UCF College of Engineering & Computer Science

Comprehensive Report

May 8, 2014 - May 9, 2015

2014 National Champions: UCF Collegiate Cyber Defense Team

UNIVERSITY OF CENTRAL FLORIDA • ORLANDO

Six-year-old Alex Pring comes to UCF to be fitted with his first 3D-printed robotic arm, and meets Albert Manero, AE, '12, '14, doctoral student, mechanical engineering, who helped create the arm. (July 18, 2014)

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DEAN'S MESSAGE

I am pleased to present the Comprehensive Report of the College of Engineering & Computer Science (CECS) at the University of Central Florida for the reporting period from May 8, 2014 to May 9, 2015 (summer 2014, fall 2014 and spring 2015 semesters).

This report provides an accurate, summarized record of the major faculty and student activities during the reporting period; and showcases their noteworthy achievements. With 131 tenure and tenure-eligible faculty, 29 instructors and lecturers, 7,382 undergraduate students and 1,330 graduate students (Fall 2014), I am proud to say that our achievements were many.

The great work of our faculty and students is reflected in our ranking. According to *U.S. News & World Report*, CECS is ranked in the top 100 public graduate engineering colleges nationwide for 2015.

CECS is among the nation's largest producers of engineers and computer scientists. Our college's impact in fueling Florida's growing innovation economy is significant. UCF is the No. 1 workforce supplier worldwide for Lockheed Martin, Harris Corporation and Siemens Energy. In 2014, CECS ranked seventh among graduate engineering schools for Hispanics by *Hispanic Business Magazine*.

Our college has five departments: Civil, Environmental and Construction Engineering (CECE); Electrical Engineering and Computer Science (EECS) with two divisions: Computer Science (CS) and Electrical and Computer Engineering (ECE); Industrial Engineering and Management Systems (IEMS); Materials Science and Engineering (MSE); and Mechanical and Aerospace Engineering (MAE).

These five departments are known for their research strengths in diverse areas such as transportation, energy systems and power generation, computer vision, modeling and simulation, artificial intelligence, smart sensors and materials, water resources and quality, and more. Our education and research efforts are supported by a strong neighboring industry presence, such as Harris Corporation, Lockheed Martin, Duke Energy, Siemens, Walt Disney World, NASA, to name a few.

Our college's major initiatives and achievements during the reporting period include:

- In September 2014, the UCF Engineering Leadership & Innovation Institute launched a Maker Space lab complex to bolster students' teamwork, creativity, rapid prototyping and marketable innovations. The four labs – Harris Gathering Lab, Idea Lab, Texas Instruments Innovation Lab, and Manufacturing Lab – are available to the entire UCF community.
- CECS is home to the nation's top collegiate cyber defense team for overall competition performance. Our Collegiate Cyber Defense Competition team won Raytheon's 2014 and 2015 national competitions.
- UCF's Computer Programming Team is ranked No. 8 in the U.S. and No. 28 in the world. Only 128 teams competed in the 2015 Association of Computing Machinery's International Collegiate Programming Competition, representing the best of 10,000 regional teams from 101 countries. For 33 consecutive years, a UCF team has placed in the southeast region's top three.
- The UCF-based nonprofit, Limbitless Solutions, delivered its first 3D-printed robotic arm to then 6-year-old Alex Pring, who was born with a partially-developed arm. The story made national and international headlines, particularly after actor Robert Downey Jr. met with Pring and thanked the UCF engineering students for providing Pring with a low-cost, robotic arm.

As we move forward, our college will continue to emphasize strong, niche, inter-disciplinary research that can, and many times will, achieve national and international recognition for UCF.

Equally as important, CECS will remain dedicated to empowering our students' academic development and success. Our high-achievers set the standard for all students, and best reflect the technical capabilities and leadership skills that UCF sends to the workforce.

Michael Georgiopoulos, Ph.D.
Dean, College of Engineering & Computer Science

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May 9, 2014: Mini Knightro Travels the Nation to Build Excitement for Science Olympiad
UCF is hosting the Science Olympiad National Tournament for the second time in three years. To celebrate the 30th anniversary of the largest STEM competition in the U.S., UCF's Knightro mascot visited K-12 schools across the nation.

May 10, 2014: UCF Cyber Defense Team Takes First in Nation, Photo Displayed in Times Square
The eight-member UCF team that started as a grassroots effort to educate the community about how to defend against cyber-attacks was named best in the nation by winning the Raytheon National Collegiate Cyber Defense Competition, edging out the Rochester Institute of Technology. The UCF team's victory photo was displayed in Times Square, in New York City.

June 21, 2014: Who's Your Daddy? CECS Students Program Computer to Find Out
The computer science research team's facial recognition tool could be used to rapidly match pictures of children with their biological parents, and potentially identify photos of missing children as they age. The study was presented at the IEEE Computer Vision and Pattern Recognition conference in June.

June 25, 2014: UCF 3rd in Nation, 21st in World, in 'World Cup' of Computer Programming
UCF placed in the Association of Computing Machinery's International Collegiate Programming Contest, also known as the "Battle of the Brains," in Ekaterinburg, Russia, out of a pool of 9,000+ regional teams.

June 30, 2014: UCF Simulator to Help Predict Sinkholes
The experiment designed by Mohamed Alrowaimi, a Ph.D. student studying with Prof. Manoj Chopra, simulates sinkholes on a small scale. It took Alrowaimi more than a year to scale the experiment correctly so that what they learn from creating sinkholes can apply to the real world.

July 25, 2014: CECS Students Build Robotic Arm for 6-Year-Old with 3D Printing
Mechanical engineering doctoral student Albert Manero and his team designed a 3D-printed robotic arm for 6-year-old Alex Pring at no cost to his family. It runs with off-the-shelf servos and batteries that are activated by the electromyography muscle energy. This story received worldwide media attention.

Sept. 23, 2014: Lab Launch: Creativity Bolstered at UCF with New Maker Space Labs
The process of turning a creative idea into a marketable innovation is now easier, faster and more accessible at UCF with the grand opening of four new labs known as the Maker Space Lab Complex in the Engineering II building. UCF President John C. Hitt, Texas Instruments Executive Vice President Brian Crutcher and Harris Corporation Senior Vice President Robert Duffy today unveiled the Harris Corporation Gathering Lab, Idea Lab, Texas Instruments Innovation Lab and Manufacturing Lab during a special ceremony. The lab complex is the latest offering of the UCF Engineering Leadership & Innovation Institute: a dedicated space to gather and collaborate, generate creative ideas, vet those ideas, then build and fine-tune working prototypes, all in one place that allows for easy movement between labs.

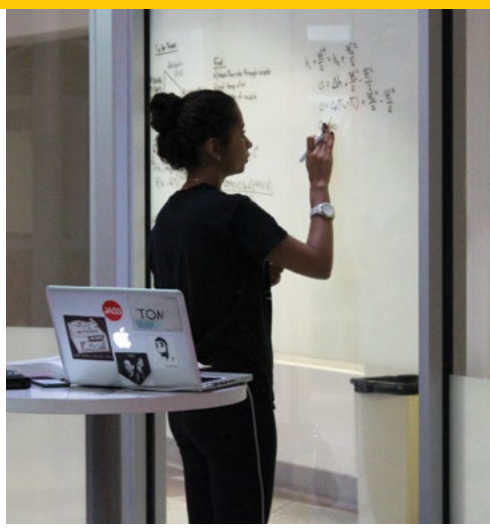
October 23, 2014: UCF Contributes to Hurricane Hunting, Better Predictions
Electrical engineering professor W. Linwood Jones developed a microwave remote sensor (Hurricane Imaging Radiometer) that can image the ocean-surface wind speed and rainfall patterns of a hurricane.

October 29, 2014: UCF Takes Lead Research Role for Emerging 'Internet of Things'
UCF and the University of Florida research the materials, sensors, actuators, power sources and electronics that are expected to drive the "Internet of Things" - the interconnection of the cyber and physical world – which engineers predict is the future of the Internet.

November 18, 2014: Repeat Win for UCF: Southeast Champions of Computer Programming
UCF won a regional super-contest of computer programming known as the "Battle of the Brains." The victory marks the 33rd consecutive year that the UCF Programming Team has achieved a top-three regional win in the Association for Computing Machinery International Collegiate Programming Contest, a record unmatched by any similar team in the nation.

November 21, 2014: Senior Design Prototypes Include Space Friendly IV, Artificial Lung
A team of graduating engineering students has designed a way to administer IVs in zero gravity. Being able to provide fluids and medicine via an IV will be important when astronauts begin long-range space missions to Mars and beyond. Another team has created an artificial lung that simulates the movement of a human lung that may one day help doctors increase the accuracy of medicine delivery.

November 24, 2014: UCF Modeling and Simulation Receives $2.6 Million Gift from Presagis
Presagis, a Canada-based software company, donated the licensing for its products to UCF computer modeling and simulation students. The software allows students to develop, test and train on the most advanced software used in aerospace and defense industries and is valued at $2.6 million.



December 22, 2014: UCF Engineering Professor Takes Top Invention Honors
Marwan Simaan, professor of electrical and computer engineering, was named a 2014 Fellow of the National Academy of Inventors, for his inventions that include devices that give potential heart transplant patients more time to wait for a donor heart, and games that help teach leadership skills.

March 12, 2015: Robert Downey Jr. Gives Boy "Iron Man" 3D-Printed Bionic Arm Made by UCF Engineering Students
Hollywood film star Robert Downey Jr., known for his role as Tony Stark in the Iron Man movie series, draws worldwide attention with a viral video showing his recent visit with 7-year-old Alex Pring and the UCF engineering students helping him.

March 31, 2015: UCF Engineers Study Ways to Keep Drivers Safe in Fog with $2M Grant
Prof. Mohamed Abdel-Aty and his team will use the Florida Department of Transportation's $2 million grant to collect real-time traffic data from sections of I-4 in Polk County, Interstate 75 near Gainesville and a two-lane road in Tallahassee to determine traffic patterns in fog. Orlando-based Praxsoft, Inc., will contribute its expertise in developing weather sensing technology.

