

MECHANICAL & AEROSPACE

ENGINEERING



TIM CASEY / UAA COMMUNICATIONS

Jacob Kurtz (left) stands with former Florida basketball coach Billy Donovan (right) at the Stephen C. O'Connell Center.

MAE Alumnus Recalls Time Playing on Gator Basketball Team

If you've been following the UF basketball team, you're probably already familiar with the narrative around **JACOB KURTZ**.

Kurtz, a walk-on forward for the Gators, worked his way up the ranks, ultimately earning significant playing time and becoming the most accomplished walk-on player of the Billy Donovan era and — as UF's GatorZone website puts it — arguably of all time.

Here's the part of the narrative you might not have heard. While juggling his career in collegiate athletics, Kurtz also was working toward a degree in mechanical engineering.

Kurtz didn't back down from the challenge. While at Florida, he used a self-discipline

system to ensure success in both hoops and books simultaneously.

"It was always about being organized," he said. "I would write down everything that I had to do for the week and would check things off as I completed it. I would make a schedule when I would do school work and for that block of time I would get my school work done."

Kurtz said he rarely felt stressed out or overwhelmed by the commitment to sports and academics, in part because he was so good at staying on top of it and also because he learned when to take time for himself.

"I had a rule that I would not do schoolwork past 11:30 p.m." he said.

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LETTER FROM THE CHAIR



David W. Hahn

As we go to press with our Fall 2015 newsletter, it is an exciting time in the College of Engineering. As many of you may have heard, we are now the **HERBERT WERTHEIM COLLEGE OF ENGINEERING**. The naming is part of a \$50M donation from Herbert and Nicole Wertheim that will be invested in College infrastructure, faculty and students. Dean Abernathy envisions this as the catalyst for a \$300M investment of state and private dollars, growing the College to 300 faculty members and over 10,000 students. Mechanical and Aerospace Engineering will figure prominently in these plans, and I am eager to collaborate with the College leadership to realize our goal of becoming a Top Ten College of Engineering.

With regard to growth of MAE, I am pleased to report we continue to be well-represented in UF's Preeminence campaign, bringing aboard **THREE NEW FACULTY MEMBERS** in addition to a new full-time lecturer. Together, Jonathan, Riccardo, Douglas and Dan bring a wealth of expertise to MAE, and I am looking forward to their integration into our teaching and research activities.

On the back cover you will see **AARON WALL**, an ME senior who accepted the challenge of helping the UF Athletic Association design a new seat bracket for The Swamp to replace obsolete hardware that was no longer supported by any vendors. Enter MAE for the solution! The story was featured on UF's home page and generated plenty of positive publicity for us. We are now working with UFAA to solve additional problems. I take great pride when our Gator Engineers are seen as a campus resource and answer the call with a can-do attitude.

You will read about the success of other student groups, including our **SMALL SATELLITE DESIGN CLUB**, which sent hardware to 90,000 ft. with the assistance of our friend and MAE Outstanding Alumnus Col. **JOE KITTINGER** and Sage Cheshire Aerospace and the continued world-class success of our **SOCIETY OF AUTOMOTIVE ENGINEERS** Formula SAE team. Our **ASME** chapter hosted the regional Human Powered Vehicle competition, and you will read about another MAE student start-up and our STEM outreach with PK Yonge school. Our students are clearly making things happen! I hope you enjoy reading about the success of our students and faculty from our Spring Awards banquet, where it was one of my greatest honors to welcome our newest group of Outstanding Alumnus Award recipients.

A person who would have been proud of all these successes was Dr. **GENE HEMP**, whose passing in April is deeply saddening to the MAE family. Gene played so many roles at the University of Florida over his 40+ year career all the way to the President's office, yet Gene always remained close to his home department. He was an amazing friend and mentor to many.

In this issue you will meet **ALEX WILLIS**, our new development officer. Alex was a receiver for the Gator football team under Steve Spurrier, and spent a year in Engineering before graduating in business administration. Alex is full of ideas and energy, and we are all excited to have him on the MAE team to help bring us to the very top. It is indeed a great time to be a Gator Engineer! ☀



Herbert and Nicole Wertheim along with students and faculty celebrate the naming of the Herbert Wertheim College of Engineering.



WELCOME TO OUR NEW FACULTY!

PROF. DOUGLAS E. SPEAROT

MAE welcomed Associate Prof. **DOUGLAS E. SPEAROT** (B.S.M.E. & Ph.D.) into its ranks for the Fall 2015 semester.

Spearot said he chose to accept the position at UF because his research work fit “very nicely with current research thrusts in the Department of MAE and the Department of Materials Science and Engineering.”

Spearot’s research is in the field of computational mechanics and materials science, and his group performs simulations on the atomic and mesoscopic length scales to study the behavior of materials subjected to mechanical and/or thermodynamic boundary conditions.

“A particular focus of my research group is the behavior of defects in materials, including grain boundaries and dislocations,” he said. “This work is fundamental research that will impact our future ability to ‘design’ or ‘engineer’ materials and structures for specific purposes.”

