Table of Contents

3 Message from the Chair
5 New Leadership Appointments
7 Stories of Sabbatical
10 New Faculty
13 Faculty Focus
16 Alumni Attention
21 MAE Staff Stars
24 Campus Connections
25 Knights Love
26 Knights Aim High
28 FIRST Knight
30 In Memoriam
32 Industrial Advisory Board
33 Industrial Advisory Board Partners
34 Upcoming Events
35 MAE Fall 2015 Seminar Series

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The University of Central Florida is an Equal Opportunity and Affirmative Action Institution.
Welcome to the first issue of *igKnight*, the official magazine of our Department of Mechanical and Aerospace Engineering (MAE) at the University of Central Florida. The Department has gone through major changes over the decades and every year many new faces have been wandering MAE’s hallways, classrooms, labs, and offices. Rarely are the culture and social fabric captured for future generations, and memories are often gone with the souls who once filled the engineering buildings or simply lost forever. So we created the editorial board of this magazine, and met on a regular basis over the Spring and Summer of 2015 in an attempt to recollect some of the old stories and document new ones. We also have many exciting plans for the future; so we decided to include them as well. But above all, this magazine is more about promoting a sense of community and is part of a larger effort to reach out and engage all MAE constituents. We have plans for a range of events and long-term initiatives, such as the Fall 2015 Alumni Leadership Conference to be held on Friday, October 23, 2015. As you flip through these pages you will find stories about our students, staff, faculty, and alumni. I hope some will strike a chord, some will put a smile on your face, and others will provide useful information.

Let me start with our current state-of-affairs and our hiring plans for the next couple of years. In the most recent tally the Department stood at 26 tenured (T) and tenure-earning (TE) faculty members, 4 lecturers, and 13 staff members; the faculty body is expected to grow to 37 T/TE members by 2017. As the University adds new faculty lines overall (an additional 100 are planned for next year), we expect to continue the hiring spree. This comes after years of continuous growth in our number of undergraduate students without concurrent increase in faculty and staff. As you will see on page 6, the student population has grown from 1,480 in 2008 to over 2,900 today.

On Page 11, you will find a story about three of our new hires who joined the Department in the Spring 2015 Semester. Professor Robert L. Steward, an expert on cell mechanics came to us from Harvard School of Public Health where he served as a research fellow in the Laboratory for Molecular and Integrative Cellular Dynamics; Professor Kareem Ahmed, an expert on propulsion and energy systems, moved from Old Dominion University where he served as an Assistant Professor; and we welcomed as a full-time Lecturer, Dr. Justin Karl, who will teach courses in Measurements, Kinematics of Mechanisms, Fracture Mechanics, and Solid Mechanics. I am also new to the Department, coming from Rensselaer Polytechnic Institute, and my research interest concerns convective heat transfer at the micro scale.
Our Bio-engineering program is expected to get a significant boost with at least two additional faculty hires. Our close collaboration with the College of Medicine will further advance the program to national and international prominence. Strategic hires in Manufacturing are planned to support the new ~$200M International Consortium for Advanced Manufacturing Research (ICAMR) in Osceola County. Additional hires are also expected in Aerospace Engineering and other core areas.

Now back to our history. It is true there are several old photos in the hallway leading to my office depicting some stern and some joyful faces of past Department chairs. Perhaps if we do enough scavenger hunts in MAE labs, we will be able to find testimonies of past civilizations frozen in time — an old photo or two, an old technical journal, and an obsolete experimental artifact. A couple of months ago while cleaning up the lab I inherited from Dr. Faissal Moslehy, my post-doc, Dr. Yingying Wang and my PhD student, Arash Nayebzadeh, showed me an old computer. They asked if I knew what it was used for and how much Faissal paid for it. It turned out that this trashed item originally cost about $66,700 in 1993 — now, worthless. Yingying also showed me an old IBM punch card used by programmers in the 60’s and early 70’s. It made me realize that there is so much we don’t know about our own history; it also made me much more motivated to reach out to our alumni, former faculty, and staff in an attempt to be better educated about our past. So, in an effort to reconstruct some of the lost MAE history, please consider contributing an article or a short story to future issues of this magazine from your times at this great institution. If you are a current student, staff member, or faculty member, please consider writing a story or two about recent events to capture some of the vibrant nature of our community.

Lastly, I would like to officially invite you to our Fall 2015 Alumni Leadership Conference to be held Friday, October 23rd. For more information please flip through these pages and review the “Upcoming Events” section to find out more about the MAE Leadership Conference and other exciting activities on campus.

Go Knights and Charge On!

Yoav
Dr. Yoav Peles
Department Chair
Mechanical & Aerospace Engineering
University of Central Florida
New Leadership Appointments

In the last several months, the Department has gone through a leadership transition. Besides welcoming the Department Chair in late December 2014, three senior administrative appointments have been confirmed — Dr. Alain Kassab, Dr. Jihua ‘Jan’ Gou, and Dr. Joe Cho. The new leadership is leveraging the strong infrastructure left by their predecessors, Dr. Kurt Lin (Undergraduate Program Coordinator) and Dr. Alain Kassab (Graduate Program Coordinator).

Effective February 1, 2015, Dr. Alain Kassab has been leading the newly established Bio-medical Engineering program in MAE. Alain brings an extensive and impressive record of top-tier research in the biomedical engineering domain. He has been a strong advocate of bio-engineering related initiatives for many years and has much to contribute to the new program. As the director, Alain will oversee the development of a viable bio-engineering program, lead the Department faculty recruitment, and develop a long-term strategic vision. He has already started to take a range of initiatives, such as curriculum development, degree offerings and certification, target funding, student enrollment, and research themes. Alain has been with UCF for the last 23 years and has held several other senior positions; the most recent was the Graduate Program Coordinator (GPC).

Since May 18, 2015, Dr. Jihua ‘Jan’ Gou is the new GPC. He replaces Dr. Seetha Raghavan, interim GPC when Dr. Kassab became the bio-medical engineering program director in February 2015. Dr. Gou graduated from Florida State University in 2002. He joined UCF as an Associate Professor in 2007 from the University of South Alabama where he was an Assistant Professor of Mechanical Engineering. Jan received his tenure in 2010 and became a full professor in 2013. Since receiving his tenure, Jan has played a critical role in shaping many of the Department's affairs. As the new GPC he will lead the Department's ever-growing MS and PhD programs, including recruitment of new students, admissions, curriculum, accreditation, fellowships, assignment of graduate teaching assistants, graduate student orientation, advising, examination, and supervision of the graduate academic support staff, which currently consists of one full-time USPS employee and several student assistants. The next big project for the graduate program is the creation of a promitional video. Be on the lookout for its debut in spring!
Since April 2014, Dr. Hyoung Jin ‘Joe’ Cho has been the Associate Department Chair and the Undergraduate Program Coordinator. Immediately upon his appointment, Joe had a mammoth task to prepare the Department for the accreditation process administered through the Accreditation Board for Engineering and Technology (ABET). With a few bumps and the help of his dedicated staff — Ms. Lynn Grabenhorst, Coordinator of Academic Programs, Ms. Elizabeth Mitzel, Program Assistant, Mr. Eric Harloff, Program Assistant — and others, like Mr. Ajith Perera, Mr. Abdulbaset Benwali, MAE’s Senior Engineers, and Dr. Lionel Hewavitharana, the Senior Design Coordinator, and Dr. Kuo-Chi “Kurt” Lin — the ABET visit was successful.

Besides overseeing ABET affairs, the position entails leading ongoing undergraduate curriculum development, admissions, undergraduate student orientation, advising, examination, assignment of undergraduate teaching assistants, and supervision (direct and indirect) of the undergraduate academic support staff. Joe will also assist the Department Chair in general oversight and operation of the Department as necessary including exercising signature authority in the absence of the Department Chair for documents requiring the chair’s signature, communicating with faculty regarding administrative issues, and rendering decisions elevated to the chair’s level.