March 31, 2015: U.S. Secretary of Commerce Visits Engineering Maker Spaces to Announce Grants
UCF will receive $750,000 to grow the entrepreneurship ecosystem in central Florida, the U.S. Secretary of Commerce Penny Pritzker announced alongside U.S. Sen. Bill Nelson and UCF President John C. Hitt in UCF's engineering Maker Space lab complex.

April 6, 2015: Five CECS Students Score Competitive NSF Graduate Research Fellowships
More than 16,000 students nationwide applied for the National Science Foundation fellowships, and only 2,000 were selected. Winners get three years of financial support ($34,000 a year) within a five-year fellowship period.

April 28, 2015: Another National Victory for UCF Cyber Defense Team
UCF's cyber defense competition team won the National Collegiate Cyber Defense Competition for the second year in a row. The Collegiate Cyber Defense Club @ UCF – also known as Hack@UCF – bested nine other teams to win the competition in San Antonio.

DEGREES OFFERED

Aerospace Engineering, B.S., M.S.

Civil Engineering, B.S., M.S., Ph.D.

Computer Engineering, B.S., M.S., Ph.D.

Construction Engineering, B.S.

Digital Forensics, M.S.

Electrical Engineering, B.S., M.S., Ph.D.

Environmental Engineering, B.S., M.S., Ph.D.

Industrial Engineering, B.S., M.S., Ph.D.

Information Technology, B.S.

Materials Science and Engineering, M.S., Ph.D.

Mechanical Engineering, B.S., M.S., Ph.D.

Photonics Science and Engineering: B.S.*
**Joint program with UCF College of Optics and Photonics*

Fall 2014

During the 2014-15 academic year, the college had a total of 7,382 undergraduate students and 1,330 graduate students, distributed into different departments as follows (*Note: P is for pending*):

Department	Program	Degree	Enrollment (Fall 2014)
Civil Environmental and Construction Engineering (CECE)	Civil Engineering	B.S.	369 + 221 (P)
		M.S.	83
		Ph.D	70
	Construction Engineering	B.S.	34 + 10 (P)
	Environmental Engineering	B.S.	137 + 77 (P)
		M.S.	25
		Ph.D	17
Computer Science Division of the Department of Electrical Engineering and Computer Science (EECS-CS)	Computer Science	B.S.	1,337
		M.S.	99
		Ph.D	125
	Information Technology	B.S.	729
Electrical and Computer Engineering Division of the Department of Electrical Engineering and Computer Science (EECS-ECE)	Computer Engineering	B.S.	398 + 281 (P)
		M.S.	40
		Ph.D	45
	Digital Forensics	M.S.	99
	Electrical Engineering	B.S.	586 + 212 (P)
		M.S.	83
		Ph.D	113
	Photonics Science and Engineering	B.S.	33
Industrial Engineering and Management Systems (IEMS)	Engineering Management	M.S.	73
	Industrial Engineering	B.S.	329+ 126 (P)
		M.S.	98
		Ph.D	69
Mechanical and Aerospace Engineering (MAE)	Aerospace Engineering	B.S.	361 + 237 (P)
		M.S.	26
	Mechanical Engineering	B.S.	1,163 + 607 (P)
		M.S.	82
		Ph.D	74

DEGREE PRODUCTION

During 2014-15, the College has awarded a total of 1,240 B.S., 329 M.S. and 77 Ph.D. degrees.

Department	Program	Degree	Summer 2014	Fall 2014	Spring 2015	Total
CECE	Civil Engineering	B.S.	29	49	40	119
		M.S.	4	12	11	27
		Ph.D.	-	6	5	11
	Construction Engineering	B.S.	2	3	6	11
	Environmental Engineering	B.S.	7	24	19	50
		M.S.	1	4	4	9
		Ph.D.	1	1	3	5
Computer Science	Computer Science	B.S.	32	55	78	165
		M.S.	3	18	20	41
		Ph.D	1	6	6	13
	Digital Forensics	M.S.	6	16	11	33
	Information Technology	B.S.	30	47	66	143
Electrical & Computer Eng	Computer Engineering	B.S.	18	32	51	101
		M.S.	1	6	11	18
		Ph.D	1	1	-	2
	Electrical Engineering	B.S.	30	44	65	139
		M.S.	5	20	20	45
		Ph.D	1	3	10	14
	Photonics Science & Engineering	B.S.	-	-	-	-
IEMS	Engineering Management	M.S.	1	8	9	18
	Industrial Engineering	B.S.	11	37	45	93
		M.S.	1	10	18	29
		Ph.D	5	3	5	13
	Modeling and Simulation	M.S.	7	5	5	17
		Ph.D	2	1	2	5
MAE	Aerospace Engineering	B.S.	6	16	66	88
		M.S.	1	1	6	8
	Mechanical Engineering	B.S.	27	118	187	332
		M.S.	6	10	26	41
		Ph.D	5	3	3	11
MSE	Materials Science & Engineering	M.S.	4	4	3	11
		Ph.D	-	2	1	3

UCF Programming Team Reunion
October 24, 2014

The college conducts collaborative research with a number of UCF-based research centers including:

- Advanced Materials Processing and Analysis Center
- Biomolecular Science Center
- Center for Research and Education in Optics and Lasers
- Florida Photonics Center of Excellence
- Florida Solar Energy Center
- Florida Space Institute
- Institute for Simulation and Training
- NanoScience Technology Center
- National Center for Forensic Science, and
- Townes Laser Institute

Additionally, CECS financially supports the following three Centers and Research Clusters of Excellence:

1. Center for Advanced Turbomachinery and Energy Research (**CATER**) (website: http://cater.cecs.ucf.edu). Director: Professor Jayant S. Kapat
2. Center for Research in Computer Vision (**CRCV**) (website: http://crcv.ucf.edu). Director: Professor Mubarak Shah
3. Interactive Systems and User Experience (**ISUE**) (website: http://www.eecs.ucf.edu/isuelab/). Director: Dr. Joe LaViola

UCF's clustered research efforts join experts from a variety of disciplines and fields, and provide benefits, including: increased opportunities for the participating faculty to pursue collaborative scholarly work and funding, opportunities to more aggressively and successfully partner with renowned researchers and labs around the nation, higher national and international visibility, increased funding potential, and an avenue to train the future science and tech workforce with industry-relevant skills.

During the 2014-2015 year, the College's latest center that was initiated the previous year – Interactive Systems and User Experience (ISUE) Research Cluster of Excellence – has attracted research from U.S. Army, Office of Naval Research, National Science Foundation, and Lockheed Martin. There were also hardware donations from several industries. ISUE develops innovative techniques, tools and applications that improve the overall experience between humans and machines. Specifically the cluster pursues projects and interdisciplinary research that supports better learning, physical and mental rehabilitation, entertainment, relaxation and enjoyment.

In the CECE department, transportation is one of the key strategic areas of research. The SAFER SIM is a Tier 1 University Transportation Center sanctioned for four years starting from January 2014 and is dedicated to promoting interdisciplinary research using simulation techniques to address the safety issues prioritized by the U.S. Department of Transportation. This Transportation Center has multiple university partners. In FY2015, the Transportation Center received grants totaling over $4 million with faculty and student journal publications reaching 40.

Assistant Professor Weiwei Deng, Department of Mechancial and Aerospace Engineering, received the prestigious NSF CAREER award to advance his research in electrospray technology.

In addition to the three research clusters mentioned, six university faculty cluster initiatives (FCI) have been funded, three of which are led by CECS faculty. These clusters improve our ability to pursue interdisciplinary education and research projects with other colleges, centers and institutes, and enable the expansion of faculty members who are tenured in our college.

FEEDER (Foundations for Engineering Education for Distributed Energy Resources) is a major consortium funded with a $3.2 million grant from the U.S. Department of Energy. FEEDER was established as part of DOE's $12 million investment to improve and sustain distributed energy technologies, and prepare for a national shift from traditional energy sources to renewables such as solar and wind. UCF is the lead partner of FEEDER,in partnership with CECS and FSEC. FEEDER's partners include eight universities, eight utility companies, 11 supporting industry partners, and two national laboratories.

Research Productivity

Department	Patents	Books	Book Chapters	Journal Papers	Conference Papers
CECE	0	3	7	79	92
CS	4	2	12	44	83
ECE	2	2	2	66	74
IEMS	0	0	2	8	10
MAE	2	2	0	67	40
MSE	8	0	0	35	0
TOTAL	16	9	23	299	299

New Funding and Research Expenditures

Department	New Funding	Research Expenditures
CECE	$5,721,928.25	$4,530,709.31
CS	$6,042,901.78	$4,779,175.62
ECE	$4,587,404.28	$5,017,148.44
IEMS	$6,025,300.19	$5,351,667.04
MAE	$4,007,876.00	$2,616,973.44
MSE	$1,493,222.78	$1,756,301.63
TOTAL	$27,878,633.28	$24,051,975.48

Department of Civil, Environmental and Construction Engineering

Mohamed Abdel-Aty *(pictured at right)*

- University 2014 award for "Faculty Excellence in Mentoring Doctoral Students", recipient in the disciplinary grouping of "Engineering, Physical Sciences, and Life Sciences", March 2015.
- UCF Pegasus Professor, the university's highest faculty honor, April 2015
- Two best papers selected by the Transportation Research Board's Safety Performance Committee (out of 65 papers), January 2015.

Haitham Al-Deek

- Keynote Speaker at the 7th Traffic Safety Conference organized by the Jordan Traffic Institute, title of Professor Al-Deek's speech was "Innovative Research Methodology and Countermeasures for Combating Wrong-Way Driving," May 12-13, 2015, Amman, Jordan.
- A TV broadcast of Prof. Al-Deek's wrong-way driving research findings aired five times on Orlando's ABC TV-9, Feb.11-12, 2015.

Amir Behzadan

- Teaching Incentive Program Award, University of Central Florida, 2015.

Necati Catbas

- 2015, Award, Plaque of Appreciation, Keynote Presentation at International Conference on Civil and Environmental Engineering, (ICOCEE - Cappadocia 2015).
- 2014, Elected Fellow to Structural Engineering Institute (SEI).