Spearot received his bachelor’s of science in mechanical engineering from the University of Michigan and a master’s of science and Ph.D. in mechanical engineering from the Georgia Institute of Technology.

He said he decided to become a professor because he loves “the daily interactions with students at both undergraduate and graduate levels.”

Spearot has previous experience teaching classes in the areas of mechanics of materials and computational materials science, which could include mechanics of materials at the undergraduate level and fracture mechanics at the graduate level. He will begin teaching courses at UF during the spring 2016 semester.

Until then, Spearot will be performing research, writing proposals and building collaborations with people in his new department.



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PROF. RICCARDO BEVILACQUA

A career as a professor appealed to Associate Prof. **RICCARDO BEVILACQUA** because it’s one of the few jobs where he would have the opportunity to continue learning and studying.

“Plus, I spend time with students, which keeps it entertaining,” he said.

Aug. 15 marked the one-year anniversary of Bevilacqua’s time at the University of Florida as an associate professor in the MAE department, where he’s taught graduate-level analytical dynamics. He will soon be involved in classes in the space arena and will teach undergraduate dynamics. In the future, he looks forward to teaching control classes.



Before his time at UF, Bevilacqua earned a M.Sc. in aerospace engineering in 2002 and a Ph.D. in applied mathematics in 2007 from the University of Rome, Sapienza, in Italy. In the year between finishing his M.Sc. and starting his Ph.D., Bevilacqua worked as a project engineer for Grupo Mecanica del Vuelo.

He is the recipient of two Young Investigator Awards — from AFOSR (2012) and ONR (2013) — and of the 2014 Dave Ward Memorial Lecture Award from the Aerospace Control and Guidance Systems Committee.

Bevilacqua and his wife, who is also an aerospace engineer, moved to the United States from Italy. He chose UF because his field required him to be at a university near Kennedy Space Center and “you can’t beat UF if that’s what you want!”

From the moment he began working for MAE, Bevilacqua received wonderful support from his colleagues.

“I believe that a collegial faculty, especially when it comes to teaching, has a tremendous benefit for the quality of the classes, which in turn provides a unique service to our students,” he said. “I have proof of the impact this has on students through the feedback they give at the end of every semester.”

DR. DAN DICKRELL

UF alumnus Dr. **DAN DICKRELL** is an instructor known for entertaining his students with new and sometimes wild hairstyles. In the fall of 2013, he sported a handlebar mustache, and in the spring of 2014, he rocked a mohawk in honor of UF's men's basketball team.



Dickrell chose to start teaching at UF in late 2007 because he believes Gainesville is arguably the best-kept secret in terms of places to live and work in the United States.

"UF is a well-regarded institution nationally, and the MAE department is among the best engineering departments on campus," Dickrell said. "It seemed like an easy choice."

Before he started teaching, he worked for two years at Sandia National Laboratories in the Microsystems Tribology group studying micro and nanoscale electrical contact reliability.

Dickrell primarily teaches engineering mechanics courses such as statics, dynamics and mechanics of materials. He said he became a professor because of his interest in helping people understand difficult concepts, and he enjoys teaching immensely.

He is the faculty advisor for a few student organizations such as Gator Gaming, Objects in Motion, Humans vs. Zombies and Surf Club.

Dickrell's favorite part of teaching at UF is being involved in shaping the minds of hundreds of engineering students in large courses.

"Some faculty find this daunting, but I have grown to appreciate the opportunity to be known by so many students in the college as a good teacher and someone who cared about their academic betterment," he said.

Dickrell said he enjoys seeing old students who come back for Career Showcase as recruiters or for football games and they tell him they enjoyed his class.

"It's those little moments that are return payment for the hard work that makes large enrollment courses run effectively," he said.

PROF. JONATHAN SCHEFFE

Associate professor **JONATHAN SCHEFFE** joined the MAE team just one year ago.

He earned his bachelor's of science at North Carolina State University and his Ph.D. at the University of Colorado Boulder before working as a senior research associate at ETH Zürich focusing on thermochemical energy conversion processes.



Scheffe said he chose to become a professor because it afforded him the opportunity to perform cutting-edge research in an environment that fosters collaboration, creativity and mentorship.

He chose UF specifically because the university was very supportive of the type of research he wished to pursue and made it clear that his facilities and colleagues would provide him with the best opportunity for success.

Scheffe currently teaches thermodynamics and plans to create a senior/graduate-level course focused on solar energy conversion in the near future. He is also involved in FISE (Florida Institute for Sustainable Energy).

Passing down knowledge and experience that he has had the privilege to absorb over the past years is his favorite part about teaching at UF.

"It's very rewarding to see students master a new subject," he said, "and it encourages me to want to learn even more and strive to become better."

MAE department chair Prof. David Hahn adds that energy, notably solar and renewable energy, has been a long-time strength of the department dating back to Prof. Erich Farber. He is pleased to see us continue in this tradition of energy research and teaching. 

