** and **Michael Esteban** each received the National Oceanic and Atmospheric Administration (NOAA) Ernest F. Hollings scholarship.

Erich Radauscher '12 five-year fellowship to Duke University to study bioscience. He worked on graphene on SiC for advanced device applications.

David Cure '06 MSEE NASA Graduate Student Research Program Fellowship

Marie Chenowith '12 Helen and Chance Prince Scholarship FL West Coast Section ASME.

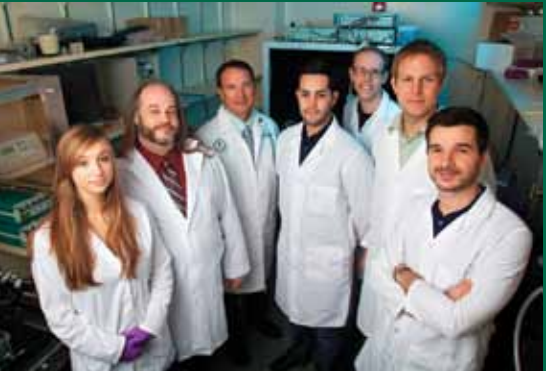
Faculty Appointments

Humberto Gomez Vega PhD '12, Chair of Mechanical Engineering Universidad del Norte, Baranquilla, Colombia



Goal II

Achieve and Sustain National Recognition in Research



DARPA Funding

The USF silicon carbide (SiC) group in the Department of Electrical Engineering, has been pioneering the use of SiC as a biomedical material for advanced applications since 2005. The group's early work was supported by several internal grants – A BITT seed grant for the development of SiC for neural probe applications (2009-2010); an interdisciplinary research grant from the College of Engineering that was matched by the College of Medicine (2010) and, in 2011 the group received a Neuroscience Collaborative grant from President Genshaft to further develop this technology (2011-2012).

This highly interdisciplinary group is led by Professor **Stephen E. Sadow**, College of Engineering and by **Dr. Edwin Weeber**, College of Medicine, and is supporting two post-doctoral researchers, two graduate students, a biotech and several REU students. The group's external collaborator on this project is **Dr. Joe Pancrazio** of George Mason University, Fairfax, VA, former Program Director for neural engineering and the neural prosthesis program at the National Institutes of Health before joining GMU in 2009 to lead the biomedical engineering program within the electrical engineering department.



Bill & Melinda Gates Foundation's Grand Challenges Exploration Fund

Civil and Environmental Associate Professor **Daniel Yeh** (pictured left) received a \$100,000 grant from the Grand Challenges Exploration Fund, an initiative created by the Bill & Melinda Gates Foundation that enables researchers worldwide to test unorthodox ideas that address persistent health and development challenges.

Novellus Systems / USF Award

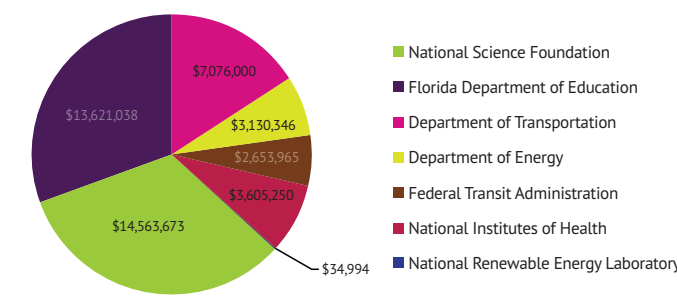
Novellus Systems and the University of South Florida received an NSF grant to improve solar cell efficiency. The goal of the research is to develop scalable manufacturing technology for these large-area dipole layer coatings that will allow PV solar manufacturers to precisely tailor the electronic properties of solar cell structures, leading to increased solar energy conversion.

Energy Research Grants

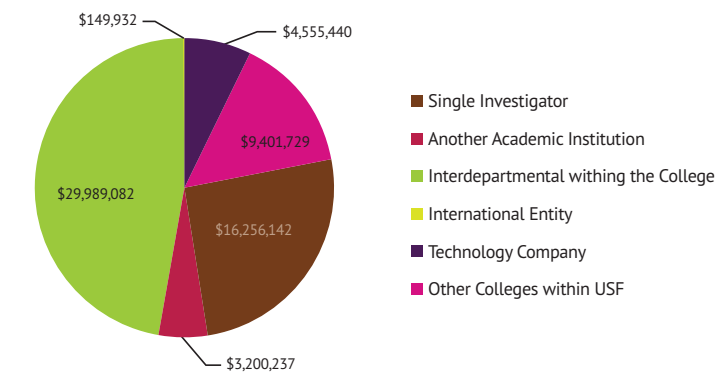
Distinguished University Professor **Yogi Goswami** received two prestigious energy research grants - one from ARPAe-USDOE for \$2.4M and the other grant from E-ON International, Germany with IMDEA Spain for \$800,000.

Trends

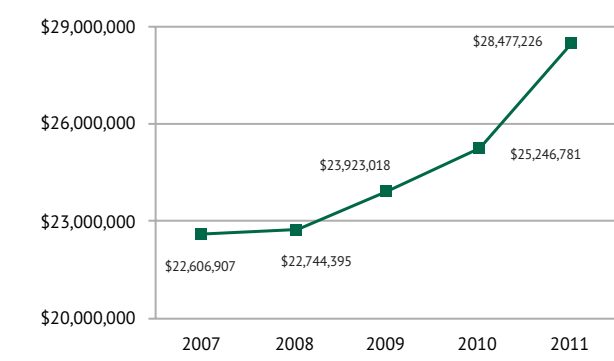
Active Awards



Interdisciplinary Research Profile



Research Expenditures



Center for Urban Transportation Research Selected to Receive National Grant

The **National Center for Transit Research** (NCTR) at the Center for Urban Transportation Research (CUTR) has been competitively selected as one of 22 national University Transportation Centers by the U.S. Department of Transportation. This designation will provide USF with a grant of \$3.5 million from the USDOT fiscal year 2011 budget to be matched with an additional \$3.5 million for a total of \$7 million. USF’s National Center for Transit Research was selected as one of only two public transportation-focused university research programs to receive this highly competitive national grant. Sixty-three university consortiums applied.

NCTR is a consortium of four universities led by USF and includes Florida International University’s Lehman Transportation Center, the University of Illinois at Chicago’s Urban Transportation Center, and North Dakota State University’s Small Urban and Rural Transportation Center.



Pei-Sung Lin, PhD

Pei-Sung Lin, PhD, PE, PTOE, Director of the ITS, Traffic Operations and Safety Program at the Center for Urban Transportation Research (CUTR) has received the Comprehensive Motorcycle Safety Program grant from the Florida Department of Transportation (FDOT) and the National Highway Traffic Safety

Administration (NHTSA) to improve motorcycle safety and reduce motorcycle-related crashes in Florida. This project has \$575,000 in funding. This is the third year that Dr. Lin has been awarded this important motorcycle safety grant.

The **Florida Motorcycle Safety Coalition**, housed at the Center for Urban Transportation Research (CUTR) received the John W. Barr District 10 Transportation Achievement Award from the Florida Section Institute of Transportation Engineers (ITE). This award recognizes the significant achievements and outstanding contributions from the Florida Motorcycle Safety Coalition to reduce motorcycle related fatalities, injuries and crashes in Florida. **Dr. Pei-Sung Lin**, Program Director of ITS, Traffic Operations and Safety at CUTR, on behalf of the Coalition, received this prestigious award during the Florida Section ITE annual meeting banquet held in December.