Ni-Bin Chang

- Fellow, the International Society of Optics and Photonics (SPIE), Feb., 2015.

Steven Duranceau

- College Distinguished Researcher Award (February 6, 2015).
- 2015 Best Paper Award (as a co-Author with graduate student Ben Yoakum), Florida Section American Water Works Association's Fall 2015 Conference.

Naveen Eluru

- TRB Committee ANB20 2015 Young Researcher Paper Award for the paper "A Copula Based Joint Model of Injury Severity and Vehicle Damage in Two-Vehicle Crashes"
- 2014 Transportation Research Board Data Contest: Best Professor-Led Paper.

Woo Hyoung Lee

- ONR Summer Faculty Fellowship, Office of Naval Research (ONR) Summer Faculty Research Program (SFRP), Naval Surface Warfare Center – Carderock Division (NSWCCD), ONR, 2015
- InnoCentive Challenge Award, New Insights into Fluoride Delivery from Toothpaste (#9933557), Aug., 2014 (one of 3 awardees among 287 submissions).

Kevin Mackie

- Faculty excellence award, 2014/10/24. Corporate Affiliate Board, Department of Civil, Environmental, and Construction Engineering, University of Central Florida.

Nicos Makris

- Distinguished Visiting Fellow from the Royal Academy of Engineering, UK, under the Newton Research Collaboration Program.

Boo Hyun Nam

- Nam's sinkhole research has made two international media exposures. Nam had made interviews with MBC Special (top TV documentary show in Korea) and JTBC News (national TV news in Korea).

Essam Radwan

- Was honored during the 94th Annual Transportation Research Board meeting held in Washington DC during the period January 11-15, 2015. The International Road Federation (IRF) presented him with a plaque in recognition for his support of the 17th World Meeting held in Saudi Arabia.

Debra Reinhart

- American Academy of Environmental Engineering and Science Kappe Award, 2014

Dingbao Wang

- UCF Teaching Incentive Program (TIP) Award, 2015.
- UCF Reach for the Stars Award, 2015.
- Editors' Citation for Excellence in Refereeing, Geophysical Research Letters, American Geophysical Union, 2015.

Ricardo Zaurin

- College Excellence in Undergraduate Teaching Award (Founder's Day).

Department of Electrical Engineering & Computer Science
Computer Science Division

Ladislau Boloni

- Kurzweil Best Artificial General Intelligence Idea Prize 2014, Autobiography based prediction in a situated AGI agent. In Seventh Conf. of Artificial General Intelligence (AGI-2014), pp. 11–21, August 2014.

Mainak Chatterjee

- Recipient of AFOSR sponsored Air Force Summer Faculty Fellowship, 2015.
- Recipient of AFOSR sponsored Air Force Summer Faculty Fellowship, 2014.

Hassan Foroosh

- Research Incentive Award (RIA), 2014-2015.
- UCF Millionaire's Club, class of 2014.
- Excellence in Research Award, CECS, 2014.

Avelino Gonzalez

- UCF Pegasus Professor, the university's highest faculty honor, April 2015.

Arup Guha

- Received a Coaches Award at the 2014 ACM ICPC World Finals for helping UCF get to the ACM ICPC World Finals at least five times.

Mark Heinrich

- UCF TIP Award, April 2015.

Haiyan "Nancy" Hu

- UCF Reach for the Stars Award, 2015.

Kien Hua

- ACM Recognition of Service Award for serving as Chair of the 2014 ACM Multimedia Conference.

Charles Hughes

- Keynote speaker at ACM Multimedia 2014 1st International Workshop on Emerging Multimedia Applications and Services for Smart Cities (EMASC-2014).
- TeachLivE Included in Sesame Workshop Video of Five Most Innovative Approaches to Teacher Professional Development (Video released in summer 2014).

Sumit Jha

- Best Paper Award, Fourth Annual IEEE International Conference on Computational Advances in Bio and Medical Sciences, Institute for Electrical and Electronics Engineers, Sept. 2014.

Ali Orooji

- Certificate of Achievement, Director, North America Contests; ACM International Collegiate Programming Contest; International, June 2014.

Guo Jun Qi

- Best Student Paper Award (co-recipient as the mentor of the student author), IEEE International Conference on Data Mining (ICDM), December, 2015.

Mubarak Shah

- His students won the following awards
  - Afshin Dehghan CS Doctoral Student of the Year Award
  - Top 10% Paper Award; International Conference on Image Processing, 2014; Yang Yang, Mubarak Shah, Learning Discriminative Features and Metrics for Measuring Action Similarity, ICIP 2014, Paris, France, October 27-30, 2014.
  - Arjun Watane, Audience Choice; First place for presentation at the Showcase of Undergraduate Research, April 2015.

Kenneth Stanley

- Best Poster Award at ALIFE 14 (out of 65 posters), Fourteenth International Conference on the Synthesis and Simulation of Living Systems (ALIFE XIV, New York, NY), for Soros, L. and Stanley, K., Identifying Necessary Conditions for Open-Ended Evolution through the Artificial Life World of Chromaria.
- Best Paper Award in Artificial Life / Robotics / Evolvable Hardware Track at GECCO-2014 (out of 35 in track), Genetic and Evolutionary Computation Conference (GECCO-2014, Vancouver, Canada), for Woolley, B. and Stanley, K., A Novel Human-Computer Collaboration: Combining Novelty Search with Interactive Evolution.

Gita Sukthankar

- UCF Reach for the Stars, April 2015.

Damla Turgut

- Featured in 2015 UCF Woman Making History, UCF Center for Success of Women Faculty, March 5, 2015.
- Distinguished Member of IEEE INFOCOM 2015 TPC, December 2014.
- Outstanding Reviewer, Journal of Parallel and Distributed Computing, Elsevier, March 2015.
- Outstanding Reviewer, Ad Hoc Networks Journal, Elsevier, June 2015.

Shaojie Zhang

- American Society for Cell Biology Coverage of paper in Proceedings of the National Academy of Sciences, American Society for Cell Biology, Feb. 2015.

Department of Electrical Engineering & Computer Science
Electrical and Computer Engineering Division

ECE Division

- Best Graduate Schools, EE and CpE, US News & World Reports, March 2015.

George Atia

- Top 10 Student Paper Award at the 57th International Midwest Symposium on Circuits & Systems (MWSCAS), Texas, August 2014 (In collaboration with Ahmed Aldhahab and Dr. Wasfy Mikhael for paper on facial recognition based on multiresolution analysis and feature alignment).
- Finalist for Best Paper Award at the 48th Asilomar Conference on Signals, Systems and Computers, Pacific Grove CA, Nov 2014 (In collaboration with Alan Paris and Dr. Vosoughi for research on Advanced Signal Processing for Brain Computer Interfacing).

Xun Gong

- UCF Teaching Incentive Program (TIP) Award 2015.

Yier Jin

- Best Paper Candidate, IEEE/ACM Design Automation Conference (DAC'15), 2015. (6 out of 800 submissions)

W. Linwood Jones

- Research Award: Outstanding Contributions to CONAR AQ/SAC-D Satellite Program, Spring 2014.
- NASA Agency Group Achievement Award with a citation reading "For exceeding all expectations for GPM operations, data processing, algorithm performance, science impact, and education and public outreach within one year after launch", Spring 2015.

Juin Liou

- IEEE Electron Devices Society Education Award, Nov. 2014.

Donald Malocha

- UCF RIA 2014
- Listed as one of NASA Hottest Technologies, TechBriefs, Dec. 2014.

Wasfy Mikhael

- Certificate of Top 10 Student Paper Award to: "Ahmed Aldhahab, George Atia, and Wasfy B. Mikhael" From: IEEE 57th International MWSCAS Conference for the paper: "Supervised Facial Recognition Based on Multiresolution Analysis and Feature Alignment, "College Station, Texas, August 3 - 6, 2014.
- Certificate of Recognition of Outstanding Performance, Service, and Contributions to the Midwest Symposium on Circuit and System (IEEE 57th International MWSCAS), College Station, Texas, August 3 - 6, 2014.
- Certificate of Best Student Paper Award to:"C. R. Parkey and W. B. Mikhael: From IEEE AUTOTESTCON for the paper: "Linearized Adaptation of Non- Linear Post Conversion Correction for TI-ADCs: A Behavioral Study," Louis, MO, September 15 - 17, 2014.

Marwan Simaan

- Received the Outstanding Paper Award from the Metal Industry Committee of the IEEE Industry Applications Society.
- Elected Fellow of the National Academy of Inventors

Kalpathy Sundaram

- Thomas D. Callinan Award, Dielectric Science and Technology Division of the Electrochemical Society, 2015.

Jun Wang

- UCF Reach For the Stars Award, 2015.
- 2015 Teaching Incentive Program Award

Jiann-Shiun Yuan

- TIP Award, UCF, 2014-2015.
- College Research Excellence Award at the full Professor level, 2014-2015.

Department of Industrial Engineering and Management Systems

Mark Calabrese

- CECS Undergraduate Teacher of the Year, Spring 2014.

Michael Proctor

- Teaching Incentive Plan (TIP) Award, 2014/2015.

Luis Rabelo

- 2014 ISERC Best Track Paper Award in Engineering Management ", Institute of Industrial Engineers (IIE), June 2, 2014.

Department of Materials Science and Engineering

Romain Gaume

- Defense University Research Instrumentation Program Award Winner.

Catherine Kammerer

- CECS Teaching Associate of the Year, UCF CECS, 2014.

Kathleen Richardson

- Defense University Research Instrumentation Program Award Winner.

Yongho Sohn

- Defense University Research Instrumentation Program Award Winner.

Department of Mechanical and Aerospace Engineering

Kareem Ahmed

- The American Chemical Society – Petroleum Research Fund, Doctoral New Investigator Award, January 2015.

Weiwei Deng *(pictured at left)*

- NSF CAREER Award, April 2015.

Ali Gordon

- ASEE-AFOSR Summer Faculty Fellowship Program award. This is a research-related award, Summer 2014.

Nina Orlovskaya

- UCF RIA award, 2015.