Professor Strives to Develop Precision Agriculture Technologies

There are seven billion people living on Earth. The U.N. predicts that by 2050 the number will grow to 9.2 billion — and that's the medium projection.

Here's a question: How do we feed them?

It seems an unlikely inquiry to be answered by a mechanical engineer, but that's exactly MAE Prof. **JOHN SCHUELLER'S** life's work.

His method for combating the problem is developing technology for what is called precision agriculture.

Precision agriculture, Schueller says, stems from the idea that no two square meters of field are alike, and no two crops are alike. Each crop is going to require a different level of fertilizer, water and pesticide, he said. By recognizing this, the agricultural industry can cut down on excess and be smarter about production.

Since the turn of the millennium, Schueller has worked on developing machines that can automatically adjust to differences in the field and give crops just what they need, applying his expertise in automation and robotics.

This would involve pesticide applicators equipped with GPS and computers that know exactly where they are on the field and exactly how much pesticide — for example — is required for any given patch of land.

"Mother nature is variable," Schueller said. "She changes. A field that looks flat and even will have variability in it, and we need to respond to that."

It not only makes sense from the business perspective of wasting fewer resources, but it also makes sense from an environmental standpoint, he said.

"Soil is a natural resource," he said. "If you take all the nutrients out of the soil, that's bad. So you need to put back the nutrients you pull out when you harvest the crop, or you're damaging the environment."

And, he added, if too many nutrients are put back, they could become a pollutant.

Though the machines are automated, they still require a human rider to oversee the processes. That said, Schueller noted, the future could see precision agriculture moving in the direction of unmanned, fully autonomous machinery.

So how does a computer know exactly what the land is like and how much to apply?

Much of Schueller's early work was building these exact types of databases, collecting and storing analysis of agricultural lands. In essence, what he's doing now is simply the next logical step.

His pursuits in the field have taken him far and wide. He just returned from work trips to the United Arab Emirates, Germany, Latvia, Slovenia, Italy and Austria.

Another place Schueller regularly visits is UF's Citrus Research and Education Center in Lake Alfred, FL, where he works with Reza Ehsani, an associate professor in agricultural and biological engineering.

Ehsani characterized Schueller as a self-motivated, enthusiastic person with a deep knowledge of the field and a knack for explaining it.

"His strength is in simplifying a complicated problem," he said. "He can break down a complex question into smaller components."

And here's a perfect example of a complicated scenario: How does one feed an additional 2.2 billion people in 35 years?

With a little ingenuity and advanced technologies, Schueller said, humanity can at the very least put a dent in solving the problem. 

CONGRATULATIONS TO:

Prof. **SUBRATA ROY**, who was elected to the Royal Aeronautical Society's membership in September 2015.

Prof. **GHATU SUBHASH**, who was elected as "Member-at-Large" on the Society of Experimental Mechanics Executive Board (2015-2017), was a 2013

recipient of the ANS MSTD Significant Contribution Award, was named a Fellow of SEM in 2014, presented research on novel helmet designs to Senators Nelson and Rubio and Congressman Crenshaw in June 2014, and received the 2014 UF Technology Innovator Award.

SAGE-CHESHIRE BALLOON LAUNCH

UF STUDENTS ARE PLAYING A VITAL ROLE IN DEVELOPING TECHNOLOGY FOR FUTURE SATELLITE NAVIGATION SYSTEMS LIKE GPS.

The CHOMPTT (CubeSat Handling Of Multisystem Precision Time Transfer) design team was given the opportunity to fly a UF spacecraft's payload on the Sage-Cheshire high altitude balloon launch in October 2014. Four students were sent out to the deserts of southern New Mexico for about a week to mount CHOMPTT on a balloon's gondola and to collect data after the roughly eight hour flight, said Prof. **JOHN CONKLIN**.

CHOMPTT is a 3U CubeSat mission to demonstrate nanosecond-level time transfer from Earth to a low-Earth-orbiting CubeSat. Precision timing is critical for satellite navigation systems, including GPS.

The mission of CHOMPTT is to sync two atomic clocks, one on the ground



and one on the CubeSat, by performing a time-transfer using laser pulses. This demonstration could lead to more accurate GPS and navigation systems in the future.

"A key part of GPS is the precision of clocks because your location on the Earth is determined by measuring how long it takes radio waves to travel from the GPS satellites to your GPS receiver (say, your iPhone)," Conklin said.

All radio waves travel at the speed of light. If the time that a signal left a GPS satellite and was received by a phone is known, the precise distance between the phone and the satellite can be calculated. However, this only works if all of the GPS satellites are synchronized with respect to time standards on Earth. The Air Force does this periodically using radio transmissions to each of the 24 GPS satellites, Conklin said.

"Our technology is a more compact and lower power laser-based synchronization scheme," Conklin said.

"We will exchange laser pulses between a facility at the Kennedy Space Center and our instrument, which will be mounted on a CubeSat, a small satellite about the size of a loaf of bread."

The mission of CHOMPTT is to sync two atomic clocks, one on the ground and one on the CubeSat, by performing a time-transfer using laser pulses.

