

UConn | SCHOOL OF ENGINEERING

ECE

ELECTRICAL & COMPUTER ENGINEERING



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WINTER 2019
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WINTER 2019

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SCHOOL OF ENGINEERING

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ON THE COVER: The Innovation Partnership Building (IPB) at the UConn Tech Park is UConn's hub for industry/university engagement. The IPB offers the state-of-the-art facilities and equipment needed to conduct transformative research and support cross disciplinary partnerships. Read more about the IPB on page 12. Photo © Magda Biernat, 2017

INSET COVER PHOTO: The new five-story Engineering and Science Building comprises 118,000 square feet of laboratories, research space, meeting and gathering spaces, offices, and other amenities meant to foster cross-campus and interdisciplinary collaborations among the Storrs, UConn Health, and regional campuses.

The building features three floors supporting engineering research initiatives in robotics, advanced manufacturing, cyber physical systems, virtual and augmented reality, mechatronics, and other areas. The other two floors house the Institute for Systems Genomics, which conducts world-class research and training in genomics and personalized medicine.

This newsletter is published for the alumni, faculty, students, corporate sponsors, and friends of the Department of Electrical & Computer Engineering at the University of Connecticut. Comments are always welcome.

Please send correspondence and address corrections to the address below or email john.chandy@uconn.edu.

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The creative efforts of the School of Engineering staff members Eli Freund, Chris LaRosa, Mary McCarthy and Ryley McGinnis are gratefully acknowledged.

MESSAGE FROM THE DEPARTMENT HEAD



I am pleased to share with you the Winter 2019 edition of our Newsletter. The data below summarizes the ECE Department activities during the past year. The following pages highlight some recent student, alumni, and faculty success stories. If you would like more information about any item in the newsletter or about our research and educational programs, please send me a note at john.chandy@uconn.edu. Also, check our website (www.ee.uconn.edu) for the latest news about the department.

John Chandy, *Professor and Head*

2017-2018 SUMMARY

240+

PEER-REVIEWED
PUBLICATIONS

\$6.6M

IN RESEARCH
EXPENDITURES

12K+

CITATIONS

27

TENURED/TENURE
TRACK FACULTY

2

RESEARCH
PROFESSORS

360

UNDERGRADUATE
STUDENTS

80

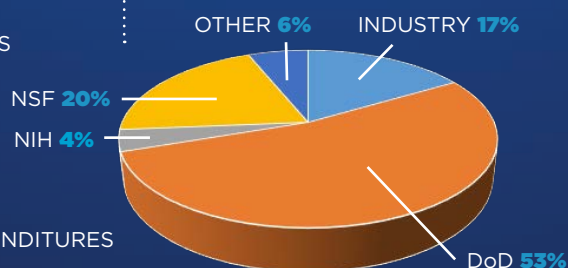
BSE DEGREES
GRANTED

110

GRADUATE
STUDENTS

25

Ph.D. DEGREES
GRANTED



Academy

OF DISTINGUISHED ENGINEERS



ALUMNI RECEIVE UCONN AWARDS

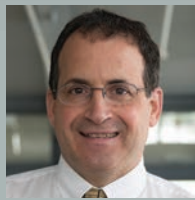
Three alumni were inducted into the **UCONN ACADEMY OF DISTINGUISHED ENGINEERS** in 2018. The awards recognize alumni and friends of the School of Engineering for their exemplary contributions to the engineering profession through research, education, or professional service.

ADINA C. CHERRY (*M.S. Electrical Engineering '95*), is a Founding Partner and President of The Hypatia Group, a holding company of business interests and IP in advanced information and biotechnologies,



including the Hypatia Project, a joint venture partner to the Department of Commerce for the development of government-wide data innovation and cloud computing technologies.

EYTAN H. MODIANO (*B.S. Electrical Engineering '86*), is a Professor and Associate Department Head of the Aeronautics and Astronautics Department and Associate Director of the Laboratory for Information and



Decision systems at MIT. He is a Fellow of the IEEE and an Associate Fellow of the AIAA, and served on the IEEE Fellows committee.