Fall 2015 Enrollment

<table>
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<th>778</th>
<th>BS AE Students</th>
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<tr>
<td>1,958</td>
<td>BS ME Students</td>
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<tr>
<td>42</td>
<td>MS AE Students</td>
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<tr>
<td>80</td>
<td>MS ME Students</td>
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<td>80</td>
<td>PhD ME Students</td>
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Stories of Sabbatical

Three of our faculty members – Professors Louis C. Chow, Nina Orlovskaya, and Jihua (Jan) Gou – went on sabbatical leave during the 2013 – 2014 academic year. They had very productive and interesting experiences, and we would like to share these with you all.

**Professor Louis C. Chow** has been with the Department of Mechanical and Aerospace Engineering at UCF since December 1995. He joined as a Professor and Department Chair and continued his Chairmanship until December 2000. He has also held other important administrative positions in the College of Engineering and Computer Science such as Interim Dean, Interim Director of the Advanced Materials Processing and Analysis Center, and Associate Dean for Research and Administration.

Dr. Chow’s sabbatical leave (his first ever) was spent at the Air Force Research Laboratory (AFRL), Aerospace Systems Directorate (RQ), which allowed him to participate in the Department of Defense (DoD)–Energy Optimized Aircraft (EOA) program. Energy Optimized Aircraft is a DoD-wide National Plan started in May 2010. The EOA National Plan, an important piece of DoD R&D activity in Air Platforms, provides revolutionary capabilities to the warfighter by enabling energy efficient military aircraft with enhanced operational capabilities, minimized thermal constraints, and increased energy and power growth capacity. The four core areas in the EOA National Plan are (1) Integrated Vehicle Energy Technology (INVENT), (2) Power and Thermal Management for Small/Micro Unmanned Aircraft Systems, (3) Integrated Propulsion, Power, Thermal Management System Technology (IPPTMS), and (4) Helicopter Platform More Electric/Hybrid Power Platform Adaptation.

To quote Dr. Chow “I have gained first-hand knowledge of most of the technical issues in the EOA National Plan, especially on INVENT. I am familiar with the thermal management and health monitoring aspect of electrical actuation systems in aircraft. Electric flight actuation is a multi-disciplinary subject and involves the mechanical, thermal, electrical, and control disciplines. A three-year research project on thermal management of electromechanical actuators is now underway.” When Dr. Chow is not hard at work, you can find him at the lake fishing. Like any proud fisherman, he was happy to provide us a photo of his latest catch.

For more information on Professor Chow’s research activities, please visit his website: Miniature Engineering Systems Group at http://www2.mmae.ucf.edu/~mini/
Professor Nina Orlovskaya, Associate Professor since August 2012, joined the Department as an Assistant Professor in December 2006 working on boron-rich solids, fuel cells, and ultra-high temperature ceramics. She received the NSF CAREER Award in 2008. She spent her sabbatical year at Ecole Polytechnique Federale de Lausanne (EPFL) in Lausanne and Swiss Federal Laboratories for Materials Science and Technology (Empa) in Duebendorf, Switzerland. She spent 9 months at EPFL working on strengthening of metal matrix composites by hard ceramic phases such as boron carbide and alumina. She used the EPFL home-built Nut Cracker, an indentation device, which allowed in-situ indentation and investigation of cracking and fracturing of brittle strengthening ceramic phases in aluminum-based metal matrix composites and also the hard hexagonal OsB$_2$ ceramic synthesized at UCF. After 9 months at EPFL, she continued her research at Empa, where she performed microstructural investigation of hexagonal OsB$_2$ and worked on several manuscripts for publication.

During her free time Dr. Orlovskaya extensively explored Switzerland. She visited many Swiss cities, but eventually the cities lost their appeal. She “fell” in love with the Swiss Alps and spent every weekend hiking in the Alps. However beautiful, mountains do present danger. Dr. Orlovskaya met with an accident in the Alps, and had to be airlifted to the hospital. Nonetheless, she still dreams of returning to the Swiss Alps for more hiking (and adventures).

For more information on Professor Orlovskaya’s research activities, please visit her website: Ceramic Materials for Energy Applications at http://research.cecs.ucf.edu/CHEA/
Professor Jihua (Jan) Gou joined the erstwhile Department of Mechanical, Materials and Aerospace Engineering at UCF in August 2007 as an Associate Professor and rose to the rank of Professor in August 2013. During the 2013-2014 academic year, Professor Gou spent his sabbatical leave at the Southwest Jiao Tong University (SWJTU) in Chengdu, China.

At UCF, Professor Gou and his group have been working with polymers and polymer-based nanocomposites for several years. They have made some very significant contributions in terms of developing 3D printing filaments based on cellulose/shape memory polymer composite technology. Natural products, e.g., agricultural residues such as rice and wheat straws, which contain 30–50% cellulose of the plant’s dry weight. During his sabbatical year, Professor Gou worked with Professor Zuowan Zhou’s research team in the Institute of Polymer Materials at SWJTU to develop an eco-friendly method to separate cellulose from plants using ionic liquids. The isolated cellulose was further treated to obtain cellulose nanocrystals (CNCs) through controlled dissolution, chemical treatment, and regeneration. CNCs are lightweight, very strong, and exhibit good thermal and chemical stability, and biodegradability. They have used CNCs as reinforcements in polyurethane (PU) to develop shape memory polymer (SMP) smart nanocomposites that remember and recover the original shape after being deformed in response to an external thermal stimulus. These composites could be extruded into filaments with a diameter of 1–2 mm and these are printable on most commercially available fused deposition modeling (FDM) based 3D printers such as Stratasys, MBot and MakerBot. According to Professor Gou “These filaments can be printed into smart composite structures for many potential applications in aerospace, biomedical, sports, automotive, and energy sectors. A pilot production line has been set up at the UCF Composite Materials and Structures Laboratory in order to control the filament quality and scale up the production. The commercialization of the filament technology for 3D printing is being sought with HB Polymer, which is a local company in Sarasota, FL.”

For more information on Professor Gou’s research activities, please visit his website: Composite Materials & Structures Laboratory at http://www.mae.ucf.edu/Faculty/JGou/CMSL/
New Faculty

This Spring 2015 semester we welcomed four new faculty members to the Department. In addition to our chair Dr. Yoav Peles, we welcomed Dr. Justin Karl, Dr. Kareem Ahmed, and Dr. Robert L. Steward. They bring fresh perspectives and expand our research and teaching portfolios. We asked them to share a paragraph or two about their personal lives, such as hobbies, kids, where they grew up, connection to UCF, career challenges, etc. Their stories are below.

Dr. Justin Karl was born and raised in Ocean City, Maryland. He eschewed the surf lifestyle in favor of pursuing rocket science at Embry-Riddle Aeronautical University in Daytona, FL. There he earned three degrees in Aerospace and Physics before transitioning to UCF in pursuit of his PhD. During his time as a graduate student at UCF, he worked in the energy and aerospace industries full-time. After his department-sponsored fellowship placed him in instructor positions, he quickly realized the value of teaching mechanical and aerospace engineering courses. This newfound passion led him to pursue an MAE adjunct position after graduation. In late 2013, Dr. Karl committed to a full-time Lecturer position, and currently teaches a large variety of undergraduate and graduate courses. He enjoys giving back to the UCF community, engaging in capstone design, career advisement, mentoring of students from the Office of Diversity and Inclusion (ODI), and advising of organizations like SEDS (Students for the Exploration and Development of Space), the professional engineering fraternity Theta Tau, and Aviator Knights.