Chemical engineering senior Olivia Formoso has been on the CHOMPTT team for two years and was in charge of the mechanical design of the instrument and helped integrate it onto the larger Sage-Cheshire payload. She also went out on balloon recovery with the other engineers and technicians that worked on the launch.

"We tried to keep a visual on the balloon throughout the launch by following it in a car," Formoso said. "Eventually, we located it using its GPS tracker and trekked through some desert fields to find it."

The Sage-Cheshire balloon launch was a success. Since then, NASA has become interested in the technology to provide a GPS-like navigation system for future moon or Mars exploration.

Another student on the team, UF MAE graduate **SETH NYDAM**, is going into his first year of master's degree study in aerospace engineering. He has also been working on CHOMPTT for two years as the program manager and will continue working on the project as a payload specialist.

"As the program manager, I made sure everything ran smoothly," Nydam said. "I sat in mission control during the launch with Sage-Cheshire since we were integrated with their payload to time the power cycle to our experiment."

Nydam also assisted in the structure mounting of the payload, OPTI (Optical Precision Timing Instrument), to the balloon gondola. He plans to write his master's thesis on CHOMPTT and also hopes to gain technical expertise in payload design and integration satellites. This summer, Nydam is working at the Air Force Research Laboratory in New Mexico.

"This project is providing me and many students hands-on experience with hardware integration and software development for space systems," Nydam said. "I will be able to put this on my resume and have the technical expertise before I go into the work field."

"And once this launches," he said, "I can also claim that I worked on a satellite that is actually in space." 

CONGRATULATIONS TO:

Prof. **YONG HUANG** and Ph.D. students **RUITONG XIONG** and **ZHENGYI ZHANG**, who are recipients of the Outstanding Paper Award from the Society of Manufacturing Engineers. They presented the paper, *Exploring 3D Printing of Y-Shaped Vascular Constructs*, at the 43rd Society of Manufacturing Engineers North American Manufacturing Research Conference in Charlotte, NC.

ROSAMARIA TRICARICO, a student of MAE Prof. **ROGER TRAN-SON-TAY**, who won first prize in the master student paper competition at the Summer Biomechanics, Bioengineering and Biotransport Conference in Utah. Her paper explored computational models of blood flow as it related to abdominal aortic aneurysms treated with the chimney graft technique. She also worked with Dr. Scott Berceli.

Ph.D. student **CODY KUNKA**, who was awarded a Triple Crown of graduate fellowships with the National Science Foundation GRFP, the Department of Defense SMART Fellowship, and the Department of Defense National Defense Engineering Graduate Fellowship. He also received second place at the International

Student Presentation Competition at the 2014 Annual SEM conference and Exposition and received "Best Undergraduate Research Paper" at the Annual MAE Awards and Honors Reception in April 2014.

Ph.D. student **MATTHEW DEVRIES**, who finished in 2nd place at the British Society for Strain Measurement Young Stress Analyst Competition at the International Conference on Advances in Experimental Mechanics this summer. Both Kunka and Devries work under the direction of Prof. **GHATU SUBHASH**.

Prof. **WARREN DIXON** and his students **MATTHEW BELLMAN, TENG-HU CHENG** and **RYAN DOWNEY** on winning the O. Hugo Schuck Award at the American Control Conference in 2014. This is the group's second time winning the award. "To win the Schuck award is a lifetime career goal," Dixon said, "so we are very happy to have been selected."

Graduate student **SERHAT OBUZ**, who won the award for Overall Best Student Paper at the IEEE Multi-Conference on Systems and Control held in Sydney, Australia.

FORMULA SAE

UF engineering students problem-solve their way to victory

UF finished second overall out of 109 teams that competed at the 2015 Michigan Formula Society of Automotive Engineers (FSAE) competition in May. This win ranked UF at fifth place internationally out of 513 registered universities competing in the FSAE design series — the highest ranking the school has ever received in this highly competitive event.

Formula SAE, an intercollegiate product design and development competition, is the largest student competition in the world and is divided into eight regional competitions, which take place in the United States, Germany, Japan, Austria, the United Kingdom, Italy, Brazil and Australia. The U.S. Michigan competition is the largest and longest running of the eight. Formula SAE started in 1979, and UF has participated every year since 1991.

About 40 UF students, 25 of which were active members, worked on the project from about June 2014 to May 2015.