Recent CUTR Patents

U.S. Patent No. 8,036,679 titled “Optimizing Performance of Location-Aware Applications Using State Machines” was issued October 11, 2011 to the inventors group that includes Sean Barbeau, CUTR research associate and Computer Science and Engineering PhD candidate; Philip Winters, Director of Transportation Demand Management Program at CUTR; Rafael Perez, computer science and engineering professor; Miguel Labrador, associate professor of computer science and engineering; and CUTR Senior Research Associate Nevine Georggi. While the patent was developed for the transportation world, it will have a lot of value elsewhere.

U.S. Patent No. 8,045,954 titled “Wireless Emergency-Reporting System” was issued in October to the inventors group that includes Sean Barbeau, CUTR research associate and Computer Science and Engineering doctoral candidate; Philip Winters, Director of Transportation Demand Management Program at CUTR; Rafael Perez, computer science and engineering professor; Miguel Labrador, associate professor of computer science and engineering; and CUTR Senior Research Associate Nevine Georggi. This is the second patent this research group received in October the other being U.S. Patent No. 8,036,679 titled “Optimizing Performance of Location-Aware Applications Using State Machines.”

As if these patents weren’t enough, this group continues to be awarded patents - U.S. Patent No. 8,137,907 Travel Assistance Device and U.S. Patent No. 8,145,183 On-Demand Emergency Notification System Using GPS-Equipped Devices. Sasha Dos Santos was an additional inventor for this patent (8,145,183).



After an exhaustive national search, **Jason Bittner** was named director of the Center for Urban Transportation Research. Bittner

was formerly Deputy Director of the National Center for Freight and Infrastructure Research and Education (CFIRE) at the University of Wisconsin–Madison. He also held a research appointment with a focus on freight transportation in the College of Engineering’s Wisconsin Transportation Center. During his previous 12 years in university-based transportation research and education, he has held progressively responsible positions including tenure as Acting Director. He also is a lecturer in transportation management and policy at UW–Madison and was instrumental in establishing a multidisciplinary graduate certificate program in transportation at the institution. Previously, he was an adjunct professor of political science and public affairs at Edgewood College in Madison, held an administrative management position with the Municipality of New Lebanon, Ohio, and worked for U.S. Senator Howard Metzenbaum.



Goal III

Engaging in Community Service and Outreach

The College of Engineering participates in many outreach programs to elementary, middle school and high school students. Engineering EXPO, started in 1974, is the longest running outreach program in the College and one of the oldest at University of South Florida. Annually, 18,000 students and their teachers attend EXPO in February.

Super Heroes Training Network

A recent adaptation of the National Science Foundation's STARS program has a super twist. Three doctoral students, Sam DuPont, Audrey Buttice and Robert Bair don super hero costumes to get fifth grade students at four Hillsborough County middle schools interested in science. With onsite visits, videos and an agreement that gets the students committed and involved, the Superheroes work with teachers to grab student interest and increase learning at the same time.

To learn more about this project, go to www.superherotrainingnetwork.com.

Spatial Augmented Game Environment (SAGE)

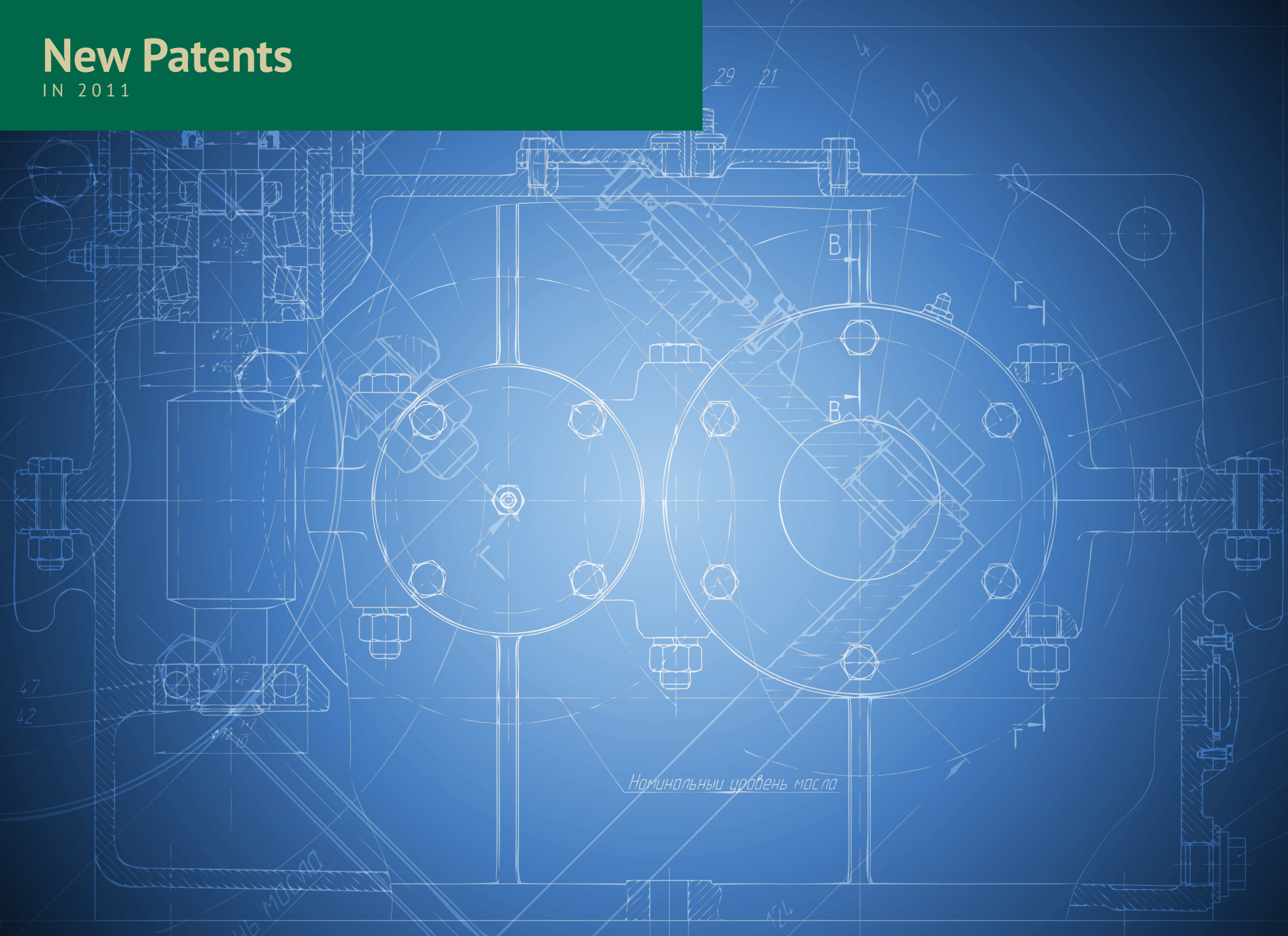
A computer science and engineering professor and his team of students are developing a tool to help future and current surgeons and, as astonishing as this may sound, they are using video game technology to do it. The Spatial Augmented Game Environment (SAGE) is the invention of **Assistant Professor Yu Sun** and some of his students.

They are teaching kids about the inside of the human body through the use of a projector, a Microsoft Kinect device and a computer. Through this process they are also creating a training tool for surgeons.