Outside of MAE, Dr. Karl is a collaborator with the Center for Lunar and Asteroid Surface Science, is a Senior Associate of the Space Studies Institute, a Payloads Coordinator for the nonprofit Citizens in Space initiative, and the Director of Terran Sciences Group. Through his small business, nonprofit, and research ties, Dr. Karl seeks to solve problems in the growing private space industry, while providing outreach and mentoring that expand opportunities at the student and early-career level.

Although always engaged in a multitude of professional activities, Dr. Karl does find time for a life outside his work as well. In his off time, you might find him sailing, flying (yes, he is a pilot too!), doing yoga, or having a bit of quiet time just jogging through his neighborhood. He especially enjoys any activities that will take him outdoors, particularly when he can incorporate his wife Shannon and their son Flynn, who is starting to walk and talk this year.

For more information on Dr. Karl and his research please visit his website: http://mae.ucf.edu/people/faculty/justin-karl/
Dr. Kareem Ahmed has always been passionate about science and engineering. From a young age, he impatiently wanted to become a scientist. Driven by this passion, he pursued Engineering. During his undergraduate studies he designed and developed a pulse jet engine and a gas turbine engine from a turbocharger. After acquiring his Bachelor’s degree he worked for an aerospace company designing cockpit panels and instrumentations for various companies (NASA, Boeing, Lockheed, etc.). Striving for excellence in science and knowledge, he returned to school for advanced graduate degrees where he worked on understanding the fluid dynamic instabilities of reacting and non-reacting shear layers during his Master’s degree. During his Doctoral studies, he worked on fluidic-based flame stabilization for ramjets for the Office of Naval Research.

Upon graduation, Kareem joined the faculty at Florida State University where he worked on supersonic flows and flow control. At that time, he was offered a position at Pratt & Whitney Military Engines to work on Advanced Engine Programs and Technologies along with the F35 Joint Strike Fighter program. From Pratt & Whitney, he returned to academia as an Assistant Professor at Old Dominion University where he mentored students and worked on advanced scientific research problems.

His latest career milestone brought him to MAE. The growth of the University of Central Florida and the Department of Mechanical & Aerospace Engineering attracted Kareem. In addition, the development of MAE’s Center for Advanced Turbomachinery and Energy Research (CATER) piqued his interest. Accordingly, he wanted to be part of the historic growth and development occurring at UCF. Kareem looks forward to playing a major role in this great monument in his career at UCF.

When he ventures outside of the lab and takes a day off you can find him working on one of his hobbies: cars, aircraft, propulsion engines, and he also loves to travel.

For more information on Dr. Ahmed and his research please visit his website: http://mae.ucf.edu/people/faculty/kareem-ahmed/

Staffing Statistics
Dr. Robert Steward Jr. grew up on the south side of Chicago, Illinois. He is an only child and had a pet turtle growing up, which he still has to this day. Growing up as a child Robert always liked taking apart and rebuilding just about anything he could get his hands on. Therefore, unlike some college students who struggle to decide on a major, for Robert majoring in engineering was an easy decision and seemed like the natural and obvious choice for his career path. After living in Chicago all of his life Robert left behind the icy winters and moved to Atlanta, Georgia for college to attend Clark Atlanta University, where he majored in mechanical engineering. It was during his time at Clark Atlanta that he was first exposed to research. As they say, the rest is history!

Beginning his freshman year, Robert performed research non-stop every following summer, spring, and fall semester. He even branched out to perform collaborative research outside of mechanical engineering in departments such as chemistry and physics. His most memorable research experience was the two consecutive summers he spent working for NOAA (National Oceanic and Atmospheric Administration) at the David Skaggs Research Center in Boulder, Colorado.

During his senior year, Robert decided that he would like to apply the skillset he had learned as a mechanical engineer to the human body to improve human health and quality of life. It was through the suggestion of his mentor Dr. David Veazie that he visited Carnegie Mellon University (CMU) in Pittsburgh, Pennsylvania. After visiting CMU he knew this was the place for him and decided to pursue a Ph.D. in Mechanical Engineering in the Cellular Biomechanics lab of Dr. Philip Leduc.

As a Ph.D. student Robert performed research in the field of cellular biomechanics and focused specifically on how cells responded to multiple mechanical input signals. He was also fortunate to present his doctoral work around the country and world. After completing his Ph.D., Robert was a research fellow at the Harvard T.H. Chan School of Public health under Dr. Jeffrey Fredberg where he pursued further work in the field of cellular mechanics.

After completing his time as a research fellow, Robert came to UCF to be an assistant professor in the department of Mechanical and Aerospace Engineering while partnering with professors at the Burnett School of Biomedical Sciences. He was most attracted to UCF because of its dynamic and exciting environment, warm Florida weather, and new College of Medicine located in Orlando’s medical city.

Robert spends his free time swimming, bike riding, white water rafting, and playing video games. Robert is extremely excited to be part of the UCF family and looks forward to helping make UCF a world-renowned research university in the future.

For more information on Dr. Steward and his research please visit his website: http://mae.ucf.edu/people/faculty/robert-l-steward-jr/
Faculty Focus

Affectionately as “Surya,” Dr. Suryanarayana Challapalli, has had many exciting experiences since coming to the U.S. in 1988. While he may not have a “favorite” per se, he happily recounted his travels and adventures for me while writing this article. Since 1988, Dr. Surya has been in the U.S. conducting research, and not too long after, expanded his repertoire to include teaching and serving the academic community.

In 1988, Surya’s U.S. adventures began with a “one year” sabbatical from his home university in India to conduct research at Wright-Patterson Air Force Base near Dayton, Ohio. He was asked to continue for an additional year, and was then offered a Visiting Professorship at University of Idaho to conduct research and teach. Surya officially resigned from his home university in India in 1991, and set out to make his mark on the U.S. materials science scene. In 1996 he was offered a position as a Research Professor at Colorado School of Mines, and in 2001, he made his way to sunny Orlando, Florida as a tenure-earning Associate Professor at the University of Central Florida. He was the Graduate Coordinator from 2003-2007 and was awarded tenure and promoted to Professor in 2004.

In 2012-2013 Surya was selected as a Jefferson Science Fellow with the Department of State in Washington, D.C., the first at UCF to be selected for this program. During his time at the State Department, Surya worked as part of the Partnerships for Enhanced Engagement in Research (PEER) program, tasked with initiating research collaborations between the U.S. and Iraqi scientists. Two of the three groups Surya worked with were funded, and this was the first time such a joint proposal was funded from NSF under this program to an Iraqi scientist. It was also the first time that many of these Iraqi scientists had the opportunity to write an international collaborative proposal.

In 2013-2014 Surya stepped in as Interim Department Chair for MAE. He described his first foray into academic administration as “very interesting” and a “valuable learning experience.” Since stepping down at the end of 2014, Surya has continued with his research, advising students, and writing, which he had very little time for as Chair. Surya is currently working on two new books on NanoStructured Materials and Physical Metallurgy. Away from campus you can find him at the Materials Characterization Facility in Research Park or travelling abroad spreading the word about MAE and CECS’ graduate programs.
Away from his post as a Professor, Surya is married, and he and his wife enjoy a vegetarian lifestyle and share interests in music, reading, traveling, and exploring other cultures in their free time. Mrs. Surya has degrees in Biology and Music and has taught in both areas. These days she gives private music lessons to children in their home and organizes music programs at the Hindu Temple for professionals who travel from India to the Orlando area. Although Surya also enjoys music he accepts his talents as a listener, and not a practitioner, and does not partake in the singing aspect. Surya enjoys reading mostly about history and culture, but on rare occasions you might catch him reading a John Grisham novel. Surya's interest in culture has taken him all over and to many important religious places around the world. In their travels Surya and his wife have visited Japan, China, South Korea, England, Italy, Spain, France, and more recently Saudi Arabia, Egypt, and Turkey. Other than travelling back to his native India, one of his favorite places to visit has been Japan.