RICHARD R. GRZYBOWSKI (*Ph.D. Electrical Engineering '92*), is the Director of Research & Development at MACOM Lightwave where he leads the silicon photonics design team. He has authored and been awarded multiple DoD, DARPA and DoE contracts where he has served as program manager and chief system engineer. He has 24 patent, over 90 publications and is a co-author of the book *High Temperature Electronics* (CRC Press).

Left to Right: Craig H. Kennedy, Provost and Executive Vice President for Academic Affairs, Richard R. Grzybowski, and Kazem Kazerounian, Dean of the School of Engineering.

SENIOR DESIGN 2018

Senior Design Day was held April 27, 2018 at Gampel Pavilion. The ECE seniors worked in teams to solve challenging design problems posed by our industrial partners and faculty advisors. Twenty-eight teams demonstrated their project to a team of faculty who selected the best ECE projects of the year. The **"DESIGN OF A CLOUD-BASED BATTERY MANAGEMENT SYSTEM"** team received the first place award. The same team (*pictured below*) won the Task 4 Award at the annual WERC Environmental Design Contest held April 10, 2018 in Las Cruces, NM. The **"AUTONOMOUS WEIGHT DETECTION SYSTEM"** team took second place. Third place was awarded to the **"GLUCOSE MONITORING SMARTWATCH"** team.



Left to Right: Laurne Williams, Donald O'Boyle, William Brown



Left to Right: Daniel Fernandes, Amy Robinson, Marilyn Duong



Left to Right: Alexander Valdes, Richard Mullen, Keelin Becker-Wheeler

ALUMNI NEWS

SAEED KHAN (*Ph.D. Electrical Engineering, '94*) Saeed Khan, Professor and coordinator of the electronic and computer



engineering technology and unmanned aircraft systems design and integration degree options at Kansas State Polytechnic, has been granted a patent for a helical

antenna wireless power transfer system by the U.S. Patent and Trademark Office.

THOMAS GAAL (*B.S. Electrical Engineering, '89*) been named a director of Digital Transformation, Operations, at Radio Frequency Systems (RFS) in Munich, Germany. Prior to joining RFS he served in Supply Chain Innovation, Global Operations in the Venture Group at Nokia. A member of the APICS Research,



in Supply Chain Innovation, Global Operations in the Venture Group at Nokia. A member of the APICS Research,

Innovation, and Strategy Committee (RISC), he chairs the RISC Sensing Subcommittee. Gaal earned an executive education from IMD Business School in Switzerland and has worked in the U.S., Germany, and the Netherlands.

DIPAYAN GHOSH (*B.S. Electrical Engineering, '10*) was appointed as a fellow at the Shorenstein Center on Media, Politics and Public Policy, based at Harvard Kennedy School for Spring 2018.



ROY MADDOCKS, JR. (*B.S. Electrical Engineering, '89*) has retired as Fleet Master Chief following a distinguished 36-year career in the U.S. Navy that began in the post-Vietnam era. As a SEAL, Maddocks was involved in operational missions stretching from Afghanistan and Iraq to Bosnia and Kosovo. His awards consist of the



Bronze Star Medal, Meritorious Service Medal (two awards), Joint Commendation Medal, Navy Commendation Medal (two awards), Army Commendation Medal, Navy Achievement Medal (two awards), and numerous Campaign medals. Maddocks earned an M.A. in national Security and Strategic Studies at the U.S. Naval War College.

JANE WANG (*Ph.D. Electrical Engineering, '02*) is a professor at The University of British Columbia. She was recently elected Fellow of the Canadian Academy of Engineering. Dr. Wang is an IEEE Fellow as well as the chair and founder of the IEEE Vancouver SP chapter.



UNDERGRADUATE STUDENT AWARDS

For the second year in a row, The UConn Chapter of HKN (Eta Kappa Nu: the electrical engineering honor society) was honored with the 2016-2017 IEEE-HKN Outstanding Chapter Award. This national award is presented to IEEE-HKN chapters in recognition of documented excellence in their chapter administration and programming. The UConn Chapter was one of 21 chapters selected for their outstanding performance and the value they bring to their members, peers, and the university.