SAGE projects the inside image of the human body including the organs, bones, and muscles onto the surface of the body. Sun's goal is to make the surgeons' job easier as well as creating a safer surgery and a reduction in surgical time.

SAGE, still in the development phase, is funded by a grant from the National Science Foundation.





8,063,832	11/22/2011	Weller, Thomas M.	Dual-Feed Series Microstrip Patch Array
8,064,836	11/22/2011	Celebi, Hasari	Cognitive Radio Transceiver for Dispersed Spectrum Utilization
8,058,155	11/15/2011	Bhansali, Shekhar	Integrated Nanowires/Microelectrode Array for Biosensing
8,045,954	10/25/2011	Barbeau, Sean J	Wireless Emergency-Reporting System
8,034,302	10/11/2011	Alcantar, Norma	Transparent Conducting Composites (TCCs) for Creating Chemically Active Surfaces
8,036,112	10/11/2011	Labrador, Miguel A	System and Method for Transmission Control Protocol (TCP) Transmission Rate Control
8,036,679	10/11/2011	Barbeau, Sean J	Optimizing Performance of Location-Aware Applications Using State Machines\n
8,020,490	9/20/2011	Bhansali, Shekhar	Method of Fabricating MEMS-based Micro Detonators
8,017,368	9/13/2011	Jaroszeski, Mark J	Molecular Delivery to Cells Using Aspirin-Related Compounds
8,018,121	9/13/2011	Cular, Stefan	Integrated Thickness Shear Mode (TSM) Sensor and Surface Acoustic Wave (SAW) Device for Simultaneous Sensing and Removal of Analytes
7,992,425	8/9/2011	Luongo, Kevin	Hydrogen Sensor
7,981,442	7/19/2011	VanAuker, Michael	Ultrasound Enhancement of Drug Release Across Non Ionic Surfactant Membranes
7,977,555	7/12/2011	Hall, James	Method of Modifying the Frequency Response of a Wooden Article
7,956,807	6/7/2011	Celebi, Hasari	Cognitive Positioning System
7,947,440	5/24/2011	Stroot, Peter G.	Method for Determining the Specific Growth Rate of a Cell Population within a Non-Homogeneous Systemt
7,942,945	5/17/2011	Zantye, Parshuram	CMP Slurry for Polymeric Interlayer Dielectric Planarization
7,943,049	5/17/2011	Alcantar, Norma	Water Purification Method Using Plant Molecules
7,944,230	5/17/2011	Ranganathan, Nagarajan	Methodology and Apparatus for Reduction of Soft Errors in Logic Circuits
7,932,457	4/26/2011	Hall, James	Accelerated Aging Process for Acoustic Stringed Instruments
7,920,997	4/5/2011	Domijan, Alexander	Electric Power Distribution Interruption Risk Assessment Calculator
7,906,182	3/15/2011	Schlaf, Rudiger	Method of Thin Film Electrospray Deposition
7,896,953	3/1/2011	Goswami, D. Yogi	Practical Method of CO2 Sequestration
7,892,440	2/22/2011	Bhansali, Shekhar	Wet Etching Process
7,878,063	2/1/2011	Cular, Stefan	Simultaneous Sample Manipulation and Sensing Using Surface Acoustic Waves
7,880,496	2/1/2011	Ranganathan, Nagarajan	Conservative Logic Gate for Design of Quantum Dot Cellular Automata Circuits
7,871,483	1/18/2011	Mullins, Austin Gray	Bond Enhancement for Underwater Repair
7,869,526	1/11/2011	Maxwell, Erick	System and Method for a Single Stage Tunable Ultra-Wideband Pulse Generator



2012 Eminent Scholars Lecture Series

William Shepherd, Capt. USN, ret.
NASA Astronaut “Technical and Operational Aspects of Building the International Space Station”

Bernard Amadei, PhD, U.S. National Academy of Engineering, Professor of Civil Engineering at University of Colorado at Boulder, Founder of Engineers Without Borders “Role of Engineers in Poverty Reduction: Challenges and Opportunities”

Rafael Bras, PhD, Provost and Executive Vice President for Academic Affairs Georgia Institute of Technology “Complexity and Organization in Earth Systems

College of Engineering Advisory Board

The College thanks the members of its Advisory Board for their generous donation of their time, experience and insight to help advance the mission of the College of Engineering.

Chuck Black
P.E., '73
Chair
TECO Energy
(retired)

Roberto Garcia
P.E., '72
Vice Chair
Tampa Bay Trane

Fermin Diaz
P.E., '77
Associate Chair
Stantec

Gene Balter
P.E., '77
Assistant Chair
HDR Engineering,
Inc

Sandy Pettit
P.E., '94, MSChem
'10
Engineering
Alumni Society
Representative

Joe Reineman
Past Chair
Verizon (retired)

Lilia Abron, PhD
Peer Consultants

Pat Beyer
'72
Cardno TBE Group

William Bracken
P.E., '89, MSCE '93
Bracken
Engineering
Florida Board
of Professional
Engineers

John Bucher
'77
Peak Solar

Frank Busot
'90, MBA '90
Tampa Electric

Ed Copeland, Jr.
P.E., '73, MSEng '73
HDR Engineering,
Inc.

Bob De Maio
'88
Honeywell

Joel Johnson
PhD '05
Harris Corporation

Dave Scott
'83, MSCE '86
HSA Engineers
& Scientists

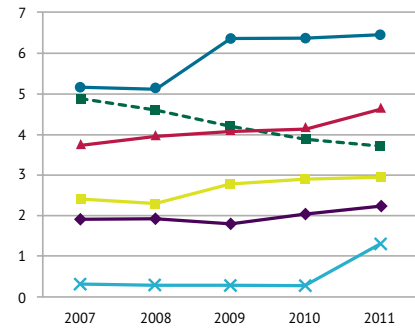
Thomas Trotter
Chromalloy
Castings

James Turner, III
Tampa Armature
Works

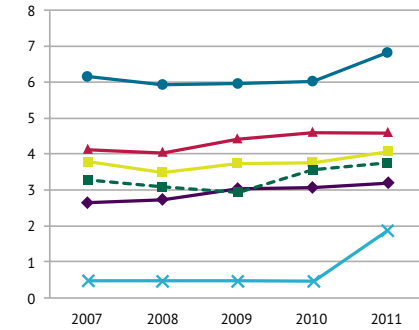


AAU Public University Performance Comparison (Source 2011 ASEE Survey)

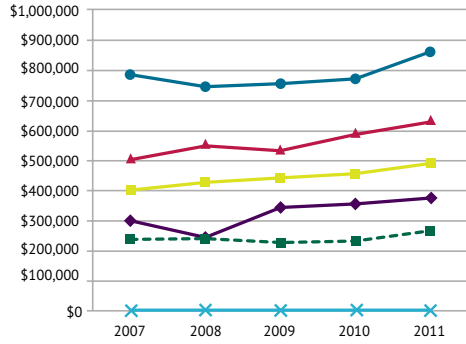
AAU Public Engineering Programs Master's Enrollment Per Tenured / Tenure Track Faculty



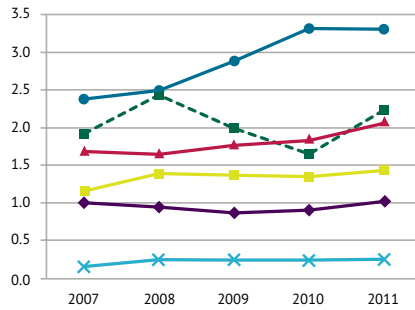
AAU Public Engineering Programs Doctoral Enrollment Per Tenured / Tenure Track Faculty