After his first visit in 1979, he was so impressed with his stay that he has returned roughly 10 times, and by now he and his wife both speak and understand conversational Japanese.

A couple of years later, Surya was organizing a conference in Japan that his mentor from India was coming to attend. His mentor had never traveled to Japan so Surya assured him that everything in Japan is very organized and runs like clockwork. (Famous last words right?) After flying to Tokyo, his mentor boarded a train to Sendai, which ended up going through a hurricane. Surya was of course anxious to find his mentor to safely bring him back to the hotel. Unable to locate him at the train station, Surya attempted to return to his hotel. Knowing that the doors to the hotel would lock at a certain time in the evening, Surya phoned ahead to explain his situation and that he was rushing to get back to the hotel before the doors closed. The hotel employee told Surya he would not lock the door, but when Surya arrived back at the hotel the doors were locked and his knocking did not attract the attention of anyone willing to open the door. Surya decided to go to the local police station for help. After explaining his situation, he returned to the hotel with the policeman. Of course the hotel employees opened the door for the policeman, at which time they were scolded for locking Surya out after they had told him they would not. The next morning he was able to make contact with his mentor who had found a way to make it back to the hotel on a bus. Surya recounted his story for his mentor about his adventures trying to find him and his first trip to a police station.
During his travels, Surya has visited many well-known sites such as Mount Kailash in the Himalayas, Vatican City, the Red and Black Seas, the Great Wall of China; he trekked from Jeddah to just outside Mecca in Saudi Arabia, and has visited many of the national labs and universities near these places as a Visiting Scientist/Professor. Not only is Surya a world traveler, he is also an award winning scientist. Most recently he was awarded the Central Florida Engineers’ Award for Lifetime Achievement in Engineering, and in 2011 he was named number 40 in a list of Reuters’ top 100 researchers in the field of materials science.

Surya has led an exciting life so far, and despite a Lifetime Achievement Award, he welcomes new adventures to come. He looks forward to finishing the two books on which he is working, seeing his current Ph.D. student to graduation, working with his local and international collaborators, and recruiting new graduate students to MAE and CECS through his travels abroad.
Jack Mill fell in love with airplanes as a teenager. In 1972, Piper donated an airplane to Vero Beach High School where Jack was enrolled in an aeronautics class. Since the donated airplane had been used extensively for structural testing, it could not be sold and they used it to learn about all of the parts and how to perform a pre-flight inspection as if they were going to actually fly it. This was his first exposure to Piper Aircraft. He was also involved in a Boy Scouts Explorer club that Piper sponsored.

Growing up in Florida, it was a natural transition to come to Orlando for school. UCF was an easy choice because it was a local university with a reputation for excellence in the engineering program and proximity to his home town. He looks back on his time at UCF with fond memories. Jack earned his B.S. in engineering at UCF in 1980, and continued his passion for flight by becoming a licensed professional engineer in Florida, an FAA engineering authorized representative, a certified flight instructor and a commercial pilot with instrument rating in single and multi-engine aircraft.

In a serendipitous turn of events, in 1985, Jack’s dreams of flying and designing aircraft became a reality when he landed a job with Piper Aircraft Inc. Piper Aircraft is headquartered in Vero Beach, FL, and is considered one of the “big three” in the field of general aviation manufacturing. He began as a design engineer and worked his way up to his current position as Vice President of Engineering.

Leading the engineering team at Piper allows Jack to work side by side every day with some of the most dedicated and talented people in the general aviation business. Dedication for making the best airplanes in the world is what drives the Piper team and Jack is proud every day to be a part of it. One of his most memorable days on the job was the day the Piperjet proof of concept vehicle first flew. This was their first jet design that they built and flew to prove the concept of a single engine turbofan powered airplane. Watching the airplane fly for the first time brought tears to his eyes.

Jack recounted for us his many experiences in flight, which vary from personal trips, experimental flight tests, giving flight instruction, traveling for Piper and many challenging flights all over the world. His most memorable flights include his opportunities to fly the Piper Cub, Piper Cheyenne, Piper Malibu/Mirage, Ford Tri-motor, Pilatus PC-12 and Beechcraft King Air, just to name a few. While it is hard to pick just one experience from the many, Jack said that flying the Piper Meridian was his most recent “best day” flying!

Outside the cockpit, Jack is inspired by his wife, mother and father (God rest his soul), his faith, as well as many of his coworkers and associates over the years. When time and life responsibilities permit, he enjoys scuba diving, free-diving, hunting lionfish and lobster, golfing, waterskiing, boating, traveling with his wife, Dawn (Miller) Mill, ’77, visiting with his daughters Katy and Angela, and of course flying. In Jack’s “alone time” you can find him getting away to take a walk or spending a few minutes in a quiet place. He says this does wonders for the mind, and sometimes turns into an intensive workout!
Phil Dumas, Founder, Unikey - Class of 2005

Phil Dumas wants to take away your house keys. Don't worry, though—the founder and CEO of UniKey Technologies just wants you to use its smartphone technology, which lets users lock and unlock their front doors remotely.

He went on "Shark Tank" in 2012 seeking $500,000 in exchange for 33 percent of UniKey. Negotiations were intense, but when the dust settled, Dumas had accepted half a million dollars for a 40 percent stake. UniKey is now available at Best Buy, Home Depot, Lowe's and more. Dirk Wyckoff, UniKey's vice president of sales and marketing, said in an e-mail that Dumas' appearance on the show "played a role in the evolution of our company [and] validated consumer interest."

What was the impact to your business of being on 'Shark Tank'?
After receiving offers from all the sharks, UniKey was able to build an initial following. This resulted in preorders for our product, consumer feedback on what they thought it should be and additional contacts that helped us grow our business to where it is today.

Did the sharks provide any tips or suggestions that changed your business plan?
The sharks all have had great experiences in their respective businesses. Their feedback helped us think about how different paths to market are possible and what challenges we may face as we head down those paths.

Was there an immediate reaction from viewers?
Reaction was and has continued to be positive throughout re-airings and worldwide syndication. The proposition of a smartlock that simplifies the traditional lock and key in every way resonates with consumers. After all, a door is something that every viewer has.

What are your sales projections for 2015?
UniKey has set out to replace all your keys, passwords and pins. We launched our first product in the home automation space with Kwikset, the North American leader in residential locks. While we don't comment on sales projections, we continue to look for entrenched leaders in access control interested in UniKey bringing their hardware to the 21st century.

Were the sharks able to open doors for you in retail or elsewhere?
The sharks were able to open the minds of the consumer market. We understand that the 'Shark Tank' audience, much like ourselves, loves innovation, technology and start-ups. Having a successful show assured us that the market for our innovative home automation product was ready and waiting.
Amanda DePreta, Millennium Engineering - Class of 2009 & 2011

Amanda DePreta never does anything halfway, from her unyielding love of all things UCF, to her unparalleled work ethic, or her academic pursuits. She always strives to put forth her best effort. DePreta, a two-time alumna of UCF, earned a bachelor's degree in Aerospace Engineering in 2009, and completed a master's degree in Mechanical Engineering in 2011. As a Lead Project Engineer Flight Integration Engineer for Millennium Engineering and Integration Company, she is diligently working to figure out NASA's next steps. The Space Shuttle Program, that brought us Atlantis, Challenger, Columbia, Discovery, and Endeavour, was referred to officially as the Space Transportation System (STS). With the closure of NASA operations for the retirement of the Space Shuttle Program, the next wave of activity at Kennedy Space Center will revolve around the new Space Launch System (SLS), like ORION and the Orion Spacecraft.