Challapalli Suryanaraya

- Award for Lifetime Achievement in Engineering, Central Florida Engineers, February 2015.

Yunjun Xu

- UCF Millionaire Club, 2014.

CECS has 158 faculty members (tenured/tenure-eligible, instructors and lecturers) including 12 who joined the college during the 2014 - 2015 academic year.

Kareem Ahmed, Assistant Professor (MAE) - Hired Dec. 23, 2014
Kareem Ahmed obtained his Ph.D. in 2009 and M.S. in 2006 degree in Mechanical Engineering from University at Buffalo, and his B.S. in 2004 degree in Mechanical Engineering from the State University of New York at Alfred.. Before joining UCF he was an Assistant Professor at the Department of Mechanical & Aerospace Engineering at Old Dominion University from 2013 - 2014. Prior to that he has served three years as a Senior Aero/Thermo Engineer at Pratt & Whitney Military Engines – United Technologies Corporation (2011-2013) working on Augmentor and Exhaust Systems – Advanced Engine Programs and Technologies. He also served as a faculty at Florida State University from 2009 - 2011. His research interests are in the area of propulsion and energy focusing on multi-phase turbulent reacting and non-reacting flows, fluid mechanics, turbulent combustion, pressure gain combustion, combustion dynamics, supersonic compressible flows, flow control, fluid-structure interaction, fluidic-flow interactions, flame-fluidic interactions, hydrodynamic instabilities, experimental methods and advanced optical diagnostics.

Ulas Bagci, Assistant Professor, CS, CRCV - Hired Dec. 23, 2014

Ulas Bagci obtained his Ph.D. degree from School of Computer Science, University of Nottingham, United Kingdom, in collaboration with Radiology department of University of Pennsylvania. He received his masters from Electrical Engineering and Computer Sciences and certificates of mastery from Harvard, Berkeley, MIT, and Johns Hopkins Universities in the topics of statistics, public health, and clinical trials. His research interests are image processing and statistical machine learning and their applications in biomedical and clinical imaging. Bagci was a staff scientist and the lab manager at the NIH's Center for Infectious Disease Imaging Lab, department of Radiology and Imaging Sciences. Bagci had been the leading scientist (image analyst) in biosafety/bioterrorism project initiated jointly by NIAID and IRF. Bagci is senior member of IEEE and RSNA, and member of scientific organizations such as Society of Nuclear Medicine and Molecular Imaging, American Statistical Association, Royal Statistical Society, AAAS, and MICCAI.

Richard Biehl, Lecturer, IEMS - Hired Dec. 23, 2014
Richard Biehl obtained his Ph.D. in Applied Management and Decision Sciences in 2008, and an M.S. in Educational Change & Technology Innovation in 1999 from Walden University. He is certified as a Six Sigma Black Belt, and as a Software Quality Engineer, by the American Society for Quality. He spent five years as an adjunct instructor in IEMS before joining the department in 2015 to work on the new on-line master's track in Healthcare Systems Engineering. His research interests include the application of chaos and complexity theories to the systems engineering of healthcare, supported by the semantic interoperability of biomedical data in support of system feedback and control.

Naveen Eluru, Assistant Professor, CECE - Hired Aug. 8, 2014
Naveen Eluru obtained his Master's and Ph.D. from the University of Texas at Austin. He is primarily involved in the formulation and development of discrete choice models that allow us to better understand the behavioral patterns involved in various decision processes. He is actively involved in the development of integrated modeling frameworks for travel demand modeling and vehicular emissions for urban metropolitan regions. He has published journal articles in wide ranging topics including transportation planning, land-use modeling, integrated demand supply models, activity time-use analysis and transportation safety. Eluru is currently a member of Transportation Research Board committee on Statistical Methods. He is a member of the Editorial Advisory Board of Analytic Methods in Accident Research and Sustainable Cities and Society journals. Prior to joining UCF, he worked as an Assistant Professor at McGill University.

Rochelle Elva, Lecturer, CS - Hired Aug. 8, 2014
Rochelle Elva obtained her Ph.D. in Computer Science from the University of Central Florida in August 2013. On completion of her Ph.D., she worked for one year as a Visiting Assistant Professor at the University of Missouri – St. Louis. In the fall of 2014, she returned to UCF as a visiting lecturer where she teaches Introduction to C Programming, Database Concepts, Database Systems, Operating Systems, Computer Science 1 and Fundamentals of IT. She also serves as Academic Advisor to Undergraduate Computer Science students.

Matthew Fontaine, CS, '11, '13, Instructor - Hired Aug. 8, 2014
Matthew Fontaine obtained a Master of Science degree in Computer Science from UCF in 2013. He was a research assistant at UCF's Institute for Simulation and Training, Interactive Realities Lab from 2008-2014 and has served the UCF's Division of Computer Science as Instructor since fall 2014. He serves as an algorithms coach for the UCF Programming Team and annually contributes as a problem writer and judge to ACM ICPC's North American Invitational Programming Contest. His teaching focuses on discrete structures and other foundational classes needed for understanding algorithms, data structures, and theoretical computer science.

Kelly Kibler, Assistant Professor, CECE - Hired Dec. 23, 2014
Kelly Kibler received her Ph.D. in Water Resources Engineering from Oregon State University in 2011. Prior to joining UCF on Dec. 23, 2014, she simultaneously held a research position at a United Nations Educational, Scientific, and Cultural Organization water research center and an adjunct faculty

position with the Japanese National Graduate Institute for Policy Studies in Tokyo. Kelly directs the UCF Ecohydraulics Laboratory, with a research focus on coupled interaction between biological and physical variables in natural and engineered water systems. She is currently working on NSF-funded projects investigating impacts of restoration in Florida's estuaries and the Food Energy Water nexus.

Nicos Makris, Professor, CECE - Hired Aug. 8, 2014
Nicos Makris received his Ph.D. in 1992 and his M.S. in 1990 from the State University of New York at Buffalo. He received his bachelor's in Civil Engineering from the National Technical University, Athens, Greece in 1988. He has more than 25 years of research, academic and professional experience in the areas of structural-earthquake engineering and applied mechanics-dynamics. His research interests include the protection and design of structures against natural and man-made hazards, the analysis and design of rocking structures (tall/slender structures free to step on their foundation—from tall bridges to classical ancient temples), system identification and health monitoring studies with emphasis on bridges, soil-structure interaction and the reconstruction-preservation of ancient monuments and stone arches in areas with high seismic hazard. Makris has published more than 100 papers in archival journals, 110 papers in conference proceedings and 30 technical research reports and monographs.

Yoav Peles, Professor, MAE - Hired Dec. 23, 2014
Yoav Peles is the Chair of the Department of Mechanical and Aerospace Engineering at UCF. Prior to UCF, Professor Peles was the Director of the Mechanical Engineering Program and the Associate Department Head for Graduate Studies in the Department of Mechanical, Aerospace and Nuclear Engineering at Rensselaer Polytechnic Institute. He is an international leader in convective heat transfer in micro domains. Peles published more than 90 peer reviewed journal papers, about 50 conference papers, has several patents, written four book chapters, and is the author of a book entitled Contemporary Perspective on Flow Boiling Instabilities in Microchannels. He organized and co-organized several international conferences and workshops including the ASME International Conference on Nanochannels, Microchannels, and Minichannels 2013, the International Workshop on Micro and Nano Structures for Phase Change Heat transfer, and the first Gordon Research Conference on Micro and Nanoscale Phase Change Heat Transfer (2015). He is a fellow of the American Society of Mechanical Engineering.

Arvind Singh, Assistant Professor, CECE - Hired Aug. 8, 2014
Arvind Singh obtained his Ph.D. degree in Civil Engineering from University of Minnesota in December 2011. After his graduation, he worked at the National Center for Earth–surface Dynamics and St. Anthony Falls Laboratory, University of Minnesota as a Post-doctoral Associate. He joined UCF as an Assistant Professor in the Department of Civil, Environmental and Construction Engineering in August, 2014. His major research interests are in the area of hydrology and geomorphology. Currently he is focusing on linking and modeling interacting processes (such as fluid flow, topography, and material flux transport) over a range of spatio-temporal scales that will help us increase our ability to make quantitative predictions of how geomorphically and societally relevant variables will change under scenarios of future climatic and land-use changes.

GuoJun Qi, Assistant Professor, CS - Hired Aug. 8, 2014
Guo-Jun Qi is an assistant professor of Computer Science at the University of Central Florida. Prior to joining UCF, he was a Research Staff Member at the IBM T.J. Watson Research Center (Yorktown Heights, NY). He worked with Professor Thomas Huang in the Image Formation and Processing Group at the Beckman Institute in the University of Illinois at Urbana-Champaign, where he received the Ph.D. in Electrical and Computer Engineering in December 2013. His main research interests include computer vision, pattern recognition, data mining, and multimedia computing. In particular, he is interested in information and knowledge discovery, analysis and aggregation, from multiple data sources of diverse modalities (e.g., images, audios, sensors and text). His research also aims at effectively leveraging and aggregating data shared in an open connected environment (e.g., social, sensor and mobile networks), as well as developing computational models and theory for general-purpose knowledge and information systems. His research results have been published in several venues, including CVPR, ICCV, ACM Multimedia, KDD, ICML, IEEE T. PAMI, IEEE T. KDE, and Proceedings of IEEE. He has served or will serve as the Area Chair (Senior Program Committee Member) for ACM Multimedia, KDD, CIKM and ICME, as well as the Program Committee Member for CVPR, ICCV, and ICIP. He was also was a Program Committee Chair for MMM 2016. In addition, he has co-edited two special issues of "Deep Learning for Multimedia Computing" and "Big Media Data: Understanding, Search and Mining" for IEEE T. Multimedia and IEEE T. Big Data, respectively.