The Award was presented at a reception held in conjunction with the annual meeting of the Electrical and Computer Engineering Department Heads Association (ECEDHA) in March 2018.

The 27th Annual Connecticut Microelectronics Consortium (CMOC) was held April 4, 2018 at the University of New Haven. Professor Faquir Jain served on the conference steering committee and UConn undergraduate students received best paper awards.

NATHAN WHITE, DANIEL TROMBETTA WITH PROF. ASHWIN DANI co-authored "*Shape Estimation of Flexible Object/Electronics using Camera Sensor for Robotic Manipulation.*"

JIM LIN, NOAH LYKE, JAMES QUINTANILLA with graduate students Raja Hari Gudlavalleti and Barath Parthasarathy and Prof. Faquir Jain co-authored "*Quantum dot gate FET's exhibiting three-state characteristics.*"



Rajeev Bansal (left) accepting the award on behalf of the UConn chapter.

PREDICTING THE FUTURE OF Robotics

Written by Ryley McGinnis

Research in robotics crosses many engineering disciplines, including electrical engineering. Because of this, some University of Connecticut electrical engineering professors are using their unique perspectives to advance robotics research.

Assistant Professor **ABHISHEK DUTTA** is just one of these professors who specializes in robotics, with an emphasis in biological robotics.

“My hope is to create a bionic robot, as in a biologically constructed robot,” Dutta said.

Dutta works to create cyborgs, which are micro-circuits interfaced with organisms resulting in a controlled organism, which means he also faces challenges with biology.

Recently, Dutta released research related to control of cockroaches through the creation of a newly designed microcircuit. Connecting this small electronic “backpack” to the back of the cockroach, Dutta and his graduate students believe that there are unlimited applications, including use in search-and-rescue missions and national defense.

“My biggest challenge is to run this interdisciplinary lab that relies on as much engineering as much as biology,” he said.

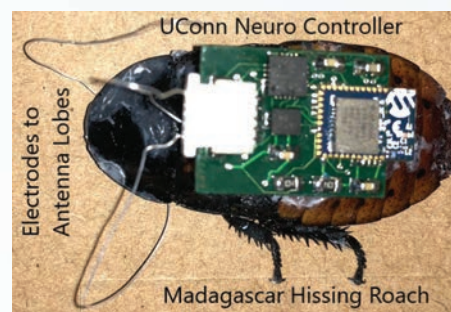
Dutta said he hopes that over the next few years robotics research will advance to create more social robots, and ultimately reach human-like cognition.

If robots are going to reach human-level cognition, artificial intelligence and autonomy would also have to advance, and that is where Associate Professor **SHALABH GUPTA** comes into play. Gupta researches how to improve robots autonomy, which has many different aspects, he said.

“The biggest challenge for autonomy is when the robot is in an unknown environment and the robot doesn’t know its surroundings. When you leave a robot in an unknown scenario it has to first learn the scenario and then completely make its own decisions for navigating and performing its tasks. The challenge is to design algorithms that can optimize this decision making process in the robots,” Gupta said.

When it comes to the artificial intelligence of these robots, Gupta said that some of these robots are already smarter than humans. However, integration of the learning process with that of control and decision is still a challenge.

Once you place the robot in an environment with other humans and moving



obstacles, the decision-making process becomes more challenging.

“It has to learn human patterns,” Gupta said, “We are trying to reach how humans think, but we don’t know how to replicate that. The data is big, but we have to figure out how to make sense of that data.”

To learn human patterns, these robots need to be collaborative and safe. Professor **ASHWIN DANI** specializes in this area, and he said he sees big advancements in the collaboration area in the near future.

“Human-robot collaboration, design and development of collaborative and safe robots, building intelligent machines using advances in machine learning and artificial intelligence, are some of the things that are happening in the robotics and automation community,” said Dani.

For challenges in these advancements, Dani cited infrastructure as the main obstacle for robotics advancement.