DePreta’s main function as a member of the Ground Systems Development and Operations (GSDO) team Program is to act as an “interpreter” of sorts. She works as a liaison between the GSDO and SLS Programs (SLS is based out of Marshall Space Flight Center in Huntsville, Alabama) to understand the evolving requirements of the launch vehicle and ensure that the ground infrastructure is developed with the capability to support it. As a flight integration engineer she also gets to work on future mission planning, meeting with numerous mission managers who are interested in flying their spacecraft as a payload on the SLS and helping them to develop their requirements.

The GSDO team is responsible for updating all of the launch facilities, including the historic Vehicle Assembly Building, Crawler-Transporter, and Launch Complex-39B. She is part of the team that is responsible for figuring out what resources are available from the STS program and determining if they are compatible with the new SLS and Orion initiative programs. With the successful completion of the first Orion test flight last December, She and her team at Kennedy Space Center (KSC) worked around the
clock to make sure that the ORION launch went smoothly, and they are working hard to ensure that the next frontier in space has the right support elements in place to be successful in the long-term. Make no mistake, working out at the ‘Cape’ can be grueling, the days are long and the challenges can seem impossible. DePreta is quick to point out that she loves what she does, and to be “on Center” (the in house term for KSC) during launch day is like no other feeling she has experienced.

DePreta, who is originally from Connecticut, moved to Central Florida when she was eleven, and went to high school around the corner from UCF. She grew up determined to study law or engineering; engineering won out after she took some legal studies classes in high school. Engineering also runs in her family: her father is currently an Engineer for the Walt Disney World Company after working 15 years as a Senior Automation System Engineer at Pitney Bowes Inc., and her favorite time of year was “take your daughter to work day”, where she was fascinated by all the different projects that her father worked on.

When it came time to start looking at colleges and universities, DePreta was surprised to learn that UCF was right down the street, and had a solid engineering program. Recently, igKnight sat down to talk to our young alumna and these are some of the words of wisdom she shared with us:

**How did you feel when you set foot on campus?**

It was exciting and overwhelming, going to college is not like the movies and everything felt intimidating. I had a tough time getting acclimated to campus, because I had this drive to do things on my own.

**What was the hardest part?**

The first two years of pre-requisite courses were so challenging, and at the time I did not understand how they would be applied or why I needed to take them.
Since the information was not making sense right away, it made things that much harder for me to be successful. It was so difficult to hang around the dorm and study on Friday nights, and for a while I wanted to change majors.

What would you suggest to other students to be successful academically?
Make sure you find or create a core group of people to study with, to some extent this allows you to “suffer” together. Sometimes talking out where you are stuck or what you are having difficulty with is so helpful. This group can also serve as a support system, if needed, which is vital to success. Our families and friends love us and try to be as supportive as possible, but they don’t always understand what we are talking about or going through, which can be a challenge.

Any other tips?
Internships and experience are vital! It was one of the things that I did not pursue to the fullest extent, and it made it harder for me to find a job after graduation. I would also suggest stepping out of your comfort zone and engaging new people, you never know where your next opportunity is going to come from.

As our conversation continued, it was clear that DePreta’s drive and determination are a force to be reckoned with, and no one can save you should you mention “the other” schools up north (UF) and to the west (USF). As a self-proclaimed UCF Football fanatic who has traveled to Ireland and Arizona to watch her Knights play, DePreta’s love for the institution and the Mechanical and Aerospace Engineering program is clear. She even jokes that Dr. Ruey Chen’s high-speed aerodynamics class prepared her to deal with the continuous challenges that she is faced with on a daily basis. Admittedly, DePreta says that she never thought she would actually work for NASA; she considered it a pipe dream. Now she states with a broad smile, “Reality is so much better”.

As a proud alumna, DePreta is thankful for the benefits given to her by UCF and cannot imagine where she would be without the opportunities she was given. This past spring semester the DePreta family welcomed another Mechanical Engineer into their ranks as Amanda’s sister Kelsey graduated with her bachelor’s degree.

As our interview drew to a close, it was clear that DePreta was feeling a little nostalgic and reminiscing on her time at UCF. However, all she has to do is set her sights towards the sky, to see the future looming bright, for this shining Knight.

“Internships and experience are vital!”
Jamie Larson’s path to becoming the Senior Information Specialist in the MAE Department at UCF might not be considered typical. The oldest of six children, she had a lot of family responsibility growing up, helping care for her younger siblings. She also spent many happy hours reading as many books as she could carry home from the library. Her secondary passion was enjoying the wild outdoors playing with her sister and the neighborhood kids in the back woods of Palm Bay, FL. Her mom was big on hands-on educational opportunities and took the kids to the library, lake, beach, local museums, science centers, and planetariums on a regular basis. Most days after school, Jamie could be found blazing trails and building forts out of palm fronds or catching snakes and bugs by the creek.

Her father was a computer software engineer at Harris and one night he brought home an IBM Key Punch machine with a stack of used punch cards, sparking Jamie’s interest early on in these strange and mysterious things called computers that were just beginning to revolutionize the world. From those early days, Jamie had the benefit of immersion in a world of computers, learning basic programming starting in 2nd grade and continuing through her school career. The Space Coast provided a wealth of opportunities with the NASA and Kennedy Space Center right there in the back yard. In elementary school, fire drills were scheduled to coincide with Space Shuttle launches. She watched with pride as we returned to space each time, populated low earth orbit with numerous satellites, partnered with the international community to build the International Space Station, launched the Hubble, sent rovers to explore Mars, and more. It was soon after this that Jamie’s mom remarried and the family moved from Palm Bay to Titusville. Her step-father was the Chief of Artificial Intelligence at NASA KSC. Jamie’s curiosity in the Space Program and computers continued to grow under his influence, as she now had access to early desk top computers at home.

As an adult, Jamie’s career path took her to a job at NASA KSC with a small contractor based in Houston, TX, Jamie’s dream job location. This job was in the Orbiter Sustaining Engineering Office, the local Cape Canaveral arm of Houston’s main office, which oversaw all work done on any of the orbiters. Her job may have seemed boring from the outside (security, training, badging, and working with foreign partners mainly from
Canada, Japan, Russia, and France), but she loved being at the Space Center every day and feeling completely immersed in the Space Culture. As the Shuttle Program ended, however, Jamie found herself now divorced and living in Orlando. So when the inevitable layoffs occurred, she decided to seek out work closer to home.

After enjoying the first entire week of her layoff doing nothing but relaxing, through a friend of a friend, she was introduced to the Mechanical and Aerospace Engineering Department at UCF. Now, four years later, Jamie is working to help promote and increase the visibility of the MAE Department through new initiatives like the updated MAE website, our new human interest magazine - igKnight, and by assisting MAE’s junior faculty write winning proposals for NSF grants and other major grant awards.

Tim Lindner is a well-travelled Journey Man, and has the card to prove it. Tim, an Engineer in the Department of Mechanical and Aerospace Engineering (MAE), plays an integral role in providing MAE students with the hands-on component of engineering design. As the managing engineer charged with overseeing the Manufacturing Laboratory, Lindner ensures that students’ Senior Design projects are appropriately designed, machined, and manufactured. Lindner’s history with the engineering and manufacturing field is a long and winding tale that begins in Indiana. Lindner was first exposed to the discipline right out of high school, when he worked for his uncle’s Tool and Dye shop, helping to create prototype solutions to unusual problems.