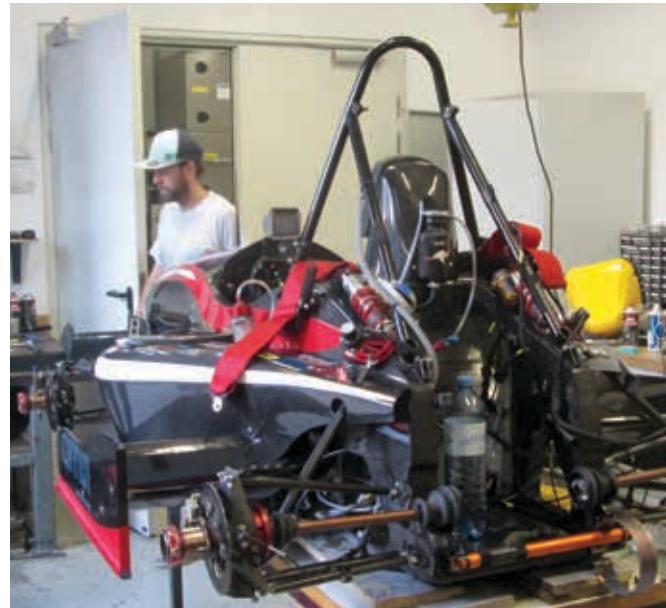
According to student team member **ANDREW CHEUNG**, a fifth-year MAE student who has been involved in Formula SAE since his freshman year, this competition is more than just a hard engineering problem.

"The creators of the competition have made it a holistic experience of running a profitable start-up company," he said.

The concept behind Formula SAE is that a fictional company has contracted a design team to develop a small but high-performance formula-style race car. The prototype race car is evaluated for its potential as a production item.

"Formula SAE promotes careers and excellence in engineering as it encompasses all aspects of industry, including research, design, manufacturing, testing, developing, marketing, management and financing," MAE Senior Lecturer **MICHAEL BRADDOCK**, the team's faculty advisor, said.

Each student team designs, builds and tests a prototype based on a series of rules in place to ensure driver safety and promote clever problem solving. Team efforts are



based on engineering justifications and soundness of their designs, final vehicle cost, prototype performance and the profitability of their vehicle.

"Collegiate programs like this take students out of the classroom and allow them to apply textbook theories to real-world projects," Braddock said.

Braddock spends about 20 hours per week working with students on project management, manufacturing and component testing. He said he also teaches the students strong design, analysis and manufacturing skills.

"But again, it's the students who do all of the real work," Braddock said. "I cannot express how proud I am of the core group of members each season who not only make the program possible, but enable our team to compete shoulder-to-shoulder with the very best students in the world."

DYLAN EDMISTON, who graduated in the spring with a B.S. degree in mechanical engineering, saw an FSAE car on his third day at UF and joined the team the next day. He said the work he has done with FSAE led him into his career path with motorsports.

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UF STUDENTS HOST ASME CHALLENGE, LEARN FROM EXPERIENCE

The American Society of Mechanical Engineers (ASME) offers an array of competitions for mechanical engineering students to gain hands-on experience. UF was chosen to host this year's human powered vehicle challenge (HPVC) from May 8-10, which involved about 200 to 250 student participants.

The competition has existed for decades and has two sites, one in the east and one in the west, said UF's ASME faculty advisor Prof. **WILLIAM LEAR**.

HPVC began in 1983 and "provides an opportunity for students to demonstrate the application of sound engineering design principles in the development of sustainable and practical transportation alternatives," according to ASME.org.

During the competition, students work in teams to design and build efficient, highly engineered vehicles for everyday use. UF placed seventh overall in this year's competition, according to Lear.

"Hosting events, whether competitions like this or regional meetings, is one of the purposes of the organizations, giving students a chance to learn how to do that," he said. "It's remarkably complex, hence it builds teamwork and offers leadership opportunities."

KARL SPERL, a third-year mechanical engineering student, has been involved with the UF chapter of ASME since his freshman year. Sperl was the lead contact for this year's HPVC, and he along with another two UF students did a significant amount of organizing for the

event. Sperl said about 15 to 20 other students also helped out with the planning.

"I helped the judges and other teams with any questions regarding the event," Sperl said. "I also helped plan and set up the courses."

Participating in this competition taught Sperl that nothing is ever going to go according to plan and the ability to adjust is an essential skill when planning an event.

Due to the timing of the event — between semesters — many UF students were out of town, but the team had to find volunteers.

"Other schools participating in the event volunteered to help us set up the race courses, and their help allowed us to make the event a success," Sperl said. "Some teams would wake up as early as 5 a.m. to help us move equipment to the race sites."

Sperl said he believes there are many important characteristics you cannot learn in a classroom, and ASME provides the opportunity to network with other students and professionals in engineering while gaining hands-on experience through participating in design teams.

"Just a tip for anyone who is unsure whether to join an organization or design team: Just do it," Sperl said. "You'll find that there are many other people with similar interests, and who knows what opportunities will come up." 



SPOTLIGHT

Former MAE Ph.D. students **MATTHEW BELLMAN** (left) and **ALAN HAMLET** (right) started a company spin-out, MYOLYN, from Prof. **WARREN DIXON'S** lab. The company's mission is to create cycling devices for people with neurological disorders. The duo has already experienced success, from winning first place in Gainesville Area Innovation Network's (GAIN) FastPitch competition and winning second place in the UF Business College's Big Idea Business Plan Competition. ☀

AMY LEE, a UF mechanical engineering graduate, has become External Venture Manager for CertainTeed. She has started blogging for the company, which you can follow at <http://blog.certainteed.com/author/amyLee/>.