“For any robotics research, infrastructure is most critical. It takes time to build the right infrastructure and support system to carry out long-term research,” said Dani.

“For any robotics research, infrastructure is most critical. It takes time to build the right infrastructure and support system to carry out long-term research.”

Professor **BAHRAM JAVIDI** is the recipient of the 2018 Joseph Fraunhofer Award/Robert M. Burley Prize for his seminal contributions to passive and active multi-dimensional imaging from nano-to micro- and macro-scales.



The award, given to one person in the country every year, recognizes significant research accomplishments in the field of optical

engineering. He joins an esteemed group of past recipients recognized for their outstanding contributions to the field.

Dr. Javidi was also named a 2018 National Academy of Inventors Fellow. Javidi, Board of Trustees Distinguished Professor in Electrical and Computer Engineering, is one of the University's most active researchers, and his work seeks to integrate optics, photonics, and computational algorithms and systems to advance the science and engineering of imaging from nano to macro scales. Javidi joins three other NAI Fellows from UConn, Cato Laurencin, Lakshmi S. Nair, and Steve Suib.

Additionally, Professor Javidi's paper published in *Advances in Optics and Photonics*, "Fundamentals of 3D imaging and displays: a tutorial on integral imaging,

light-field, and plenoptic systems", has been a top download of the journal since it was published earlier this year.



Professor **PENG ZHANG** was selected as a recipient of the 2018 IEEE Region 1 Technological Innovation Award.

It was awarded for his strong leadership and outstanding contributions in the areas of microgrids, smart communities and cities, cyber-physical security and smart ocean systems.

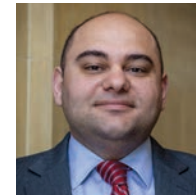
The Connecticut Power and Energy Society also presented Professor Zhang with the Excellence in Energy Award-Energy Technology Advancements/Research and Academics for his outstanding contributions to energy research and academics.

Additionally, he was appointed a TUM (Technical University of Munich) August-Wilhelm Scheer Visiting Professorship for 2018. This honor is awarded to scientists with an outstanding international reputation who wish to engage in an intensive collaboration with TUM researchers.

Lastly, Professor Zhang was appointed a School of Engineering Centennial Term Professorship. This award is aimed at recognizing outstanding faculty members

who have left a lasting impact on the school through leadership and innovation in research, teaching, mentorship and engagement and institution building.

Professor **ALI BAZZI** has received the highly selective National Science Foundation Early Career Development (CAREER) Award for his project



Hierarchical Control of High-Performance Motor Drives." Bazzi's research will be focused on multi-electrical motor drives.

Multiple drives or multi-drives open a new dimension of research into optimizing their combined performance metrics through energy savings, cost savings, increased reliability, and enhanced performance. This project will establish foundations for control, fault diagnosis, fault mitigation, and coordination between multi-drives. It will mainly utilize supervisory and switching control concepts at the local and global drive levels. Through this research, a hierarchy of controls will be established.

More Faculty News on page 11

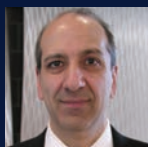
BOARD OF TRUSTEE DISTINGUISHED PROFESSORS

Professor **PETER LUH** has been selected as a Board of Trustee Distinguished Professor, which is the most prestigious faculty award. The award was presented at a reception held December 4, 2018. He is the fourth (after **YAAKOV BAR-SHALOM, BAHRAM JAVIDI AND KRISHNA PATTIPATI**) ECE faculty member to achieve this distinction.