Robert Steward, Assistant Professor, MAE - Hired Jan. 9, 2015
Robert Steward Jr. is an assistant professor in the Mechanical and Aerospace Engineering Department. Prior to his current appointment he was a research fellow in the Laboratory for Molecular and Integrative Cellular Dynamics at the Harvard T.H. Chan School of Public Health where he studied the physical mechanisms by which mechanical forces affect the cardiovascular system. His doctoral studies were completed in the Mechanical Engineering Department at Carnegie Mellon University in 2011 where he developed novel methodologies to probe the effects of mechanical forces on cell behaviors. He also holds a bachelors in Mechanical Engineering from Clark Atlanta University. Results yielded from his studies have implication in multiple fields including cell biology, biophysics, and bioengineering. Dr. Robert Steward Jr.'s research is in the field of cellular mechanics.

Seetha Raghavan, assistant professor, Mechanical and Aerospace Engineering, speaks to Engineering Leadership students
October 31, 2014

STUDENT PH.D. DISSERTATIONS

Year	Semester	Last Name	First Name	Program	Title	Advisors	Dept.
2014	Fall	Huang	Yuping	Industrial Engineering	Stochastic Optimization for Electric Power Generation with Reliability Improvement Using Decomposition Algorithms	Qipeng Zheng	IEMS
2014	Fall	Al Kaaf	Khalid	Civil Engineering	Transferability & Calibration of the Highway Safety Manual Performance Functions and Development of New Models for Urban Four-Lane Divided Roads	Mohamed Abdel-Aty	CECE
2014	Fall	Consoli	Frank	Civil Engineering	Application of Transit Signal Priority Technology for Transit Service	Haitham Al-Deek	CECE
2014	Fall	Lochrane	Tyler	Civil Engineering	A New Multidimensional Psycho-Physical Framework for Modeling Car-Following in a Freeway Work Zone	Haitham Al-Deek	CECE
2014	Fall	Shi	Qi	Civil Engineering	Urban Expressway Safety and efficiency Evaluation and Improvement Using Bog Data	Mohamed Abdel-Aty	CECE
2014	Fall	Xiao	Yulin	Civil Engineering	Quantifying Ultra-High Performance Concrete Flexural System Mechanical Response	Kevin Mackie	CECE
2014	Fall	Abuzwidah	Muamer	Civil Engineering	Traffic Safety Assessment of Different Toll Collection Systems on Expressways Using Multiple Analytic Techniques	Mohamed Abdel-Aty	CECE
2014	Fall	Shu	Guang	Computer Engineering	Human Detection Tracking and Segmentation in Surveillance Video	Mubarak Shah	EECS
2014	Fall	Alabrah	Amerah	Computer Science	Improved Internet Security Protocols Using Cryptographic One-Way Hash Functions	Mostafa Bassiouni	EECS
2014	Fall	Cashion	Jeffrey	Computer Science	Intelligent Selection Techniques for Virtual Environments	Joseph LaViola	EECS
2014	Fall	Cheema	Salman	Computer Science	Pen-Based Methods for Recognition and Animation of Handwritten Physics Solutions	Joseph LaViola	EECS
2014	Fall	Dey	Soumyabrata	Computer Science	Automatic Detection of Brain Functional Disorder Using Imaging Data	Mubarak Shah	EECS

Year	Semester	Last Name	First Name	Program	Title	Advisors	Dept.
2014	Fall	Idrees	Haroon	Computer Science	Visual Analysis of Extremely Dense Crowded Scenes	Mubarak Shah	EECS
2014	Fall	Sun	Chuan	Computer Science	Exploring Sparsity, Self-Similarity, and Low Rank Approximation in Action Recognition, Motion Retrieval, and Action Spotting	Hassan Foroosh	EECS
2014	Fall	Farag Allah	George	Electrical Engineering	Treatment-Specific Approaches for Analysis and Control Left Ventricular Assist Devices	Mirwan Simaan	EECS
2014	Fall	Ghazi	Zoubair	Electrical Engineering	CONAE Microwave Radiometer (MWR) Counts to Brightness Temperature Algorithm	W Linwood Jones	EECS
2014	Fall	Li	Cong	Electrical Engineering	On Kernel-Based Multi-Task Learning	Michael	EECS
2014	Fall	Hardin	Mike	Environmental Engineering	Development of Treatment Train Techniques for the Evaluation of Low Impact Development in Urban Regions	Manoj Chopra	CECE
2014	Fall	Alsowayigh	Mohammad	Industrial Engineering	Assessing Safety Culture Among Pilots in Saudi Airlines: A Quantitative Study Approach	Waldemar Karwowski	IEMS
2014	Fall	Li	Muyuan	Industrial Engineering	A Short Window Granger Causality Approach to Identify Brain Functional Pattern Associated with Emergent Behavioral Impairment Under Sleep Deprivation	Waldemar Karwowski, Petros	IEMS
2014	Fall	Lim	Geunsik	Materials Engineering	An Uncooled Mid-Wave Infra-red Detector Based on Opti-cal Response of Laser-Doped Silicon Carbide	Aravinda Kar	MAE
2014	Fall	Yang	Xueping	Materials Engineering	Non-Oxide Porous Ceramics from Polymer Precursor	Linan An	MSE
2014	Fall	Khatami	Seyed Mohammad Navid	Mechanical Engineering	Modeling and Spray-Pyrolysis Processing of Mixed Metaloxide Nano-Composite Gas Sensor Films	Olusegun Ilegbusi	MAE
2014	Fall	Madani	Seyed Omid	Mechanical Engineering	Decentralized Power Management and Transient Control in Hybrid Fuel Cells Ultra-Capacitor System	Tuhin Das	MAE

STUDENT PH.D. DISSERTATIONS

Year	Semester	Last Name	First Name	Program	Title	Advisors	Dept.
2014	Fall	Xie	Zhilin	Mechanical Engineering	Rhenium, Osmium, and Iridium Diborides by Mechanochemistry: Synthesis, Structure, Thermal Stability and Mechanical Properties	Nina Orlovskaya	MAE
2014	Summer	Chen	Xi	Environmental Engineering	Climate and Landscape Controls on Seasonal Water Balance at the Watershed Scale	Dingbao Wang	CECE
2014	Summer	Debroy	Saptarshi	Computer Engineering	Spectrum Map and its Applications in Cognitive Radio Networks	Mainak Chatterjee	EECS
2014	Summer	Hoover	Amy	Computer Science	Functional Scaffolding for Musical Composition: A New Approach in Computer-Assisted Music Composition	Kenneth Stanley	EECS
2014	Summer	Wang	Xi	Electrical Engineering	Learning Collective Behavior in Multi-relational Networks	Gita Sukthankar	EECS
2014	Summer	Costello	Anthony	Industrial Engineering	Human Face Mnemonics for Information Retrieval Under Workload	Waldemar Karwowski	IEMS
2014	Summer	Francisco	Melissa	Industrial Engineering	A Framework of Critical Success Factors for Business Organizations that Lead to Exceptional Financial and Quality Systems Performance	Ahmad K Elshennawy	IEMS
2014	Summer	Halawany	Abdullah	Industrial Engineering	Using Design for Six Sigma Methodology to Develop Quantitative Model for Curricula Assessment and Improvement in Higher Education Institutions	Ahmad K Elshennawy	IEMS
2014	Summer	Marin	Mario	Industrial Engineering	A Framework for Workplace Management, an Agent Based Simulation Approach	Luis Rabello	IEMS
2014	Summer	Pastrana	John	Industrial Engineering	Model-Based Systems Engineering (MBSE) Approach to Distributed and Hybrid Simulation Systems	Luis Rabello	IEMS
2014	Summer	Freihofer	Gregory	Mechanical Engineering	Nanocomposite Coating Mechanics via Piezospectroscopy	Seetha Raghavan	MAE
2014	Summer	Knipe	Kevin	Mechanical Engineering	In-Situ Synchrotron Studies of Turbine Blade Thermal Barrier Coatings Under Operational Environments	Seetha Raghavan	MAE

Year	Semester	Last Name	First Name	Program	Title	Advisors	Dept.
2014	Summer	Pent	Jared	Mechanical Engineering	Combustion Instability Mechanisms of a Reacting Jet in Crossflow at Gas Turbine Operating Conditions	Jayanta Kapat	MAE
2014	Summer	Shen	He	Mechanical Engineering	Bio-Inspired Attitude Control of Micro Air Vehicles Using Rich Information from Airflow Sensors	Yunjun Xu	MAE
2014	Summer	Salcedo	Julie	Modeling & Simulation	"Instructional Strategies for Scenario-Based Training of Human Behavior Cue Analysis with Robot Aided Intelligence, Surveillance, Reconnaissance"	Stephanie Lackey	IEMS
2014	Summer	Stevens	Jonathan	Modeling & Simulation	"A Program Manager's Dilemma: Measuring the Effect of Different Visual Modalities in Mixed Reality Aerial Door Gunnery"	Peter Kincaid	IEMS
2014	Summer	Yang	Weiwei	Mechanical Engineering	Response of Micro-Jets to Electrohydrodynamic Perturbations	Weiwei Deng	MAE
2015	Spring	Akhavian	Reza	Civil Engineering	Data-Driven Simulation Modeling of Construction and Infrastructure Operations Using Process Knowledge Discovery	Amir Behzadan	CECE
2015	Spring	Imen	Sanaz	Civil Engineering	Drinking Water Infrastructure Assessment with Teleconnect Signals, Satellite Data Fusion and Mining	Ni-Bin Chang	CECE
2015	Spring	Mokhtari	Soroush	Civil Engineering	Analytical Study of Computer Vision-Based Pavement Crack Quantification Using Machine Learning Techniques	Hae-Bum Yun	CECE
2015	Spring	Passeri	Davina	Civil Engineering	Tidal Hydrodynamic Response to Sea Level Rise and Coastal Geomorphology in the Northern Gulf of Mexico	Scott Hagen	CECE
2015	Spring	Wu	Liuliu	Civil Engineering	Applications of Computer Vision Technologies for Automated Crack Detection and Quantification for the Inspection of Civil Infrastructures Systems	Hae-Bum Yun	CECE