Tim vividly recalls when Ford Motor Company approached his uncle about an issue that they were experiencing involving a steering wheel, and the engineers at Ford were stumped as to how to solve the problem. Lindner’s uncle told Ford to bring him a steering wheel and he would take a look and see what he could do, and after reviewing the problem, his uncle came up with a pretty simple solution that Ford could mass produce.

Lindner’s perspective on manufacturing and engineering were forever changed. After this encounter, Lindner set his path and began working toward the goal of becoming a registered Journey Man. This goal required Lindner to complete a four-year apprenticeship, involving hundreds of hours of time on various machines and the ability to take a project from design to production.

After completing this course of study, Lindner spent time at Northrup Grumman. He worked as part of the team in the Laser Division Modeling Shop, working on the completion of the “first piece” or the prototype. Every time a part is manufactured, it is first modeled and then a “first
“first piece” is created. This “first piece” is the first time a part is ever produced, and this prototype becomes the piece from which all other parts are produced, so it has to be done right.

Tim’s history of “doing things right” and being the first to work on a project has served him well since joining UCF and the MAE department. In 2014 Albert Manero, an MAE Graduate student approached Lindner about a problem he heard about via email. A six-year old boy named Alex Pring, born with only one fully-developed arm. Alex’s mom had purchased a kit online to hopefully allow her son to have two usable arms and hands. The kit did not exactly work as advertised, so she sent out an email for help. Manero saw her request and began to brainstorm on Alex’s problem.

Tim, in conjunction with Manero and countless other UCF students, have worked tirelessly to provide children options for bionic limbs, a cost-effective counter-part to expensive prosthetics, which oftentimes the insurance companies do not cover for growing children. With that decision, Limbitless Solutions was created.

Tim, who is an advisor for the Limbitless Solutions team, provides guidance and assistance in the Manufacturing Laboratory. While he hopes to continue working with the Limbitless Solutions team, he also has some goals in mind for the future of the Manufacturing Laboratory. Tim is passionate about educating MAE students on the right and wrong way to utilize the machines in the Manufacturing Laboratory, ensuring that safety is paramount.

For many students this is their first opportunity to interact with the equipment that will create what they have designed and while design failures occur, Lindner encourages student to learn from their mistakes, and to get creative with solutions. He feels strongly that the skills students develop in the Manufacturing Laboratory will carry them into the future, as engineering industry is starting to see a resurgence in these areas. Ultimately, Lindner is excited and intrigued to see what our students will come up with next, and igKnight has a feeling that if things run true to form, Lindner will be right there with the students creating and innovating.
“Like many love stories, ours started with a scooter... wait, no, is that just us?” Sarah Minich was a “car-less college kid who opted to purchase a scooter as a safer alternative to a motorcycle, but it was not long before she succumbed to the allure of a bigger bike. In 2010, when her Kawasaki 750 Vulcan needed its first oil change, Sarah attempted it but then decided she needed a few pointers. She turned to this “cute gearhead” she knew through the Mechanical Engineering program at UCF. Enter, Charlie Ward. With his guidance, Sarah was able to do the work herself, and a friendship blossomed.

Sarah and Charlie spent time together in the SAE (Society for Automotive Engineers) Club, and after one college party, Sarah and Charlie were an item; they just wanted to spend as much time together as possible. After a short courtship, Charlie proposed in 2011. Sarah and Charlie had a project-packed 16-month engagement during which Charlie began working on his master’s while Sarah continued working on her bachelor’s.

Meanwhile, on the home front, Sarah and Charlie were fixing up Charlie’s house. This handy couple took on a variety of home projects together in the spirit of DIY and togetherness including their deck, back room, and their first and last project that used glued-down engineered wood. Sarah laughs as she recounts, “It was horrible!” Sarah and Charlie also made and painted the arch under which they would get married, three picnic tables for their relaxed backyard rehearsal dinner, and their own wedding cake stand. As a self-proclaimed “fabric snob,” Sarah even made her own wedding dress! Sarah also made their wedding cakes, all ten of them, using a seven-layer chocolate cake recipe from her grandmother as “a way to include her in the big day” in 2012. Shortly after their honeymoon in the “quaint little town” of Ellijay, Georgia, Sarah and Charlie bought their first house together. They have had uncountable DIY and “critter” adventures since the wedding, including moving to Savannah, Georgia in May 2013 and adding ducklings, chickens, a litter of puppies, and two litters of kittens.

Sarah and Charlie currently share their lives with “Missy Freddy” the cat’s first litter. They have quite the family, including their dog “The Bailey,” puppies “Mason Jar” and “Dixon Line,” chickens, and their first birdies and ducklings.

In December 2013, Sarah and Charlie bought their current house and recently celebrated their third wedding anniversary. “Knock on every piece of wood around you,” Sarah and Charlie hope to be in this house for a very long time. “It’s wonderful to feel stability...although the future is unknown, one thing I do know is I married my very best friend, and I’m so happy to be his wife.”
Knight Love

Aimée Roberts and Edgar Kidd started out as friends who were introduced courtesy of a mutual acquaintance outside the Math and Physics building at UCF. They shared a common membership in the Theta Tau Professional Engineering Fraternity, and both were students in the College of Engineering (Aimée in Electrical Engineering and Edgar in MAE). Soon, a friendship blossomed between them though they were dating other people at the time. Due to their shared interests, the two “spent time together at events and became close friends really quickly. Because of their other relationships, they say it was not love at first sight, but “as those relationships ended, [their] friendship changed. He even became [her] dance partner for ballroom dancing class on campus.”

Looking back, Aimée says, “Edgar and I were best friends for months before we were able to admit we had feelings for each other.” Although their relationship had a slow start, after one well-meaning practical joke turned misunderstanding left Aimée “worried and angry...in that moment [she] realized [she] wanted him to always be in [her] life.” They kissed, and the rest is history.

Edgar and Aimée “both agreed it would be too much stress to get married in college. “We knew we loved each other and wanted to wait until we had both graduated and started our careers.” In August 2011, with Amy’s B.S and Edgar’s M.S. degrees under their belts and new careers waiting for Edgar and Aimée at Lockheed Martin and Northrup Grumman in California, Edgar “surprised [Aimée] with a proposal.” The couple lived in California while planning their “destination wedding back in Florida,” and on April 27, 2013 Aimée married her best friend.

Over the next few years they can see themselves either moving back to Florida or possibly to Texas. The couple says, “from there we would like to start a family,” and Aimée would like to pursue her Master’s degree in Systems Engineering. The couple sees their future Floridian or Texan adventure as “a life of balancing work, travel, and family. They would like to spend time with family traveling the world and experiencing life to the fullest.” Edgar and Aimée added that they were “truly grateful for [their] time in the Engineering program at UCF, and for all the memories it provided. We will never forget our times studying all night together in the Engineering 2 atrium, and all the time we spent working hard and still managing to find time for laughter and fun.”
Diego Carrillo first roamed UCF’s campus during a week-long soccer skills camp, staying in the residence halls at night and working out at the UCF practice fields every morning. To hear Diego tell the story it was on those long walks to and from the Nike and Hercules communities that the Aerospace Engineering junior began to feel like UCF was the place he would call home during his collegiate career. igKnight recently sat down with Diego to discuss his love of UCF, his drive to play collegiate athletics, and his commitment to the Air Force ROTC.

Diego comes across as cool and confident, but is quick to break into a grin when he finds something amusing. His expression turns more serious though when he starts to talk about his family. Diego mentions that his dad is the main motivator for his decision to enter the Air Force ROTC program, his father was a member of the Guatemalan Air Force, and took great pride in serving his country. Diego feels that same drive and passion, and recently began taking flying lessons to facilitate his goal of securing a coveted Air Force pilot slot, and he mentions during our conversation that there is “nothing” like being in the pilot’s seat of the Cessna 172 on which he has been training.