Professor Luh was also Panel of Editors (POE) chair of the Periodicals Committee (PerCom) which held its meeting in Los Angeles in April of 2018



Yaakov Bar-Shalom



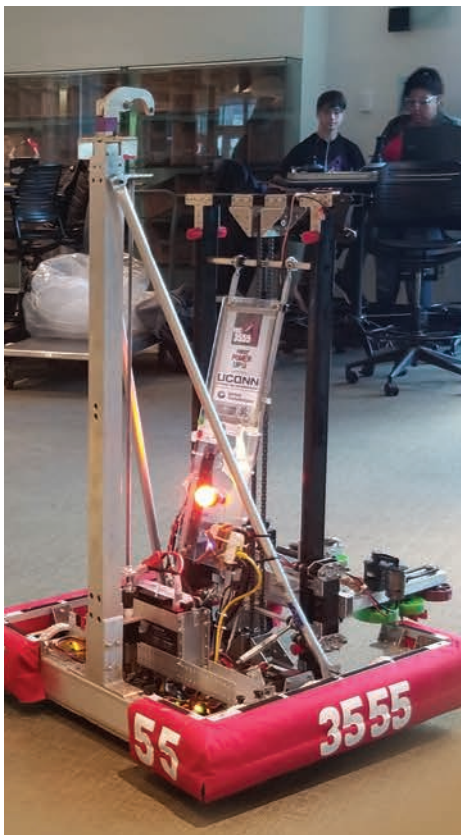
Bahram Javidi



Krishna Pattipati



Peter Luh



ROBOTICS COMPETITION

The **E.O SMITH HIGH SCHOOL FIRST ROBOTICS TEAM 3555** gave a demonstration of their robot that won the prestigious Judge's Award at the Southern New England District event held in 2018. The team, mentored by the UConn FIRST Alumni Association, is also advised by Professor **ASHWIN DANI**.



Senior Associate Dean Michael Accorsi meets with the E.O. Smith FIRST Robotics team to discuss their robot.

UNDERGRADUATE STUDENT PROFILES

DAVIS MEISSNER

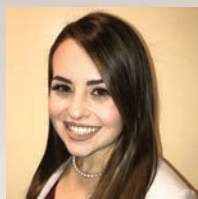
If you've ever been on the fourth floor of ITE, Davis Meissner might look familiar. His favorite place to study is the table outside room 401 where he regularly sees his professors and fellow classmates. He will be graduating in May 2019 with a degree in electrical engineering. In January, he will be starting part-time at Veeder-Root in Simsbury as an Electronics Design Engineer, incorporating IoT technologies into Veeder-Root's existing product line of fuel tank monitoring systems. He will move to full-time upon graduation. The past two years he gained experience as a Co-op at TTM Technologies in Stafford Springs producing circuit boards for companies such as Lockheed Martin, UTC Aerospace, and Google's Waymo.



Davis Meissner is a non-traditional student who moved to Connecticut from California where he was an audio engineer at Eastwest Studios in Hollywood. After recording and working with artists such as Ariana Grande, Justin Timberlake, and Michael Bublé, Davis decided he was more interested in the technological aspects of recording. He knew getting a degree in electrical engineering would expand his career opportunities beyond the studio. In the winter of 2013 heading home to Wisconsin, Davis met a girl on his flight from the same hometown. She was living in Hartford at the time. They began talking and haven't stopped which prompted Davis' transfer from Los Angeles City College to the University of Connecticut where he plans to complete his master's degree in engineering.



KERRY JONES



Kerry Jones is a senior studying electrical engineering, specifically interested in control systems. She recently accepted a position at Sikorsky, a division of Lockheed Martin. After she graduates, Kerry will be working in their autonomy lab, specifically on autonomous flight systems for helicopters.

Kerry's senior design project, sponsored by Sikorsky, consists of designing a control system for a drone to autonomously detect and extinguish a fire while also implementing object avoidance in forward flight. The goal of this project is to develop an effective design that can be applied

to a full-sized helicopter to extinguish forest fires.

Before her junior year, Kerry interned with Princeton Plasma Physics Lab. With PPPL, she collaborated on a portable tritium clean-up system. Her role in the design was to develop a control system for the machine to operate effectively and safely.

Kerry has been a cheerleader for UConn in each of her four years, holding leadership roles on the team for her junior and senior years. She currently works on campus as a tutor for the Student Athlete Success Program and a teaching assistant for ECE 2001. She is also a member of HKN - the International Honor Society for Computer and Electrical Engineers.