PROFILE:

Min-Wen Wang

Dr. **MIN-WEN WANG**, a professor at the National Kaohsiung University of Applied Sciences (KUAS), was born and raised in Tamsui, a town in suburban Taipei, Taiwan. He grew up in a large family and was expected to help out around the house, leaving little time to study or play until he got to college.

"Though it was a little bit tough during my childhood, I enjoyed it and had great memories with my brothers and sisters," Wang said.

After serving in the Chung-San Institute of Science and Technology (CSIST) for four years in the jet propulsion lab, Wang decided to come to the United States to pursue a master's degree.

Wang applied to UF's mechanical engineering department and began his studies in May 1989. He recalls many good memories of the campus, his professors, fishing in Cedar Key, and tubing at Ichetucknee Springs.

Attending school in the U.S. was significant for Wang because he said the U.S. is a big cultural melting pot, and UF allowed him to receive and learn the latest knowledge and technologies.

"The two years of the master's program really let me open my eyes to the new world," Wang said. "UF is great both in academics and sports."

During his time here, Wang enjoyed the many aspects of student life. However, his favorite memory of all is his introduction to Gator football.

"On one of the Saturdays in September 1989, I was shocked that there were so many people dressed in orange and blue," Wang said. "Then I found out there was a football game that day."

Wang began watching football games with other students from his home country of Taiwan and learned the sport.

"Since then, I follow our football and basketball programs," Wang said. "I check Gator sports every morning when I turn on my computer."

His love for UF did not end with football, though.

"I enjoyed the two years I spent for my master's degree in Gainesville," he said, "and the two year's experience convinced me to study for my Ph.D. at UF."

Wang became Prof. **JOHN SCHUELLER'S** first Ph.D. student, which Wang believes was quite an honor.

Armed with the Ph.D., Wang had the opportunity to work for the Industrial Technology Research Institute (ITRI), the



largest
and best
industrial
technology
research institute
in Taiwan.

Under Schueller, Wang received guidance and the opportunity to integrate different technologies in solving problems. They integrated hydraulics, optimal control, optimal design, GIS and GPS in Wang's thesis study.

"Cross-disciplinary learning under Prof. Schueller has helped me a lot in cooperating with clients from industry and getting projects from the government," Wang said.

In 1994, Wang returned to Taiwan, where he joined ITRI. After working on the development of an advanced injection-molding machine for seven years, he began his teaching career with Leader University as an associate professor.

A year later, Wang went to the mechanical engineering department of KUAS as an associate professor, later becoming a professor in 2010.

"I really like to work at KUAS," Wang said. "It gave me the chance to fulfill my dream, so I can share what I know with the students and do the research topics I'm interested in."

At KUAS, Wang is working on polymer micro-fabrication, where he uses micro-molding, roll-to-roll processing, inkjet printing and imprinting to make micro parts like dental implants, micro needles, lenses, prism film and light-guide film in his lab. In addition to his research, he has more than 20 worldwide patents.

In 2014, Wang was voted by his colleagues as one of the best teachers at KUAS.

"I like to teach and enjoy discussing with my students," Wang said. "Students are like my friends so I am excited to go to work every morning, just like visiting friends." ☀

In Memoriam



Our department remembers Dr. **GENE W. HEMP**, who passed away at the age of 76 on April 27, 2015.

Hemp worked in the mechanical and aerospace engineering department as a professor emeritus and in several other capacities. To commemorate his dedication, he received the Presidential Medallion in 2004, which recognizes individuals

who make major contributions to the university.

In addition to serving as an engineering professor, he is also remembered as being the man who led UF through a difficult series of budget cuts in the 1990s.

Hemp is an alumnus of the University of Minnesota, where he earned four degrees: his bachelor's in aeronautical engineering, an MBA, a master's in mechanics and materials and finally his Ph.D. in 1967. He would move on to being a UF engineering professor that same year.

He took his first administrative position at UF in 1975, becoming assistant vice president for student affairs. He went on to become the interim dean of the graduate school, director of sponsored research, vice provost, and senior associate vice president and special assistant to the president.

He served from 1999 to 2000 as acting president and interim provost, as well as vice president for academic affairs at Florida Gulf Coast University. He also served as an interim president / CEO at New World School of the Arts in Miami, FL.

"Dr. Hemp will be remembered for his tremendous commitment to higher education, and in particular engineering education," said Cammy Abernathy, dean of the UF College of Engineering.

"He served the college, the university and the Florida university system in so many capacities, and always with selfless distinction. He was greatly appreciated in the college and around campus and will be sorely missed." ☀

KURTZ cont. from pg. 1

Kurtz credits part of his ability to staying disciplined to lessons learned from former Gator basketball coach Billy Donovan, now with the Oklahoma City Thunder.

"Coach Donovan was always prepared for every situation," he said. "I took this lesson and applied it to my schoolwork. I always did my work and felt very prepared for every exam."

Though Kurtz walked away from UF with a degree in engineering, today he is still staying close to his favorite game.

After Gator assistant coach Matt McCall took the job as the head basketball coach at the University of Tennessee Chattanooga, Kurtz followed, accepting a job doing video for the basketball team.