Diego’s commitment to the Air Force ROTC program keeps him busy during the academic year. His days typically begin before the sun comes up with physical training (PT), but his ROTC commitments do not end there, as the more senior cadets, like himself, are expected to mentor the younger cadets at least once a week. As our conversation continues you can tell Diego values being there for others, and seems to slip seamlessly into the role of mentor. Maybe it is the fact that he has two younger brothers in high school or just how he was raised, but his steadfast and dependable nature comes through during our conversation.

When asked why he selected Aerospace Engineering as his major the junior was quick to reply, “It was the first one on the list at my orientation session”. When he mentions this, I had to mentally take a step back. “Really?” I ask. Diego answers in the affirmative, and when he sees the look of surprise register on my face, he backtracks a little, and says math and science were always strong subjects for him, and he just tries to take the classes one day at a time.
He looks at me and reasonably asks, “Who else gets to legitimately talk about the Space Shuttle program in class?” He has a point. When asked by igKnight to provide advice to underclassman, Diego is eager to offer guidance:

**What is one piece of information that you wished you had known prior to selecting this major?**

Just because other people say something is hard, YOU should be the person that decides. Do not let what other people say intimidate you. Just because your friends are taking different paths does not mean you have to.

**What have you learned during your time at UCF?**

There are a ton of resources available at UCF, make sure you learn about them and use them if needed. This is something I wish I had done more of during my freshman and sophomore years. Do not be afraid to investigate what is available and ask questions.

**What is a good piece of advice for all engineering students?**

Try to surround yourself with people that provide a positive atmosphere, focus on what you can do and what change you can affect.

This past year, Diego also had the opportunity to play for the UCF Men’s soccer team, as the team’s goalkeeper. This unique experience is something that Diego would not have missed, even though the games and the practice times had him running, literally, all over campus from ROTC physical training, to soccer practice, and to class. Over the past year, he has been challenged to balance and manage his time, which was something of a struggle at the beginning of the academic year. Diego has worked hard to manage all of his priorities, both personal and academic, and although at times it was supremely difficult to manage all the moving parts, but he believes that his involvement in collegiate athletics tested his personal limits and forced him to develop new skills on and off the field.

In the spring semester of 2017, Diego will be a commissioned officer in the United States Air Force. For the time being, the Aerospace Engineering junior hopes to make the most of the time he has left at UCF, savoring life’s moments until the day he will follow in his father’s footsteps as he is called upon to serve his country.
Ask Jonell Gregor what she likes about UCF and you immediately see her face light up as she launches into a dialogue about how many opportunities UCF has given her over the last few years. “It sounds cheesy, but UCF really does stand for opportunity,” referencing the 2005 UCF marketing campaign. You can tell though that when Jonell throws this comment out during the course of our conversation, she means it. This coming fall, Jonell will be graduating with a degree in Mechanical Engineering and igKnight sat down to meet with the graduating senior to reminisce on her time at UCF and her plans for the future.

Jonell came to UCF from Tarpon Springs, Florida and was a member of the Engineering Academy at East Lake High School. The school also has a partnership with Project Lead the Way, which provides “world class K-12 curriculum, high quality teacher professional development, and outstanding partnerships” in STEM disciplines. Through the Engineering Academy and Project Lead the Way at East Lake High School, Jonell became immersed in the world of FIRST Robotics. Jonell’s involvement in FIRST Robotics began when she took over the role of Scouting Captain during her freshman year of high school, and has carried through her collegiate career where she is still involved with FIRST as part of the regional planning committee.

While many students may not be familiar with UCF prior to their arrival on campus, Jonell knew the ‘ins and outs’ of campus well in advance of her college career due to her participation with FIRST Robotics, a national organization that promotes STEM disciplines and seeks to inspire and recognize science and technology by having students work together and learn “that science, technology, and problem-solving are not only fun and rewarding but are proven paths to successful careers and bright futures.” Jonell’s ability to jump in and help out her high school FIRST team wherever she was needed allowed her to flourish during her time at UCF.
In addition to her FIRST Robotics activities, Jonell has participated in the President’s Leadership council as an ambassador for UCF, worked as a UCF Orientation team leader, and been a member of the Honors College. Her outgoing personality and approachable nature have afforded her internship opportunities at I-CON Systems, Inc. and Lockheed Martin. While Jonell has thoroughly enjoyed her time at UCF, she is quick to offer advice to incoming students.

What is one thing you want to share with underclassman in Mechanical and Aerospace Engineering?

Your college experience should be fun, but there will come times when you will have to sacrifice fun for academics; it is hard (really hard), but it has to be done.

What is one thing you would change about your college experience?

Involvement in student clubs and organizations is a wonderful experience, and I learned a lot from participating. But it might have been more helpful to focus my extra-curricular involvement in a particular direction rather than a broad spectrum.

Any other thoughts?

The future of our world is moving towards STEM Disciplines, having respect and appreciation for these areas is paramount.

Come this fall Jonell will walk across the graduation stage and move onto the next phase, her future. While she is excited about the prospect of working in the engineering industry, she is nervous for the unknown as well. She hopes to find a position within the engineering field that allows her to continue developing her leadership skills that she cultivated while at UCF. Although it may “sound cheesy”, Jonell has made the most of every opportunity at UCF, and the igKnight staff is eager to see what exciting opportunities the future holds for her.
Dr. Suhada Jayasuriya, affectionately known as “Dr. J.,” former Chair of Mechanical and Aerospace Engineering, unexpectedly passed away on July 12, 2014, while doing one of the activities he loved most, playing a lively game of Cricket with his friends and colleagues in Pennsylvania.

He received his B.A. from the University of Sri Lanka and his M.S. and Ph.D. degrees from Wayne State University, all in Mechanical Engineering. Prior to his time at UCF, he served as Director of the Control Systems Program at the National Science Foundation (NSF) while on leave from Texas A&M University, where he was Kotzbelue Endowed Professor of Mechanical Engineering and Department Head. While at Texas A&M, he championed major curriculum changes, streamlined course offerings to manage faculty teaching loads enabling increased research productivity, recruited 12 new faculty members and raised more than $10 million in endowments and gifts for the department, was a Distinguished Professor and Chair of MAE at the University of Central Florida (UCF) from January 2011 – August 2013. He departed MAE the fall of 2013 to join Drexel University as University Distinguished Professor and Chair of the Department of Mechanical Engineering and Mechanics.

Dr. Jayasuriya’s focus in MAE at UCF included mentoring junior faculty and starting a departmental graduate seminar series. He held the first ever MAE Graduate Student Research Day, secured resources to upgrade multiple teaching labs and build new design studios for the Capstone Design Class, initiated a program with NASA-Kennedy Space Center on Unmanned Air Systems and led major curriculum revisions. Throughout his career, he directed over 50 Ph.D. and M.S. students, and published over 200 technical articles on topics related to control systems, cooperative control, and quantitative feedback theory (QFT). Dr. Michael Georgiopoulos, CECS Dean at UCF, said it beautifully: “The MAE faculty and staff remember him as a strong and compassionate leader with a tremendous drive to mentor and help the junior faculty in the Department and to also steer the Department’s fortunes towards its due higher national prominence.”

Dr. Jayasuriya was a Fellow of the American Society of Mechanical Engineers (ASME) and the American Association for the Advancement of Science. He received the Gustus L. Larson Memorial Award for outstanding achievement in mechanical engineering, the Henry M. Paynter Outstanding Research Investigator Award, the Michael J. Rabins Leadership Award from ASME, and the Distinguished Alumni Achievement Award from Wayne State University.