GRADUATE STUDENT NEWS & AWARDS

Connecticut Power and Energy Society honored **YAN LI** with the 2018 Rising Star award at its 19th annual conference and

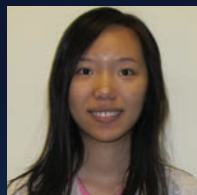


exposition in October of 2018. Yan has demonstrated strong creativity in important areas including smart grids, cybersecurity, software-defined networking, mi-

crogrids, and networked microgrids. She has made outstanding contributions in smart grid and cyber-physical security. In her final year of the Ph.D. program, Yan has contributed to 28 peer-reviewed publications and has secured over \$3.4 million in federal funding to conduct research in power and energy resilience and cybersecurity.

Yan was also selected as a 2018 CT Women of Innovation Finalist.

LINGYI ZHANG, a Ph.D. student, is the first recipient of the Vijaya G. Raghavan Fellowship. Dr. Raghavan received his Ph.D. in Electrical Engineering from UConn in 1996 and he is now the Director of Engineering at Mathworks. Dr. Raghavan has



generously provided funding for an annual fellowship for female graduate students in the department.



TAOFEEK OREKAN, a recent Ph.D. graduate won the 2018 Connecticut Chapter IEEE Outstanding Engineer Award.



HAMZA OMAR received the Fall 2017 Teaching Assistant Award.



ARSHIAH MIRZA received the Spring 2018 Teaching Assistant Award.

Below: The Connecticut Technology Council announced that **QIN LU** received the 2018 CT Women of Innovation Award in the Collegian Innovation and Leadership Category.

Graduate students were inducted into the **JOHN LOF LEADERSHIP ACADEMY**, a new exclusive society for UConn Engineering graduate students, May 22, 2018. Backed by the generous endowment from John Lof, a former UConn electrical and computer engineering professor of 35 years,



this exclusive Academy will aim to continue the legacy of Dr. Lof, who wished to reward and cultivate a select group of future leaders and engineering trailblazers. The proceeds of the endowment will be used towards the direct support of the student members (in the form of grants and fellowships), as well as the corresponding Academy programs. The first group of electrical engineering graduate Lof inductees are **WENJIE (JACK) HUANG, BILAL KHAN, YAN LI, ROMAN MAYS, AND DONALD MCMENEMY**. The first executive board for the Academy includes **ARSHIAH YUSUF MIRZA** as Secretary.



SENIOR DESIGN

Building the “Heart and Soul” of an Electric Car



Twenty years ago, if you stood on a sidewalk and watched cars go by, chances are high that you would see little-to-no electric cars driving down the street. In 2017, electric car sales were higher than ever, with nearly 200,000 all-electric cars sold in the U.S. With the popularity of models from Tesla, BMW, and Chevy, consumers are starting to warm to the idea of charging their car, rather than filling it with gasoline. Because of that popularity, an electrical and computer engineering senior design team featuring seniors Daryl Biron; Ernesto Ortega-

Hernandez; and Alain Tshipamba, worked to complete an all-electric car for the national competition.

The portion of the car that Biron, Ortega-Hernandez, and Tshipamba are working on is the “heart and soul” of the vehicle—the powertrain. The sponsor of the project, the UConn Electric Motorsports (UCEM), was originally formed in the spring of 2017, with the intention of getting like-minded students together to build a car that could compete in Formula North, a collegiate competition taking place during in the summer of 2018. The advisor of the team is Professor Ali Bazzi.

Biron said he originally got involved after having interest in the club in the spring 2017 semester:

“I got involved with the club personally, in the spring semester last year, and at that time there were only two electrical engineers involved, and with an electric car, you need a lot more than just two,” Biron said. “So, I was pretty much thrown onto the powertrain team, which is essentially everything that the motor controls, and I didn’t really know much, so I had to do a lot of research on my own, which became easier when Ernesto and Alain came onboard.”

The car itself will have a chassis made of inch-thick aluminum honeycomb sheets, which will make it one of the lightest and most torsionally rigid chassis seen in completion, according to the UCEM website.