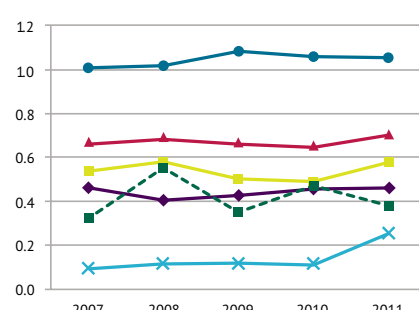
AAU Public Engineering Programs Research Expenditures Per Tenured / Tenure Track Faculty



AAU Public Engineering Programs Master's Degrees Per Tenured / Tenure Track Faculty

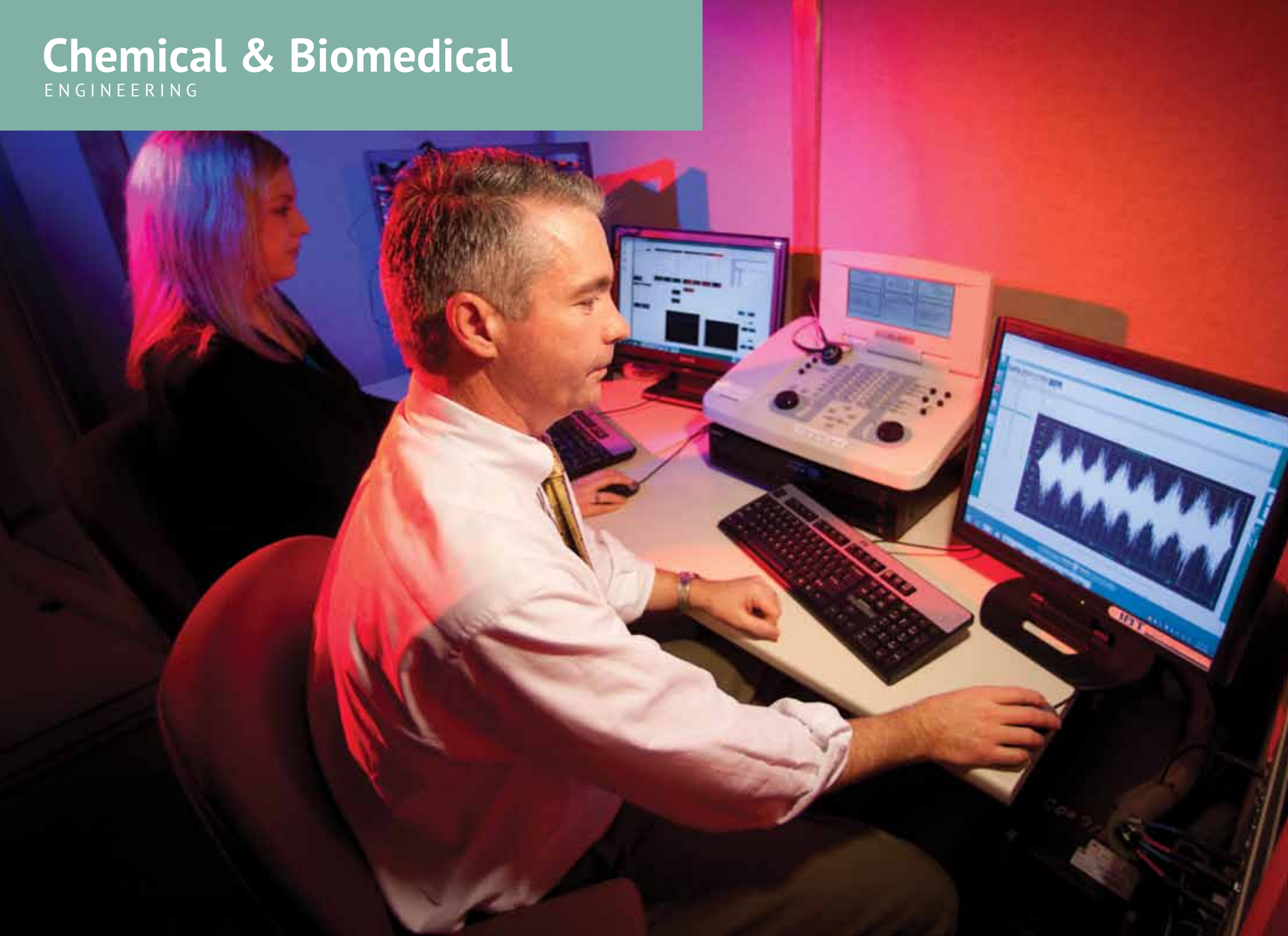


AAU Public Engineering Programs Doctoral Degrees Per Tenured / Tenure Track Faculty

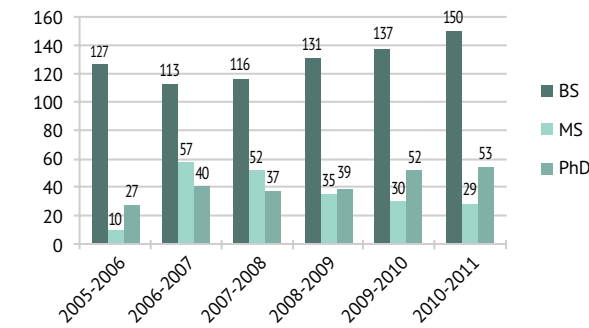


Key

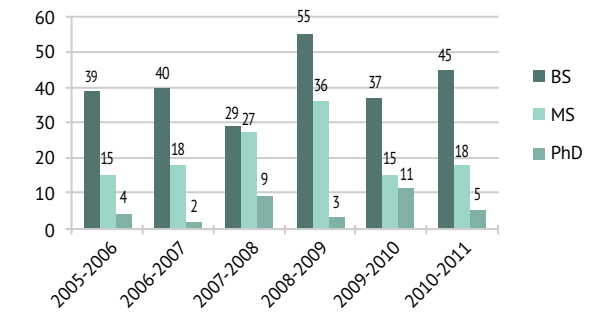
- Maximum
- 75th Percentile
- Median
- 25th Percentile
- Minimum
- University of South Florida



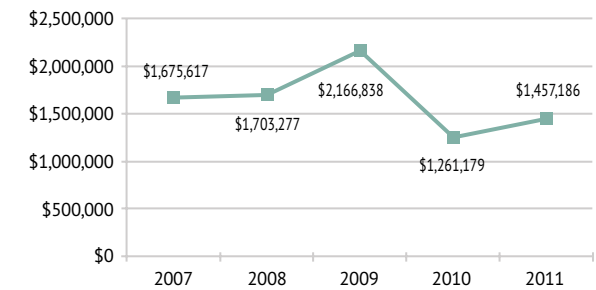
5-year Enrollment Trends



Degrees Awarded



Research Expenditures



Christopher Passaglia Anna Pyayt Babu Joseph Yogi Goswami Scott Campbell

Associate Professor **Christopher Passaglia** came to USF from the Department of Biomedical Engineering at Boston University, where his research on the visual system garnered several notable awards, including a Career Award from the National Science Foundation and a Smith Family New Investigator Award from the Medical Foundation.