Kurtz had no prior experience in video production, but he couldn't turn down the opportunity to stay in basketball.

He's learned on the fly how to film, how to edit and how to create videos that will help motivate and educate the team — and also ones that will help recruit new players.

In his free time, he still shoots hoops, be it by himself in the gym or pickup games in the rec centers, all the while keeping his eyes set on his ultimate goal of one day following in Donovan's footsteps and becoming a head coach.

Kurtz said his engineering degree can help him with this dream because it taught him how to deal with problems and adapt.

"You have to learn," he said. "You have to make adjustments and have to be ready for when things don't work as planned." ☀

FORMER GATOR RECEIVER NOW GIVING BACK TO MAE

UF alumnus **ALEXANDER WILLIS** played wide receiver on the Gator football team from 1996 to 2000, during which time the Gators won a National Championship and Willis took on the role of co-captain in his senior year.

He misses the competitive nature of football, but most of all he misses the camaraderie and support that comes with being on a team.

Now, about 15 years later, he's rediscovered that feeling at the UF MAE department.

"Working with Dr. David Hahn, professors and alumni really reminds me of that football atmosphere when you have a team of people who work hard every day for their goals," Willis said. "Everyone comes together and is passionate about making MAE the best it can be."

UF hired Willis on May 11 as the MAE Associate Director of Development. His position entails talking to and meeting with MAE alumni in an effort to reconnect them with their Gator roots.

"It's so encouraging to see people who graduated in '55 or '65 and see the passions they have for mechanical engineering and the passion they have for UF, regardless of what side of the country they're on," Willis said. "It's been eye-opening to see how big the Gator Nation is."

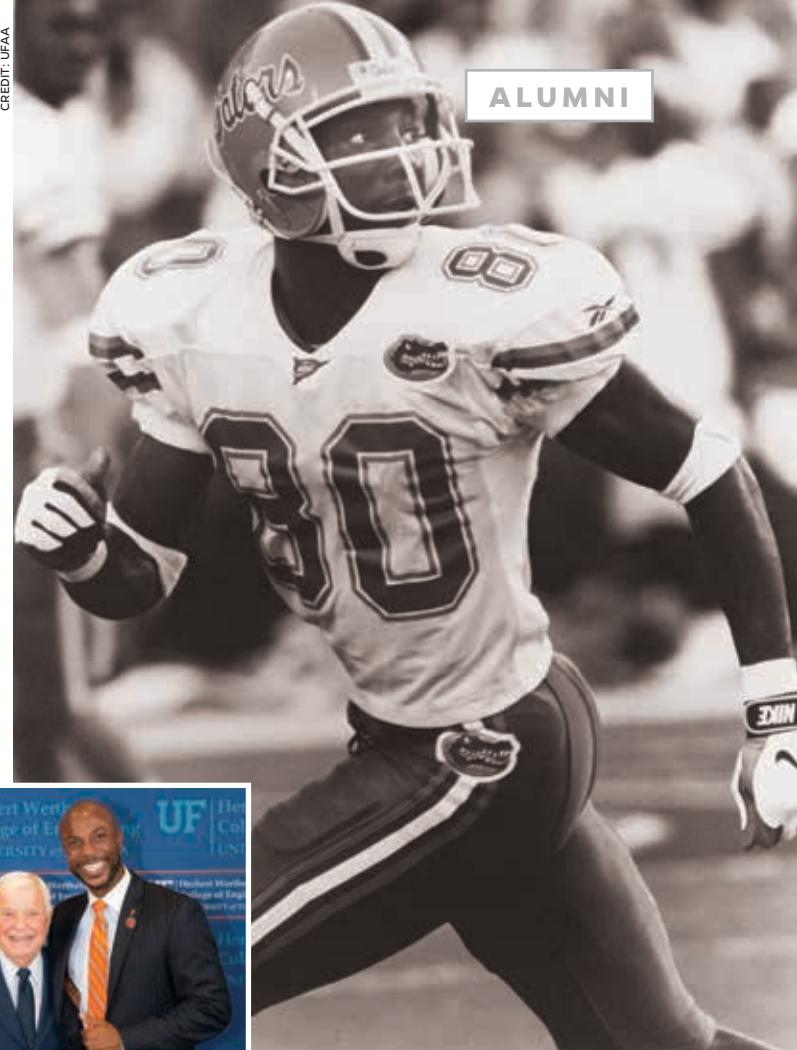
In any given week, Willis can be traveling anywhere from Dallas to Chicago to meet Gator grads and discuss their accomplishments, the progress of the department and ways in which they can be a part of the MAE community. Some alumni even come back to campus to talk to current students about their careers and offer advice for success both in school and later in life.

Willis considers this position his own opportunity to give back.

"UF really shaped my life," he said. "To be able to come back now and raise support for something I care about — it made a huge difference for me." ☀



◀ Alex Willis along with MAE Distinguished Alumnus Gen. Paul Albritton, USAF (Ret) at the Wertheim College of Engineering celebration.