The car will also use pieces and materials that will make the car extremely flexible and ergonomic,

with components like adjustable pedals and a removable seat.

The permanent magnet motor, which the group only received recently, after a wait of a few months, was designed by EMRAX, and provides 80 kilowatts of power, equivalent to 107 horsepower. Ortega-Hernandez said they had to jump through a lot of hoops before the motor arrived at its destination:

“Initially we had some funding problems, which were later solved, but when we went to order the motor, we ran into issues, because it was coming from Europe, EMRAX required a wire transfer for payment, and they weren’t an approved UConn vendor. So, luckily, EnviroPower, the company where Daryl interns, offered to become a vendor, and then ordered the motor through their channels—but when all was said and done, the entire purchasing process took three months.”

The rest of the powertrain consists of an emDrive300H Controller from Emsiso, and several other components, which will connect to a battery apparatus being constructed by another ECE team.

Tshipamba also said that getting all the calculations fined-tuned was one of their biggest early challenges:

“**Luckily, when we went to our advisor, he really helped us find out what we were doing wrong. Originally, we had issues with the simulation models, which were due to using parts from different libraries that didn’t communicate well, and were also not adjusted to our parameters regardless of tuning, so we realized that we had to create our own parts based on the mathematical model.**”

But Biron said that a lot of these impediments eventually turned into worthwhile accomplishments:

“Actually, getting the motor and fixing our mathematical models was a huge breakthrough for us,” Biron said. “At one point, we were talking about ordering the motor the beginning of November, but obviously things got in the way.”

The group was able to complete the modeling and develop the controller to control the motor, and it is mostly ready to go into the chassis being designed by a mechanical engineering team. The plan is to be ready for the national competition in June 2019.

Left: The EMRAX motor provides 80 kilowatts of power, equivalent to 107 horsepower.

Above: Ortega-Hernandez, Tshipamba, and Biron look over their EMRAX motor in the Castleman Building Machine Shop.



ON CAMPUS

NEW HIRE



PHILIP DUNCAN

recently joined the departmental staff to support our teaching laboratories and the IT infrastructure. He received his B.S.

in Computer Engineering Technology from University of Hartford and is currently pursuing his M.S. in Technology Management at Central Connecticut State University.

INSTRUCTIONAL LAB RENOVATIONS

Over the past year, the instructional labs in ITE C19, C30, and C43 were renovated. The new space provides more functional lab benches with new equipment for senior design students and a number of laboratory classes.



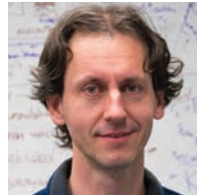
LOCKHEED MARTIN DAY AT UCONN

Leaders from the University of Connecticut and Lockheed Martin celebrated their longstanding partnership connecting students in the STEM (science, technology, engineering, and mathematics) fields to careers and internships with a technology demonstration day.



FACULTY NEWS

Professor **MARTEN VAN DIJK** had a recent publication in the *Journal of the ACM*, "*Path ORAM: An Extremely Simple Oblivious RAM Protocol*." The Journal's website states "to be accepted, a paper must be judged to be truly outstanding in its field. The paper was also selected as one of the 2018 Top Picks in Hardware and Embedded Security."



Professor **SHENGLI ZHOU** received the 2017-2018 ECE Faculty Award for outstanding teaching achievements. He was also appointed the Associate Head of the Department effective August 2018.



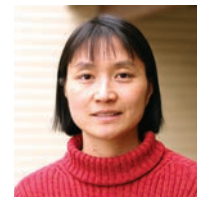
The UConn chapter of the AAUP has selected Professor **ASHWIN DANI** for a 2018 AAUP Excellence Award in the category of Teaching Innovation.



Professor **YANG CAO** received the 2017-2018 ECE Outstanding Research Achievement Award.



A paper written by Professor **KRISHNA PATTIPATI**, CSE Professor **BING WANG**, students and colleagues, was awarded the prestigious Best Paper Award at CoNEXT'18, a top conference in networking:



"ABR Streaming of VBR-encoded Videos: Characterization, Challenges, and Solutions."