Assistant Professor **Anna Pyayt** joined the dept. this academic year. She finished her postdoctoral CI Fellowship at Stanford University in the Department of Electrical Engineering and the School of Medicine. Before arriving at Stanford, she earned a dual PhD in electrical engineering and nanotechnology from the University of Washington (UW). While at UW she was a research intern at HP Labs and Microsoft Research. Pyayt’s research is dedicated to new Optical MEMS/NEMS and its applications to healthcare, computer chips and networks.

Professor **Babu Joseph** received the Outstanding Undergraduate Teaching Award and Professor **Scott Campbell** received the Jerome Krivanek Award at the annual USF Faculty Honors & Awards Reception.

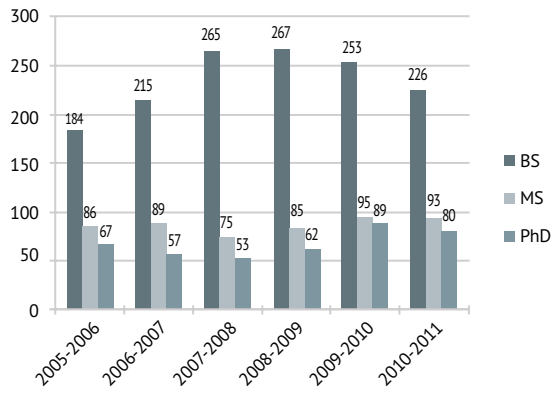
Professor **Yogi Goswami** was elected an AAAS Fellow for his distinguished contributions to research, development and education in renewable energies, particularly his innovative work in solar thermal power generation, and for upholding rigorous scientific discourse as chief editor of *Solar Energy*.

He also received two awards, the USF Theodore and Venette Askounes-Ashford Distinguished Scholar Award and an Outstanding Research Achievement Award from the College of Engineering.

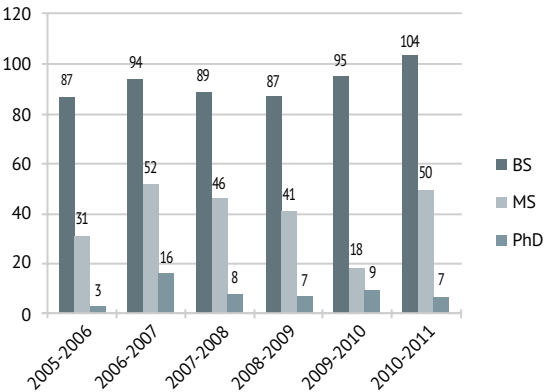
Norma Alcantar, associate professor, was selected to the USF Diversity Honor Roll by the Office of Diversity and Equal Opportunity Affairs for her contribution to the advancement of diversity and inclusion. Norma Alcantar was nominated for research activities that have addressed underserved communities globally, her successful role in mentoring female graduate students within her research group as well as her commitment toward diversity throughout the College as the Sloan Program Coordinator in her department.



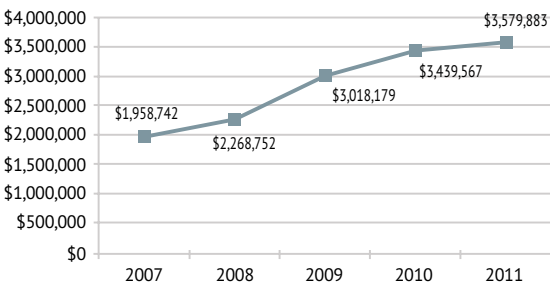
5-year Enrollment Trends



Degrees Awarded



Research Expenditures



Rajan Sen Sarina Ergas Mark Ross

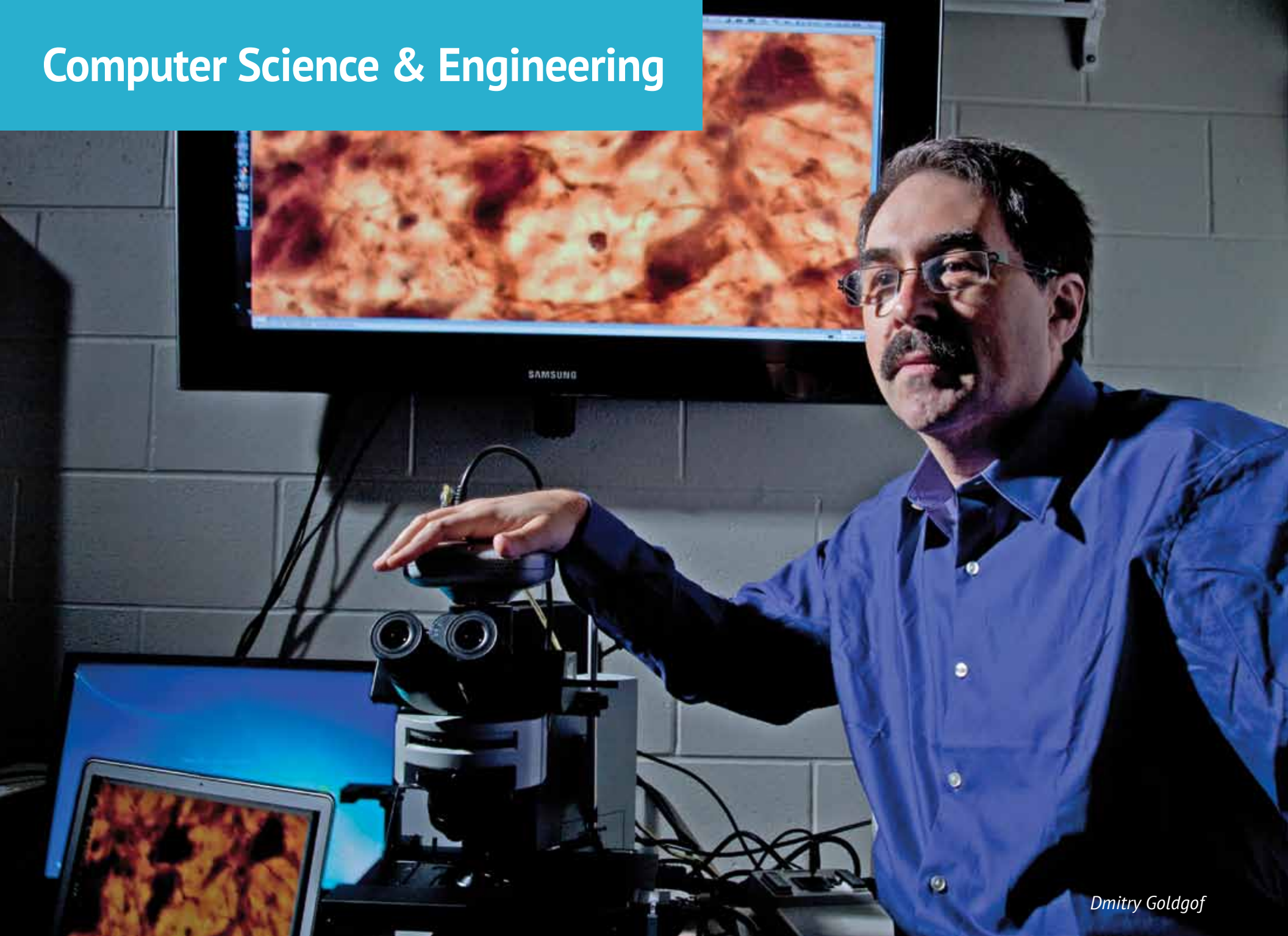
Rajan Sen, P.E., professor of structural engineering, has been named University of South Florida's first Jefferson Science Fellow. He is one of 12 Jefferson Science Fellows for 2012-2013 named by the U.S. State Department. Sen, who has held appointments in the College of Engineering and the School of Architecture and Community Design as well as the inaugural Samuel and Julia Flom Endowed Chair, is the first professor at the University of South Florida to be appointed a Jefferson Science Fellow.