STUDENT PH.D. DISSERTATIONS

Year	Semester	Last Name	First Name	Program	Title	Advisors	Dept.
2015	Spring	Amjad	Muhammad Faisal	Computer Science	Opportunistic Spectrum Utilization for Cognitive Radio Networks: Challenges and Solutions	Cliff Zou	EECS
2015	Spring	Beheshti	Rahmatollah	Computer Science	Modeling Social Norms in Real-World Agent-Based Simulations	Gita Sukthankar	EECS
2015	Spring	Davami	Erfan	Computer Science	Modeling User Transportation Patterns Using Mobile Devices	Gita Sukthankar	EECS
2015	Spring	Kulshreshth	Arun	Computer Science	Exploring 3D User Interface Technologies for Improving the Gaming Experience	Joseph LaViola	EECS
2015	Spring	Sanchez Salazar	Jose	Computer Science	Reasoning Tradeoffs in Implicit Invocation and Aspect Oriented Languages	Gary Leavens	EECS
2015	Spring	Tariq	Sana	Computer Science	Improving Fairness, Throughput, and Blocking Performance for Long Haul and Short Reach Optical Networks	Mostafa Bassiouni	EECS
2015	Spring	Asrari	Arash	Electrical Engineering	Optimal Distribution Network Reconfiguration Using Meta-Heuristic Algorithms	Thomas Wu	EECS
2015	Spring	Farrar	Spencer	Electrical Engineering	An On-Orbit Calibration Plan for Spaceborne Microwave Radiometers Using Special Spacecraft Attitude Maneuvers	W Linwood Jones	EECS
2015	Spring	Hejazin	Yazan	Electrical Engineering	A Roughness Correction for Aquarius Using the CONAE Microwave Radiometer	W Linwood Jones	EECS
2015	Spring	Karnati	Kalyan	Electrical Engineering	Beam-Steerable Reflectarray Antennas for Ka-band Applications	Xun Gong	EECS
2015	Spring	Luo	Sirui	Electrical Engineering	Design, Characterization, and Analysis of Component Level Electrostatic Discharge (ESD) Protection Solutions	Juin Liou	EECS
2015	Spring	Parkey	Charna	Electrical Engineering	Post Conversion of Non-Linear Mismatches for Time Interleaved Analog-to-Digital Converters	Wasfy Mikhael	EECS
2015	Spring	Rawlins	Gregory	Electrical Engineering	An Optimization of Thermodynamic Efficiency vs. Capacity for Communication Systems	Pawel Wocjan	EECS

Year	Semester	Last Name	First Name	Program	Title	Advisors	Dept.
2015	Spring	Urdaneta	Maryory	Electrical Engineering	Enhancing Microwave Hyperthermia Using Nanoparticles	Parveen Wahid	EECS
2015	Spring	Wang	Zhixin	Electrical Engineering	Design of Novel Devices and Circuits for Electrostatic Discharge Protection Applications in Advanced Semiconductor Technologies	Juin Liou	EECS
2015	Spring	Zhang	Kun	Electrical Engineering	Lyapunov-Based Robust and Adaptive Control Design for Nonlinear Uncertain Systems	Aman Behal	EECS
2015	Spring	Cumming	Andrea	Environmental Engineering	Assessing Biofiltration Pretreatment for Ultrafiltration Membrane Processes	Steven Duranceau	CECE
2015	Spring	Maimoun	Mousa	Environmental Engineering	Life-Cycle Greenhouse Gas Emissions and Water Footprint of Residential Waste Collection and Management	Debra Reinhart	CECE
2015	Spring	Nogaj	Thomas	Environmental Engineering	Mathematical Modeling of Carbon Removal in the High Rate Activated Sludge System	Andrew Randall	CECE
2015	Spring	Brown	Barclay	Industrial Engineering	A New Paradigm Integrating Business Process Modeling and Use Case Modeling	Waldemar Karwowski	IEMS
2015	Spring	He	Yiling	Industrial Engineering	The Effects of Chronic Sleep Deprivation on Sustained Attention: A Study of Dynamic Brain Functional Connectivity	Waldemar Karwowski, Petros	IEMS
2015	Spring	Laval	Stuart	Industrial Engineering	A Framework for Interoperability on the United States Electric Grid Infrastructure	Luis Rabello	IEMS
2015	Spring	Park	Tae Woong	Industrial Engineering	An Agile Roadmap for Live, Virtual and Constructive-Integrating Training Architecture (LVC-ITA): A Case Study Using Component Based Integrated Simulation Engine	Gene Lee, Luis Rabelo	IEMS
2015	Spring	Ramtin	Faraz	Industrial Engineering	Modeling and Analysis of Automated Storage and Retrievals System with Multiple in-the-aisle Pick Positions	Jennifer Pazour	IEMS

STUDENT PH.D. DISSERTATIONS

Year	Semester	Last Name	First Name	Program	Title	Advisors	Dept.
2015	Spring	Yu	Zenan	Materials Engineering	Nano-Architectured Energy Storage Devices	Jayan Thomas	MSE
2015	Spring	Huayamave	Victor	Mechanical Engineering	Biometrics of Developmental Dysplasia of the Hip: An Engineering Study of Closed Reduction Utilizing the Pavlik Harness for a Range of Subtle to Severe Dislocations in Infants	Alain Kassab	MAE
2015	Spring	Mohagheghi	Mahmood	Mechanical Engineering	Thermodynamic Analysis and Optimization of Supercritical Carbon Dioxide Brayton Cycles	Jayanta Kapat	MAE
2015	Spring	Vidal Urbina	Andres	Mechanical Engineering	Meshless Direct Simulation and Large Eddy Simulation of Turbulent Incompressible Flows	Alain Kassab	MAE
2015	Spring	Hollander	Christopher	Modeling & Simulation	Information Propagation Algorithms for Consensus Formation in Decentralized Multi-Agent Systems	Annie Wu	EECS
2015	Spring	Maraj	Crystal	Modeling & Simulation	Investigating Simulation-Based Pattern Recognition Training for Behavior Cue Detection	Stephanie Lackey	IEMS

David Bettner, CS, '03,
Co-Founder,
Words With Friends,
speaks to students
September 19, 2014

Civil, Environmental and Construction Engineering Publications, 2014-2015

BOOKS:

1. Catbas, F.N., *Dynamics of Civil Structures: Volume 4*, Springer, 2014, 528 pages. ISBN 978-3-319-04545-0
2. Chang, N.B. and A. Pire, *Sustainable Solid Waste Management: A Systems Engineering Approach*, John Wiley/IEEE: NY, March 2015, 936 pages. ISBN: 978-1-118-45691-0.
3. Jorgensen, S.E., N.B. Chang, and F.L. Xu, *Ecological Modelling and Engineering of Lakes and Wetlands Volume 26: Developments in Environmental Modelling*, Elsevier, September 2014, 720 pages. ISBN: 978-0-444-63249-4.

BOOK CHAPTERS:

1. Chang, N.B., M.P. Wanielista, Z.M. Xuan, and Z. Marimon, Floating Treatment Wetlands for Nutrient Removal in a Subtropical Stormwater Wet Detention Pond with a Fountain, in: S.E. Jorgensen, N.B. Chang and F.L. Xu (Eds.) Ecological Modelling and Engineering of Lakes and Wetlands. Elsevier, 2014, pp. 437-467. ISBN: 978-0-444-63249-4
2. Chang, N.B., Z. Xuan, and Z. Marimon, System Dynamics Modeling for Nutrient Removal in a Stormwater Wet Pond, in: S.E. Jorgensen, N.B. Chang and F.L. Xu (Eds.) Ecological Modelling and Engineering of Lakes and Wetlands. Elsevier, 2014, pp. 494-516. ISBN: 978-0-444-63249-4
3. Chang, N.B., M.P. Wanielista, and Z.M. Xuan, A Novel Subsurface Upflow Wetland with the Aid of Biosorption Activated Media for Nutrient Removal, in: S.E. Jorgensen, N.B. Chang and F.L. Xu (Eds.) Ecological Modelling and Engineering of Lakes and Wetlands. Elsevier, 2014, pp. 626-647. ISBN: 978-0-444-63249-4
4. Chang, N.B., M.P. Wanielista, and Z.M. Xuan, Tracer-based System Dynamic Modeling for Designing a Subsurface Upflow Wetland for Nutrient Removal, in: S.E. Jorgensen, N.B. Chang and F.L. Xu (Eds.) Ecological Modelling and Engineering of Lakes and Wetlands. Elsevier, 2014, pp. 650-676. ISBN: 978-0-444-63249-4
5. Lee, W.H., X. Guo, D. Guo, A. Campiglia, X. Ma, and J. Church, In Situ Polycyclic Aromatic Hydrocarbon (PAH) Sensors, in: A.J. Forsgren (Ed.) Wastewater Treatment: Occurrence and Fate of Polycyclic Aromatic Hydrocarbons (PAHs). CRC Press, 2015, pp. 175-210. ISBN-13: 978-1482243178
6. Makris N. and M.F. Vassiliou, The Dynamics of the Rocking Frame, in: I. Psycharis, S. Pantazopoulou, M. Papadrakakis (Eds.) Seismic Assessment, Behavior and Retrofit of Heritage Buildings and Monuments. Springer International Publishing, Switzerland, 2015, pp. 37-59. DOI:10.1007/978-3-319-16130-3
7. Wang, T., F.N. Catbas, and L. Zhang, Chapter 1: Automatic Modal Identification based on Narrow-Band Algorithms, in: F.N. Catbas (Ed.) Dynamics of Civil Structures Volume 4. Springer, 2014, pp. 1-6. ISBN 978-3-319-04545-0

REFEREED JOURNAL ARTICLES:

1. Abou-Senna, H. and E. Radwan, "Developing a Microscopic Transportation Emissions Model to Estimate Carbon Dioxide Emissions on Limited-Access Highways," *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2428, 2014, pp. 44-53. DOI:10.3141/2428-06
2. Abuzwidah M., M. Abdel-Aty, and M. Ahmed, "Safety Evaluation of Hybrid Open Road Tolling Plazas," *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2435, 2014, pp. 53-60. DOI:http://dx.doi.org/10.3141/2435-07
3. Ahmed M. and M. Abdel-Aty, "Evaluation and Spatial Analysis of Automated Red-light Running Enforcement Cameras," *Journal of the Transportation Research C: Emerging Technologies*, Vol. 50, 2015, pp. 130-140. DOI:10.1016/j.trc.2014.07.012
4. Ahmed M., M. Abdel-Aty, J. Lee, and R. Yu, "Real-time Assessment of Fog-related Crashes using Weather Airport Data: A Feasibility Analysis," *Accident Analysis & Prevention*, Vol. 72, 2014, pp. 309-317. DOI:10.1016/j.aap.2014.07.004
5. Anowar, S., N. Eluru, and L. Miranda-Moreno, "Alternative Modeling Approaches used for Examining Automobile Ownership: A Comprehensive Review," *Transport Reviews*, Vol. 34, No. 4, 2014, pp. 441-473. DOI:10.1080/01441647.2014.915440
6. Anowar S., S. Yasmin, N. Eluru, and L. Miranda-Moreno, "Analyzing Car Ownership in Quebec City: A Comparison of Traditional and Latent Class Ordered and Unordered Models," *Transportation*, Vol. Vol. 41, No. 5, 2014, pp. 1013-1039. DOI:10.1007/s11116-014-9522-9
7. Behzadan A.H., S. Dong, and V.R. Kamat, "Augmented Reality Visualization: A Review of Civil Infrastructure System Applications," *Advanced Engineering Informatics*, Vol. 29, No. 2, 205, pp. 252–267. DOI:10.1016/j.aei.2015.03.005
8. Behzadan A.H., C. Menassa, and A. Pradhan, "Enabling Real Time Simulation of Architecture, Engineering, Construction, and Facility Management (AEC/FM) Systems: A Review of Formalism, Data Representation, and Model Architecture," *Journal of Information Technology in Construction*, Vol. 20, 2015, pp. 1-23. DOI:http://www.itcon.org/2015/1
9. Born, K., S. Yasmin, D. You, N. Eluru, C.R. Bhat, and R.M. Pendyala, "A Joint Model of Weekend Discretionary Activity Participation and Episode Duration," *Transportation Research Record: Journal of the Transportation Research Record*, Vol. 2413, pp. 34-44. DOI:http://dx.doi.org/10.3141/2413-04
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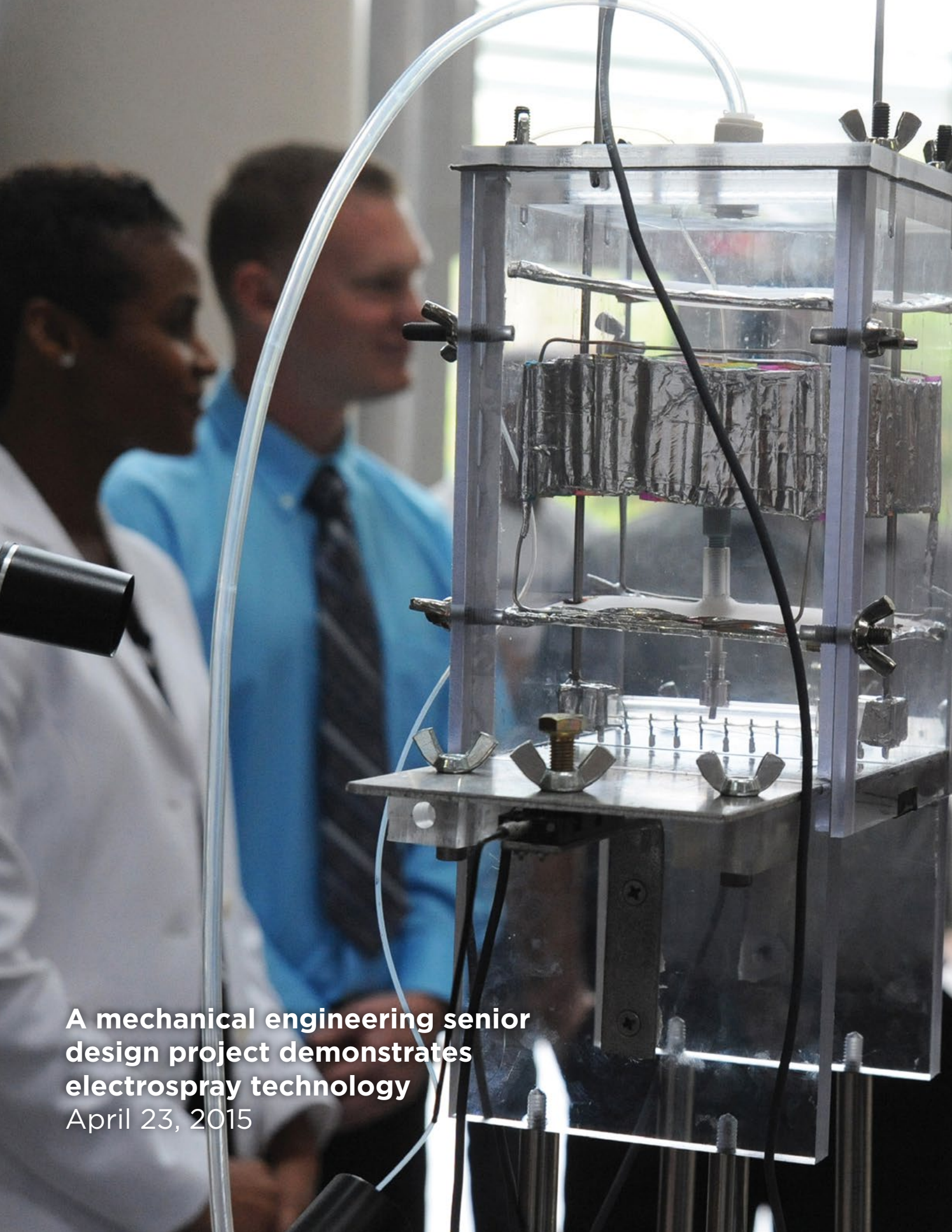

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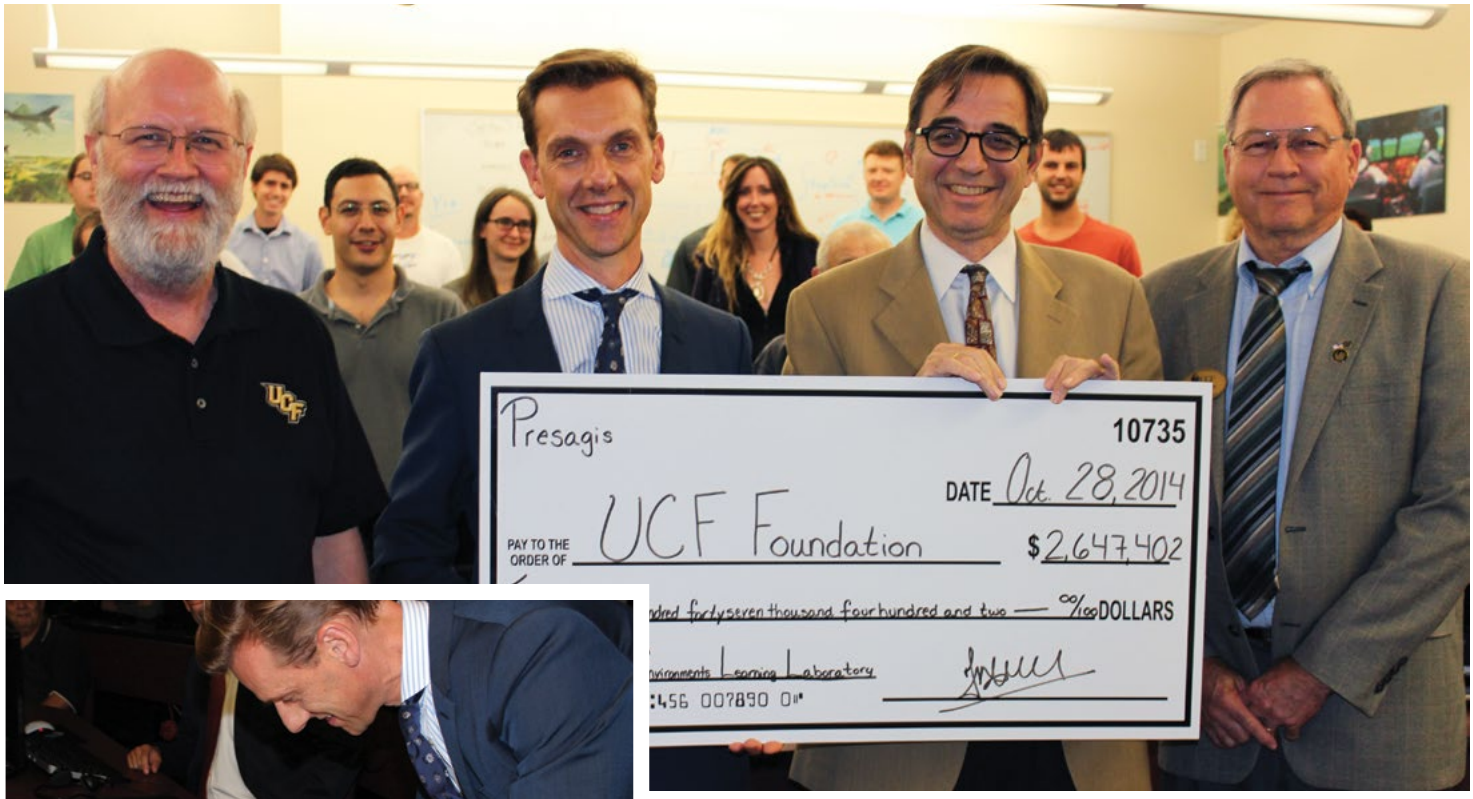

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2014 National Champions:
UCF Collegiate Cyber Defense Competition Team