Professor **RAJEEV BANSAL** with former Dept. Head **ROBERT MAGNUSSON** in Iceland.

FROM HUSKY TO CTO

Dr. LOU PARRILLO

(B.S. Electrical Engineering '64)

returned to campus to deliver a lecture to the School of Engineering students on his experiences and lessons learned over a 40-year career in semiconductor technology and business.



IN MEMORIAM



Professor Emeritus **JOHN D. ENDERLE**, 65, passed away on April 2, 2018 after a long and courageous battle with pancreatic cancer. A loving husband, father, brother, friend, colleague and mentor, Dr. Enderle enjoyed a long and illustrious career as a professor and inspirational leader, admired for his unfailing dedication and support for students, a legacy honored by his family establishing the John Enderle Fund memorial scholarship.

UConn Electrical and Computer Engineering department head from 1995-1997, John was founding director of the undergraduate Biomedical Engineering program in 1997. His passion for research and advising his students are storied with commendations describing him as “the greatest professor,” having a “major influence in my life over the past 20 years,” and “always had patience to help me pursue my goals.”

John earned his B.S., M.E., and Ph.D. degrees in Biomedical Engineering, and an

M.E. degree in Electrical Engineering from Rensselaer Polytechnic Institute. He worked at the National Science Foundation (NSF) and was as a professor at North Dakota State University (NDSU) prior to joining UConn.

In addition to his teaching and research, John also served in many capacities for several professional societies, was a member of the Connecticut Academy of Science and Engineering, a former Accreditation Board for Engineering and Technology (ABET) Program Evaluator for Bioengineering Programs and member of the Engineering Accreditation Commission. He was Editor of the NSF Book Series on NSF Engineering Senior Design Projects to Aid Persons with Disabilities. At the time of his death, John was working on a fourth edition of his seminal undergraduate textbook for biomedical engineering, *Introduction to Biomedical Engineering*.

INNOVATION PARTNERSHIP BUILDING

The new Innovation Partnership Building (IPB) at UConn Tech Park was opened on September 20, 2018. The IPB will provide a place where researchers from industry and academia can work side-by-side in applying their specialized expertise. It fosters partnerships with local startups as well as large global corporations and helps identify the ideal model for their business needs. Three of the core centers in the IPB have close ties to ECE Faculty.

Prof. **PENG ZHANG'S** research in power grids is one of the key fields of research at

the Eversource Energy Center and relies on it to help build a safe power grid.

The UTC Institute for Advanced Systems Engineering was formed to tackle problems inherent in designing and building large complex systems such as airplanes, automobiles, and building systems. The effort brings in a number of ECE faculty (Profs. **ALI BAZZI, ASHWIN DANI, ABHISHEK DUTTA, SHALABH GUPTA, OMER KHAN, PETER LUH, KRISHNA PATTIPATI, LIANG ZHANG, SHENGLI ZHOU**) with expertise in controls, electro-

mechanics, optimization, embedded systems, and machine learning.

Department Head, Prof. **JOHN CHANDY**, is Co-Director of the Connecticut Cybersecurity Center (C3), which addresses a number of cybersecurity research issues that are of national interest. In particular, UConn is a national leader in computer hardware security research. Other participating ECE faculty include Profs. **MARTEN VAN DIJK, OMER KHAN, AND LEI WANG.**



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**Congratulations
to All of Our
Graduates!**



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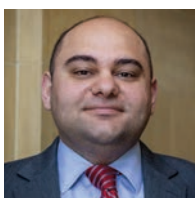
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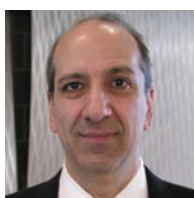
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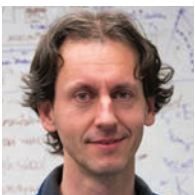
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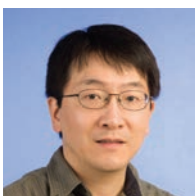
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