As a JSF, Sen will advise the U.S. State Department on engineering issues as they relate to international diplomacy and policy. He will serve in the State Department for one year, beginning August 13 and will return to USF after the appointment ends, but remain available to the U.S. Department of State to serve as a field expert for the following five years.

Sarina Ergas, professor of civil and environmental engineering was recently elected to Association of Environmental Engineering and Science Professors (AEESP) Board of Directors.

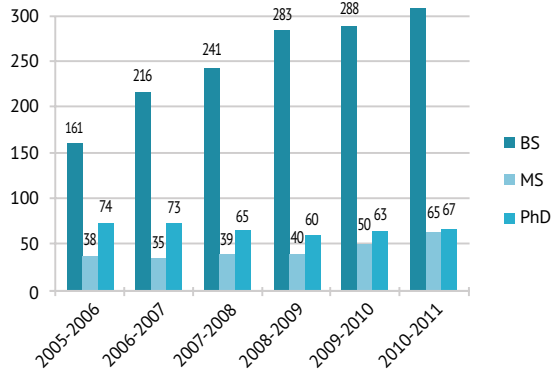
The USF **Student Chapter of the American Society of Civil Engineers** (ASCE) took first place overall in the Steel Bridge Competition held during the ASCE Southeastern Student Conference at the FAMU – FSU College of Engineering in Tallahassee. The team placed eighth overall for the competition – the combination of all competitions. Professor **Abla Zayed** is the ASCE student chapter faculty advisor.

The **Chi Epsilon Student Chapter** received the 2012 Susan C. Brown Outstanding Student Award at the National Conclave. Chi Epsilon is the national civil engineering honor society founded in 1922. Professor **Mark Ross** is the group's faculty advisor.

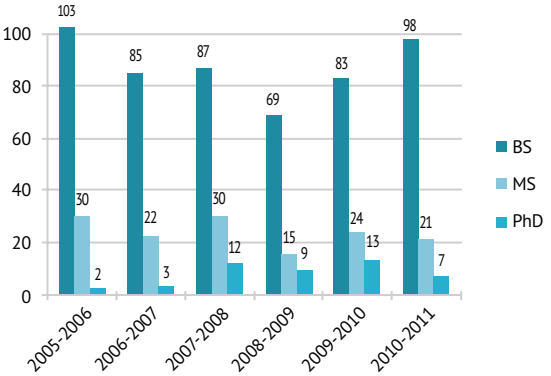


Dmitry Goldgof

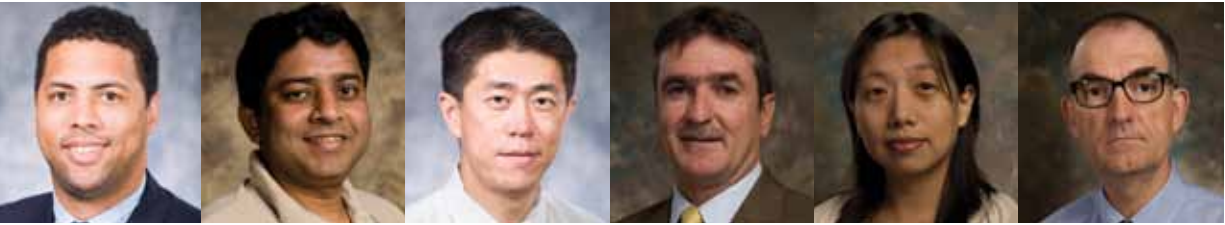
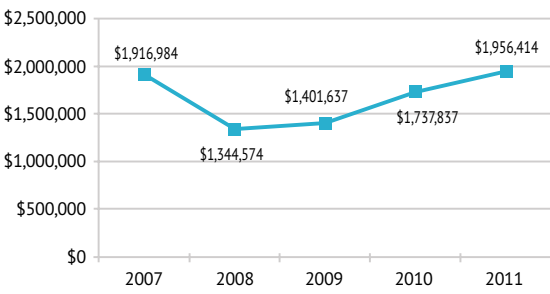
5-year Enrollment Trends



Degrees Awarded



Research Expenditures



Luther Palmer Sudeep Sarkar Yu Sun Miguel Labrador Jing Wang Ken Christensen

Instructor **Jing Wang**, PhD, received the USF Outstanding Undergraduate Teaching Award for 2010-2011.

Assistant Professor **Luther Palmer** received funding from the NSF for BRIGE “Running Over Rough Terrain – Testing Biological Hypotheses.” The work seeks to enhance two biological hypotheses regarding the role of passive and active elements during high-speed legged locomotion.

Professor **Sudeep Sarkar** was appointed an associate editor of the IEEE Transactions on Pattern Analysis and Machine Intelligence. T-PAMI is one of the highest impact journals in its field. Sarkar will be handling papers in Computer Vision.

Assistant Professor **Yu Sun** has been appointed an associate editor of IEEE Robotics and Automation Magazine for a three-year term beginning January 1, 2012.

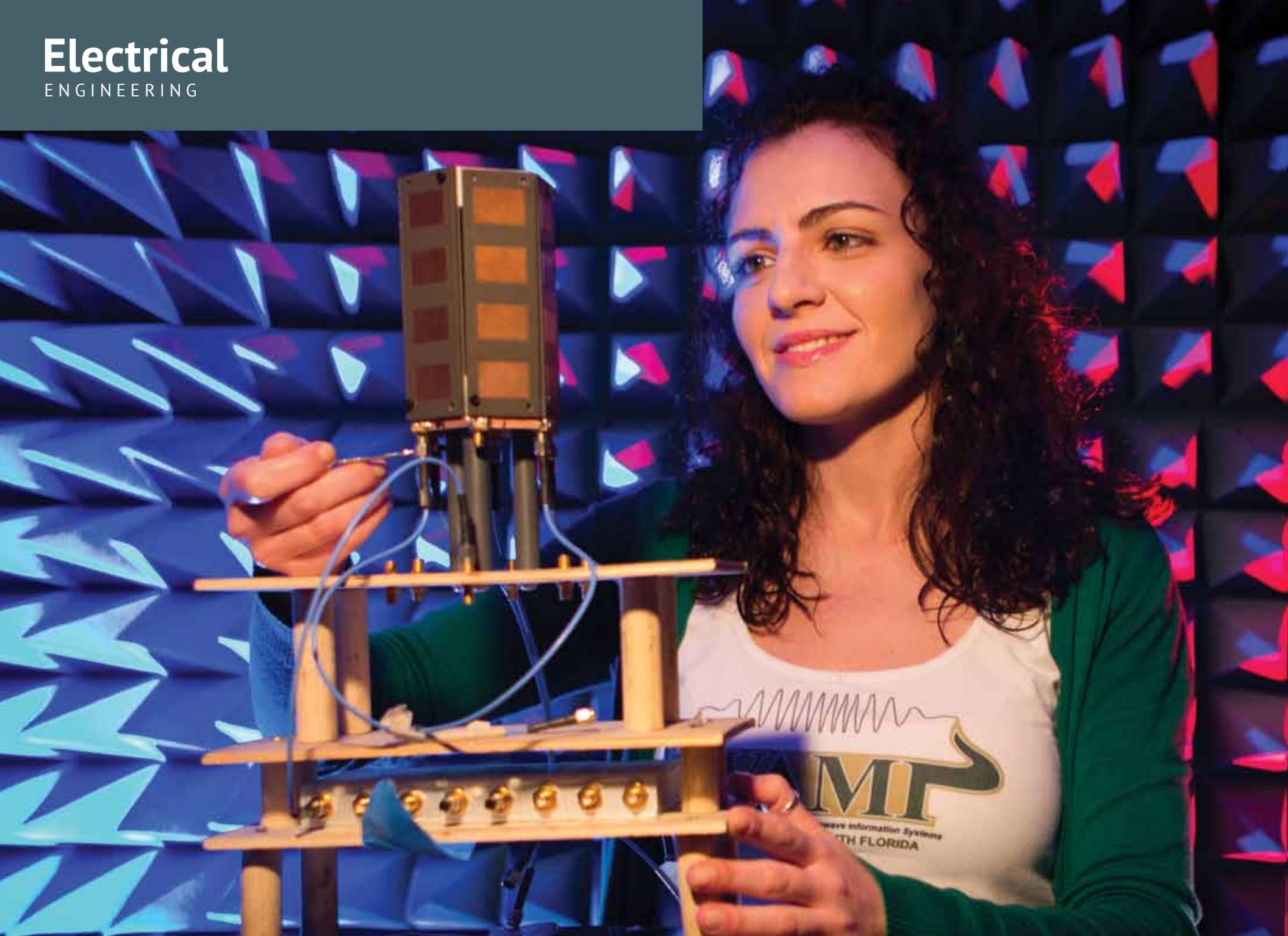
Associate Professor **Miguel Labrador** has been invited for a one-year term on the Computing Research Association Education Committee.