We, his colleagues and friends at UCF, extend our deepest sympathies and sincerest condolences to his beloved wife, Rasika, and their loving children, Ruvin and wife Jessica, Nilan, and Sashinie, as they journey through this difficult time.
Emeritus Professor David Nicholson passed into eternal life on January 23, 2014 after a brief illness. He is survived by his wife Linda and their son Michael. Professor Nicholson was a devoted husband and father, a respected scholar, mentor, educator, and administrator. Dr. Nicholson retired in December 2009 as Full Professor after 20 years of dedicated service, outstanding scholarship, and excellence in teaching at UCF.

Professor Nicholson earned his PhD at Yale in 1971 addressing theoretical issues in dynamic elasticity describing the response of metals under rapidly applied high loads. He held several notable positions in industry and government prior to joining academia. He first joined academia at Stevens Institute of Technology as Associate Professor of Mechanical Engineering, a position that he held from 1984-1990, after which he joined UCF as Chair of MAE in 1990. He served nearly nine years as either Chair or Interim Chair leading the department through three successful ABET program accreditation visits in 1990 as Chair, as well as 2002 and 2008 as Interim Chair.

Dr. Nicholson always had a forward-looking vision for the department, promoting the “next big thing” for MAE and ever keeping the department ahead of the game. He was instrumental in the hiring and retention of much of the faculty that made up the MAE department over the years. He relentlessly promoted the interests of mechanics, aerospace engineering, thermo-fluids, materials, and notably bioengineering well before it became a college-wide initiative. He oversaw the creation and realization of the Materials Science and Engineering program as well as the Masters in Aerospace Engineering program.

As a scholar, Dr. Nicholson authored 158 journal papers, a successful textbook on Non-linear Finite Element Method, as well as several monographs and numerous conference papers. Over his academic career, he mentored 12 Ph.D. students and 15 MS thesis students. As an educator, Dr. Nicholson was the linchpin of the Mechanical Systems track in MAE, having taught both at the graduate and undergraduate levels. As he retired, he left a strong activity in finite elements and fracture mechanics in MAE, which is yet another legacy of Professor Nicholson.

Into retirement, Professor Nicholson continued his intellectual pursuits while enjoying travel, family, and friends. He worked on important problems in theoretical and continuum mechanics. At the time of his passing he had most recently completed and submitted several manuscripts on new developments in Hyperelasticity.

Over the course of his 20 years of service, the MAE Department was shaped in great part due to the contributions of Professor Nicholson. He worked tirelessly to maintain and promote the integrity of its academic programs and on behalf of its students, faculty, and staff. He promoted and enabled a vibrant research program, all the while maintaining a jovial and inspirational attitude. Professor Nicholson touched many lives at UCF. He is remembered with great fondness by his colleagues and students for his intellect, his wisdom, and his gregarious personality.
Industrial Advisory Board

The Department of Mechanical and Aerospace Engineering thanks our Industrial Advisory Board for their continued support in our efforts to produce successful graduates who benefit the communities in Central Florida, the U.S. and beyond. The efforts of the IAB members have strengthened our curriculum and helped us connect industry needs to our classroom activities. Originally formed in 1996, our IAB has seen members from various industry partners throughout the years, and we are grateful to have a collaboration with this group in order to develop our Mechanical and Aerospace Engineering programs into a top source for graduates in our field.

The mission of the Industrial Advisory Board (IAB), with respect to each of the academic options and to the MAE Department as a whole, is to:

1. Provide guidance and direction to the faculty concerning the curriculum and course content relative to the preparation of the graduates for careers in industry, by giving the faculty an industrial perspective on the needs of, and problems and opportunities facing, mechanical and aerospace engineering.
2. Advise in the recruitment of high quality faculty and students into the Department to ensure requisite capabilities and diversity.
3. Help in assuring a high level of community awareness and support of the Department and support MAE development by:
   a. Assisting in placing graduates from the Department;
   b. Assisting in obtaining financial aid and part-time employment for needy students;
   c. Assisting in obtaining financial and material resources for the Department;
   d. Assisting in the professional development of the faculty through such activities as a summer employment during sabbatical leaves, consulting opportunities, etc.;
   e. Assisting in evaluating the strategic direction of the R&D programs and assisting in their development and funding; and
   f. Assisting in identifying collaborative R&D opportunities.
Industrial Advisory Board
Partnership Companies
Upcoming Events

**Student Related:**

*Fall Career Expo*
Tuesday, September 29, 2015
10:00 a.m. – 3:00 p.m. @ CFE Arena

*Accelerated B.S. to M.S. Event*
Tuesday, October 27, 2015
4:30 p.m. – 5:00 p.m.
HEC, Room 101

*STEM Day*
Friday, November 6, 2015
10:30 a.m. – 2:30 p.m.
Locations and Time Vary
http://stem.ucf.edu/k-12-stem-outreach/stem-day/

*Senior Design Showcase*
Thursday, December 3, 2015
8:00 a.m. – 2:00 p.m. @ ENGR I, ENG 2, and HEC

*UCF Commencement*
Saturday, December 19, 2015
9:00 a.m. @ CFE Arena
http://commencement.ucf.edu/2015/fall

**Alumni Related:**

*Homecoming Week*
Sunday, October 18, 2015 through Saturday, October 24, 2015
Times and locations vary
http://osi.ucf.edu/homecoming/events/

*MAE Alumni Event*
Homecoming Reunion Weekend
Alumni Leadership Conference
Friday, October 23, 2015
11:30 – 5:00 pm.
HEC, Room 101
http://tinyurl.com/q7fdzmc

*7th Annual CECS Homecoming BBQ*
UCF v. Houston
Saturday, October 24, 2015
https://www.ucfknightsnetwork.com/cecsbbq2015

**Faculty Related:**

*Faculty Retreat*
Wednesday, December 16, 2015
8:00 a.m. – 5:00 p.m. @ TBA

COME TOGETHER
HOMECOMING 2015

Presented by:

ORLANDO HEALTH
MAE Fall 2015 Seminar Series

September 11, 2015
EMMANUEL COLLINS, Director of Center for Intelligent Systems, Florida A&M University
“A New Approach to Adaptive Nonlinear Model Predictive Control”

September 18, 2015
KAREN THOLE, Head, Department of Mechanical and Nuclear Engineering, Penn State
“Additive Manufactured MicroChannels for Cooling Gas Turbine Airfoils”

September 18, 2015
MICHAEL OHADI, Professor, Mechanical Engineering, Co-founder, Center for Environmental Energy Engineering, University of Maryland

September 25, 2015
RICHARD FIGLIOLA, Professor, Mechanical Engineering and Bioengineering, Clemson University
“In Vitro Multi-scale Models of the Single Ventricle Circulation: Tools to Mend a Broken Heart”

September 25, 2015
BARBARA KENNY, NSF Program Director for Partnerships for Innovation: Accelerating Innovation Research
“NSF Programs for Innovation and Commercialization”

October 9, 2015
SRINATH EKKAD, Associate VP for Research, Department of Mechanical Engineering, Virginia Tech
“Sand Ingestion Studies at Virginia Tech”

November 6, 2015
ALI RAISI, Florida Solar Energy Center, UCF
“A New Chemochromic Hydrogen Sensor - From Concept to Commercialization”

November 13, 2015
YOGESH JALURIA, BOG Distinguished Professor, Mechanical and Aerospace Engineering, Rutgers University
“Multiscale Modeling in Thermal Processing of Materials”
Attention Alumni! We Want Your Old Photos!!!

The MAE Department is collecting old photos that relate to the UCF Mechanical & Aerospace Engineering Department. If you have any old photos that are dated between the 1960s to today, we would love for you to share them with us. The photos can be of your research, labs, you and your friends in MAE, projects, etc. Please send a digital copy to Jamie.Larson@ucf.edu.

We look forward to rediscovering our past!