- The CCDC team and Hack@UCF were awarded first place out of more than 300 colleges and universities in the USA with computer/cyber security programs and clubs in the 2014 Collegiate Cybersecurity Championship Cup. This competition is run by the Center for Infrastructure Assurance and Security at the University of Texas at San Antonio. (January 2015)
- The CCDC team won the Alamo Cup, which is the first place trophy for winning the 2015 Raytheon National Collegiate Cyber Defense Competition. The Alamo cup represents first place among 10 teams selected from regional competitions across the USA. 180 teams comprised of more than 2000 students entered the 3-tier elimination process. On the team 4 team members are IT majors, 3 CS majors, and one EE major. The faculty advisor is Thomas Nedorost. They competed against 10 regional winners to win the Raytheon cup. CCDC Team: Carlos Beltran, Alex Davis, Kevin Colley, Austin Brogle, Tyler Dever, Nathaniel Dennise, Connor Brooks, Kevin DiClemente, Andreas Giron, Jason Cooper, Jon Lundstrom, Shane Welch. (April 2015)
- Hack@UCF placed third, sixth, tenth and twelfth places out of 150 teams from across the United States in the Microsoft Build the Shield competition. (April 2015)

Faraz Hussain

- Best Paper Award, Fourth Annual IEEE International Conference on Computational Advances in Bio and Medical Sciences, Institute for Electrical and Electronics Engineers. (September 2014)

Ardalan Naseri

- American Society for Cell Biology Coverage of paper in Proceedings of the National Academy of Sciences, American Society for Cell Biology. (February 2015)

UCF Programming Team

- The UCF programming team took 21st place among 121 teams worldwide competing in the ACM International Collegiate Programming Contest (ICPC), who were selected from 12,720 teams in 2,534 universities and 101 countries. The UCF teams also placed 3rd among the 25 teams competing in the world finals from the US and Canada. The students on this team were students: Anthony Stabile, Travis Meade, and Daniel Wasserman. (June 2014)

Electrical and Computer Engineering

Ling Wang
- ITS Florida Scholarship (Fall 2014)

Victor Bassey
- NACME Scholarship (2014 – 2015)

Dominique Benito
- NACME Scholarship (2014 – 2015)
- Walt Disney World Scholarship (2014 – 2015)

Yu Bi
- David and Jane Donaldson Memorial Scholarship (2014 – 2015)

Irina Bouzina
- AT&T Wireless Scholarship (2014 – 2015)

Ivette Carreras
- Frank Hubbard Engineering Endowed Scholarship (2014 – 2015)

Gretha Arrage Chico
- NACME Scholarship (2014 – 2015)

James Choi
- Daniel D. Hammond Engineering Scholarship (Undergraduate) (2014 – 2015)

Nicholar Dikhoffz
- AT&T Wireless Scholarship (2014 – 2015)

Daniel Franco
- AT&T Wireless Scholarship (2014 – 2015)

Benjamin Goolsby
- Duke Energy (2014 – 2015)

Kelley Ice
- AT&T Wireless Scholarship (2014 – 2015)

Muhtasim Jayeed
- Walt Disney World (2014 – 2015)

Shawn Mahon
- Walt Disney World (2014 – 2015)

Carla Majluf
- FGLSAMP Scholarship (2014 – 2015)

Jorge Guerra Marin
- Daniel D. Hammond Engineering Scholarship (Undergraduate) (2014 – 2015)

Brian Millikan
- Daniel D. Hammond Engineering Scholarship (Graduate) (2014 – 2015)

Wesley Mullins
- Daniel D. Hammond Engineering Scholarship (Undergraduate) (2014 – 2015)

Ley Nezifort
- NACME Scholarship (2014 – 2015)

Ly Nguyen
- Gerald R. Langston Endowed Scholarship (2014 – 2015)

Joseph Nichols
- CECS Alumni Chapter Scholarship (2014 – 2015)

Jonathan Obah
- NACME Scholarship (2014 – 2015)

Nicholas Paperno
- Daniel D. Hammond Engineering Scholarship (Graduate) (2014 – 2015)

Ahkeim Pierre
- NACME Scholarship (2014 – 2015)

Laura Rubio-Perez
- Walt Disney World (2014 – 2015)

Robert Simon
- NACME Scholarship (2014 – 2015)

David Steury
- Duke Energy (2014 – 2015)

Darrel Thompson
- NACME Scholarship (2014 – 2015)

Cassandra Todd
- Boeing Scholarship (2014 – 2015)

Benjamin Truckenbrod
- Daniel D. Hammond Engineering Scholarship (Undergraduate) (2014 – 2015)

Fatemeh Yazdiananari
- AT&T Wireless Scholarship (2014 – 2015)

Nancy Zanaty
- Boeing Scholarship (2014 – 2015)

Industrial Engineering and Management Systems

Anastasia Angelopoulou

- Best Poster Award, IEEE International Multidisciplinary Conference on Cognitive Methods in Situation Awareness and Decision Support. (March 2015)

Seyed-Shahab Mofidi

- Lee Wood Scholarship, Material Handling Education Foundation. (March 2015)

Konstantinos Mykoniatis

- Best Poster Award, IEEE International Multidisciplinary Conference on Cognitive Methods in Situation Awareness and Decision Support. (March 2015)

Brandon Naids

- Business Model Competition - Talon Simulations, UCF Blackstone LaunchPad. (2014 – 2015)

Catherine Ninah

- Crane Manufacturers Association of America Honor Scholarship, Material Handling Education Foundation. (March 2015)

University of Central Florida Institute of Industrial Engineers, Student Chapter

- GOLD Chapter Award (2014 – 2015)

Materials Science and Engineering

Swetha Barkam

- 225th Electrochemical Society Meeting, second place in Electrochemistry Division. (2014 – 2015)
- UCF SGA Extreme Leadership Scholarship. (2014)
- $500 Austin L Grogan Memorial Scholarship Award. (2014)
- $150, 2nd Place poster award, Electrochemistry, 2014 ECS. (May 2014)
- AVS Florida Conference, Second Place, Orlando, FL. (2015)
- $1,500 Alumni Fellowship. (2015)
- SGA Graduate Student Research Scholarship for $500. (2015)
- Campus Involvement Scholarship $250. (2015)

Soumen Das

- Gordon Conf Young Scientist Travel and Registration Award, Andover, NH. (July 2014)

Michael Giraldo

- Florida AVS meeting, Second Place. (March 2014)

Ankur Gupta

- UCF Dean's Dissertation Completion Fellowship. (Spring 2015)
- Florida AVS meeting, Honorable mention. (March 2014)
- AVS Florida Conference, Honorable Mention, Orlando, FL. (2015)
- UCF Graduate student research scholarship $500. (2015)

Steven Hellar

- RAMP Fellowship. (2015)

Anh Ly

- Florida AVS meeting, Second Place. (March 2014)

Rameech McCormack

- 225th Electrochemical Society Meeting, second place in Electrochemistry Division. (2014 – 2015)
- 225th Electrochemical Society Meeting, first place in Solid State division (2014 – 2015)
- Florida AVS meeting, First Place. (March 2014)
- AVS Florida Conference, First Place, Orlando, FL. (2015)
- $1000 Whalen Family Trust Fund award. (2014)
- $300, 1st Place poster award, Solid State Div., ECS. (May 2014)
- Gordon Conference Graduate student Travel Award ($500), Andover, NH. (July 2014)
- 41st NSBE Conference, Third Place Paper, Anaheim, CA. (2015)

Abhishek Mehta

- David T. & Jane M. Donaldson Memorial Scholarship, College of Engineering and Computer Science, University of Central Florida. (2015)

Julian Ortiz

- Florida AVS meeting, Honorable mention. (March 2014)

Corey Rodas

- SURE UG Poster, Life Sciences, Honorable Mention, UCF. (2015)

Shashank Saraf

- Graduate Studies Research Excellence Fellowship, UCF. (2014)
- Graduate Research Excellence Fellowship. (2014-2015)
- 225th Electrochemical Society Meeting, second place in Electrochemistry Division. (2014 – 2015)
- AVS Florida Conference, Third Place, Orlando, FL. (2015)

Nozomi Shirato

- 225th Electrochemical Society Meeting, first place in Solid State division (2014 – 2015)

Umesh Singh

- 225th Electrochemical Society Meeting, first place in Solid State division (2014 – 2015)

Zenan Yu

- 225th Electrochemical Society Meeting, second place in Electrochemistry Division. (2014 – 2015
- UCF Dean's Dissertation Completion Fellowship. (Spring 2015)

Le Zhou

- Graduate Research Excellence Fellowship. (2014-2015)
- Second Place, Poster Presentation at 2015 Annual Joint Symposium & Exhibition of Florida Chapter of American Vacuum Society (FLAVS) and Florida Society for Microscopy. (March 2015)

Mechanical and Aerospace Engineering

The MAE organizations have been active in Camp Connect and STEM Day, which are outreach events to engage elementary, middle, and high school students. Participating in these June 2014 events are:

- American Institute of Aeronautics and Astronautics (AIAA)
- American Society of Mechanical Engineers (ASME)
- Society of Automotive Engineers (SAE)
- Students for the Exploration and Development of Space (SEDS)
- American Society of Heating, Refrigeration and Air-conditioning (ASHRAE)

Kevin Aranda

- Undergraduate Scholarship, $2,500. (April 2015)

Itza Beltran

- Undergraduate Scholarship, $2,500. (April 2015)

Felipe Betancor

- Undergraduate Scholarship, $2,500. (April 2015)

Mateo Gomez

- Undergraduate Scholarship, $3,000. (April 2015)

Alyssa Mahaffey

- Undergraduate Scholarship, $5,500. (April 2015)

Albert Manero

- UCF Order of Pegasus Award, the university's highest student honor. (May 2015)

Julian Moore

- Undergraduate Scholarship, $2,500. (April 2015)

Richard Murdock

- UCF Order of Pegasus Award, the university's highest student honor. (May 2015)

Zachary Oviatt

- Undergraduate Scholarship, $5,500. (April 2015)

Kathryn Pope

- Undergraduate Scholarship, $3,000. (April 2015)

Louis Shatkun

- Undergraduate Scholarship, $5,500. (April 2015)

Paul Wilson

- Undergraduate Scholarship, $3,000. (April 2015)

Order of Pegasus recipients
Taylor Laurent and Richard Murdock

UCF engineering student John Sparkman, a volunteer for UCF-based Limbitless Solutions, and the Blue Man Group surprised 12-year-old Wyatt Falardeau with a "Blue Man" styled 3D-printed bionic arm in April 2015.


OneNote

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