FORMULA SAE cont. from pg. 8

"I developed a lot of experience with motorsports electronics and data acquisition and analysis skills," Edmiston said while at a motorsports race in Canada. "Before I even knew of FSAE, I aspired to be a race car engineer. I've had several internships, which were only possible due to the experience I gained from FSAE."

Team member **JONATHAN NUNEZ**, who also graduated in the spring with a chemical engineering degree, said

that this win was a multi-year effort that took a lot of dedication from very talented individuals and careful planning.

"We are doing our best to make sure we can repeat this next year, but it will be an even larger challenge," Nunez said. "UF has some of the best and brightest students in the world, though. We will be back." ☀

2015 ANNUAL AWARDS

UNDERGRADUATE SCHOLARSHIPS

THE BOEING COMPANY

Joshua Anton
Brittney Lane
Alexander Schneider
Jessica Valdes

JOHN B. BOY/US SUGAR

Chase Camarotti
Allison Johnson
Jonathan Wood

FYFE FAMILY FOUNDATION

Miriam Dennis
Eduardo Moreno
Erick Stein

STEVE HARGRAVE

MEMORIAL
Samantha Gamble

MERTON T. HARTMAN JR.

Nick Sholl

SUNG AND YVONNE LU

Neil Glikin

SYLVIA T. MCKENNEY

Alyssa Carraha
Marshall Petrik
Andrew Popp
Elysse Rantanen

KNOX T. MILLSAPS

MEMORIAL

Brian Chinn

MOSAIC

Brianna Rodriguez

THE ERICH FARBER SCHOLARSHIP

Hadyan Ramadhan

BRIGADIER GENERAL

JAMES P. AND EDYTHE P. ALBRITTON SCHOLARSHIP

Emily Steele

2015-16 UNIVERSITY SCHOLARS

Diana Alonso (Anil Rao)
Kevin Buck (Mrinal Kumar)
Chase Carmorotti (Jacob Chung)
Alyssa Carraha (Warren Dixon)
Lucas Murphy (Shannon Ridgeway)
Jason Nezvadovitz (Carl Crane)
Adrian Piedra (Hitomi Greenslet)
Michael Reitz (Kamran Mohseni)
Sergey Rogachev (Ghatu Subhash)
Cory Rogers (Jonathan Scheffe)
Cesar Santoyo (Riccardo Bevilacqua)
Federico Zegers (Thomas Angelini)

MAE 3D RAPID PROTOTYPING CONTEST (Honorable Mentioned)

Sumeet Gudi – 3rd Place
Drew Gonslaves – 2nd Place
Tim Williams – 1st Place

MAE STUDENT LEADERSHIP AWARDS

Stephen T. Bethel (ASE)
Max A. Rogozinski (ME)

SUNG AND YVONNE LU OUTSTANDING SENIOR AWARDS

Jacob D. Shapiro (ASE)
Melissa C. Soderquist (ME)

COLLEGE OF ENGINEERING'S FOUR YEAR SCHOLAR (Honorable Mentioned)

Rachel Hoffman

MAE TEACHER OF THE YEAR AWARD

John Conklin

FACULTY RETIREMENT

Skip Ingleby

HONORABLY MENTIONED

Norman Fitz-Coy
25 Years of Service at UF
Renwei Mei
25 Years of Service at UF

MAE STAFF AWARDS

Jennifer Brown
10 Years of Service at UF
Salena Robinson
30 Years of Service at UF
Shirley Robinson
35 Years of Service at UF
Jeff Studstill
35 Years of Service at UF

MAE OUTSTANDING STAFF AWARD

Carrie Pridgeon

2015 UF MAE OUTSTANDING ALUMNUS AWARDS

Carl Ahlers
Elisabetta L. Jerome
David M. Jerome
Sanjoy Malik
Walter E. Rose

MAE UNDERGRADUATE RESEARCH SYMPOSIUM — POSTER AWARD WINNERS

KNOX T. MILLSAPS OUTSTANDING UNDERGRADUATE TECHNICAL PAPER

Thomas I. Linehan
Matthew W. Devries

KNOX T. MILLSAPS TEACHING ASSISTANT AWARD (GRADUATE)

Jonathan T. Brooks
Jason T. Cantrell

GRADUATE STUDENT RESEARCH AWARDS

Yifei Sun (DSC)
Xiang Chen (SMDM)
Joseph J. Thalakkottor (TSFD)

BEST DISSERTATION AWARD

Rushikesh L. Kamalapurkar (DSC)
Kyle G. Rowe (SMDM)
Nadim Zgheib (TSFD)



F.I.R.S.T. Robotics - For Inspiration and Recognition of Science and Technology

These P.K. Yonge students' robotics team, mentored by MAE Prof. Carl Crane, went on to represent the Orlando region in St. Louis at the F.I.R.S.T. Robotics Championship.

Acknowledgements

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MAE student Aaron Wall poses with his redesigned seat back bracket upgrade in The Swamp. See story at www.mae.ufl.edu.