The IEEE Publication Services and Products Board appointed Professor **Dmitry Goldgof** as a member of the IEEE Press Editorial Board for the 2012-2014 term. His principal responsibility, as a board member, will be to review proposals for book projects.

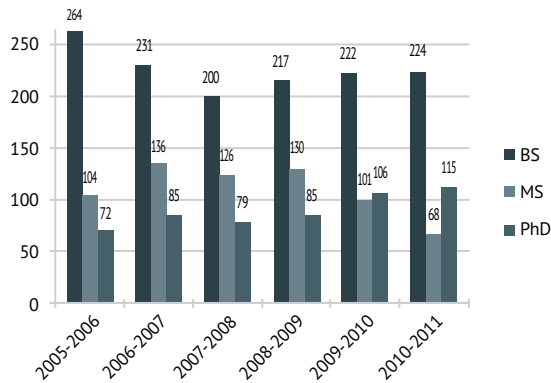
Mehrgan Mostowfi and Professor **Ken Christensen**, in partnership with Craig Woolley (Assistant Vice President for Administration and Support Services for Information Technology) were granted a USF Student Green Energy Fund of \$50,000 to reduce the overall energy consumption and environmental impact of USF Tampa campus through design, implementation and evaluation of scheduling methods to utilize power-saving modes in campus PCs. The three-year project is titled, “Reducing Electricity Consumption at USF by Using State-of-the-Art Methods to Power Manage Desktop Computers

Professor **Ken Christensen** and Dr. Reviriego of the Universidad Antonio de Nebrija (Madrid, Spain), were granted a Google Research Award to explore new network protocol semantics and primitives to enable coordinated scheduling of data bursts across multiple time scales and protocol layers to achieve energy savings in client devices and potentially also in servers within data centers. This one-year project will also provide for an REU student to assist a graduate student in completing the research. For this project, new scheduling methods will be designed, modeled and implemented. A prototype will be evaluated to be able to predict the expected large-scale energy savings and performance trade-offs from the new methods.

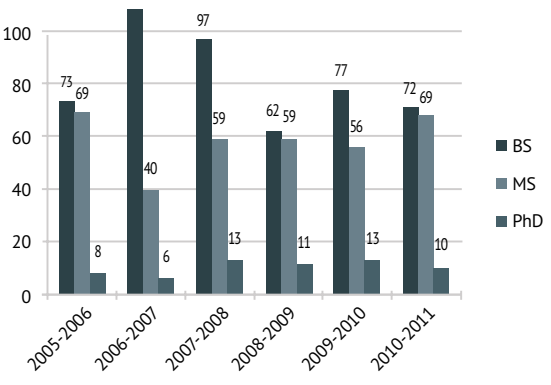
Professor and Chair **Larry Hall** received the Distinguished University Professor honor at the USF 2011 Faculty & Honors Awards Reception.



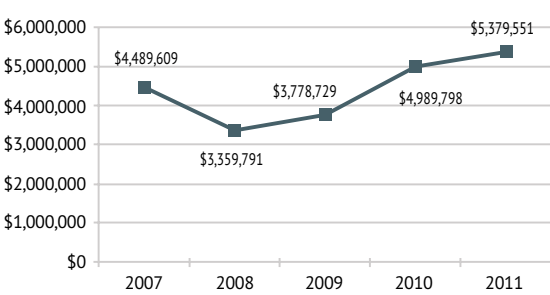
5-year Enrollment Trends



Degrees Awarded



Research Expenditures



Sylvia Wilson Thomas Thomas Weller Huseyin Arslan Sanjukta Bhanja Stephen Sadow

Sylvia Wilson Thomas, assistant professor, was awarded a McKnight Junior Faculty Development Fellowship (JFF) for the 2011-2012 academic year by the Florida Education Fund.

The purpose of the Junior Faculty fellowship is to provide promising faculty from underrepresented groups with a release from their normal teaching load to focus on their research in order to prepare for promotion and tenure. Thomas' research and teaching interests are in the areas of advanced materials for applications in alternative energy sources, sustainable environments, and bio-applications for nano-electro mechanical system (NEMS) devices – nanowires and nanoparticles.

Professor **Thomas Weller** was named Department Chair. He previously held the position of Associate Dean of Research for the College of Engineering.

Huseyin Arslan, associate professor, received an Excellence in Innovation Award at the annual USF Faculty Honors & Awards Reception.

Associate Professor **Sanjukta Bhanja** was named Associate Editor of IEEE Transactions on VLSI Systems.

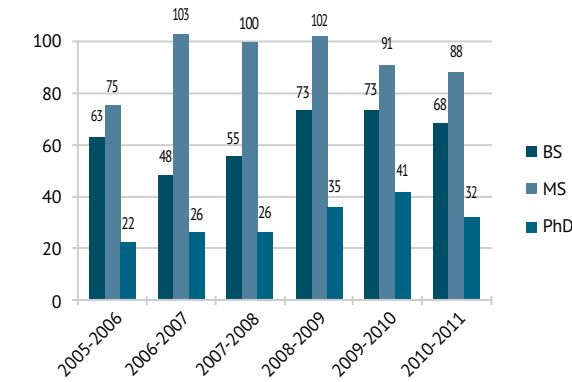
Agilent Technologies gave the largest in-kind donation (\$25.9 million) in the history of USF in the form of software licenses for the proprietary EEs of EDA software.

Professor **Stephen Sadow** received the 2011 Outstanding Engineering Educator award by the Florida Council of the IEEE.

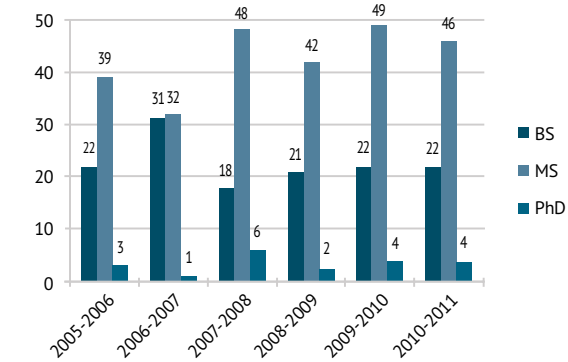
Long-time donor and supporter, **Harvey Kaylie**, founder of Mini-Circuits, Brooklyn, NY, received an honorary doctorate of engineering at summer commencement.



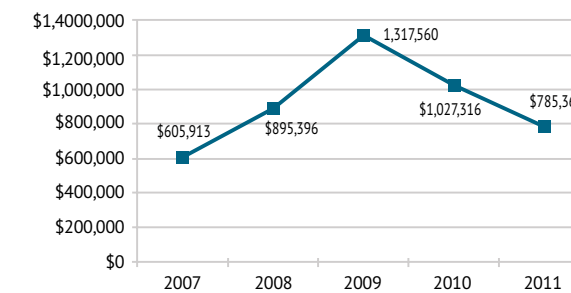
5-year Enrollment Trends



Degrees Awarded



Research Expenditures



Tapas Das

Jose Zayas-Castro

Geoffrey Okogbaa

Shuai Huang

Bo Zeng

Professor **Tapas Das** was named Department Chair.

Professor **Jose Zayas-Castro** was appointed Associate Dean for Research. Previously, he was the department chair.

The Students, Teachers and Resources in the Sciences (STARS) program developed in the Industrial and Management Systems Engineering Dept. received the 2011 Outstanding Science Educator of the Year award from the Florida Association of Science Teachers (FAST) in 2011. **Geoffrey Okogbaa** and subsequently **Tapas Das** are PIs.

Shuai Huang joins IMSE as an Assistant Professor. He graduated from a special class for gifted young students at the University of Science and Technology of China, and received his PhD from Arizona State University. His research interest is in health and biomedical informatics and statistical learning. Huang is currently engaged in modeling Alzheimer's disease and will collaborate with Byrd Alzheimer Center at USF.

The department has placed four of its PhD graduates in the last two years in U.S. universities as tenure track assistant professors. **Vishnu Nanduri** and **Wilkistar Otieno** joined University of Wisconsin Milwaukee, **Diana Prieto** and **Laila Cure** joined Western Michigan University.

IMSE PhD student **Dongping Du** won the 2011 IEEE EMBC IBM Best Student Paper award.

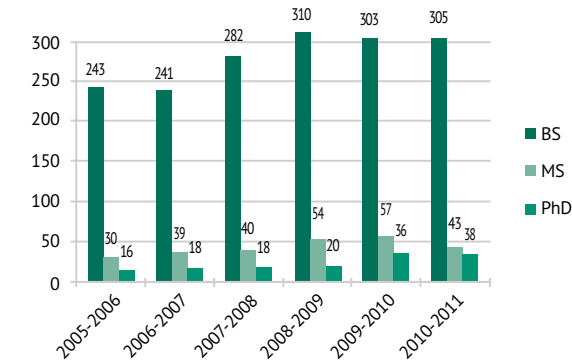
Assistant Professor **Bo Zeng** received, as co-PI, two major grants from the National Institutes of Health and the National Science Foundation.

The department has implemented a comprehensive mentoring program for its undergraduates with an aim to significantly improve student success.

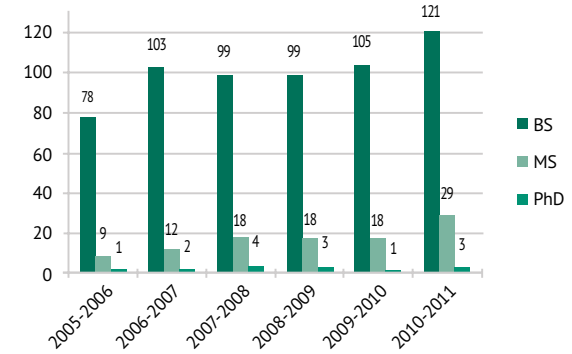
BSIE curriculum is undergoing a major revision to include training in engineering analytic methods to benefit from BigData.



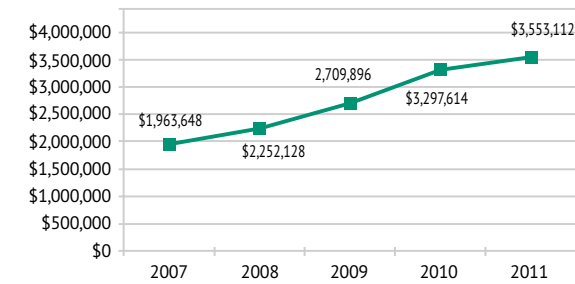
5-year Enrollment Trends



Degrees Awarded



Research Expenditures



Craig Lusk

Muhammad Rahman

Stephanie Carey

Nathan Crane

Rasim Guldiken

Associate Professor **Craig Lusk** was appointed an associate editor for the Journal of Mechanical Design, ASME's journal for design research.

Professor **Muhammad Rahman** has been elected to the Chair of the Strategic Planning Committee (SPC) of the ASME Technical Communities Operating Board (TCOB). His three-year appointment runs from July 2012 to June 2015.

Professor and Chair **Rajiv Dubey** and Assistant Research Professor **Stephanie Carey**, PI and Co PI respectively, received two grants from the Florida Space Grant Consortium for "Development of an Undergraduate Engineering Course: Introduction to Bioastronautics" and "Human Upper Body Modeling and Simulation in Space Conditions for Astronaut Training."

Associate Professor **Nathan Crane** received an NSF award for "Large Stroke Microscale Actuators Based on Electrowetting" (\$360,121). Co PIs are **Alex Volinsky** and **Rasim Guldiken**.

Rasim Guldiken, assistant professor, received an NSF EAGER: "A Surface Acoustic Wave Device for High-Resolution Atherosclerotic Plaque Inspection." (\$199,908)

Rajiv Dubey received a \$350,295 grant from the Florida Dept. of Education for "USF Virtual Reality and Robotics."

The Mechanical Engineering Department received a Research Faculty Pathway Grant award for \$50,000 per year for a two-year period to support the salary and benefits of Assistant Research Professor, **Stephanie Carey**, who received a Veteran's Reintegration grant titled "Development of a Wearable Motion Analysis System for Evaluation and Rehabilitation for TBI" (\$40,000).

The **American Society of Mechanical Engineers @ USF** Electrathon Team #133 took first place in the college division, fourth place overall, and car #132 took second place in the college division at the Emerald Coast Pensacola Electrathon Classic Race in April 2012. In addition, **Nyssa Masters** received the ASME Young Professional of the Year award and **Abigail Lambert** received the ASME Engineering Student of the Year award in February 2012.

USF Racing finished ninth place overall at the Formula SAE Lincoln at the Lincoln Air Park in Nebraska. This is the first time that USF Racing has finished in the top 10 at a Formula SAE event.



College of Engineering
University of South Florida
4202 E. Fowler Avenue, ENB 118
Tampa, Florida 33620
813-974-3820
www.eng.usf.edu