

UConn | SCHOOL OF ENGINEERING

# ECE

ELECTRICAL & COMPUTER ENGINEERING

FALL 2020  
[WWW.EE.UCONN.EDU](http://WWW.EE.UCONN.EDU)

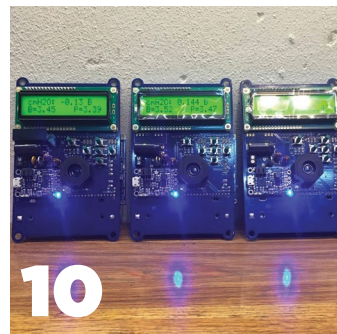
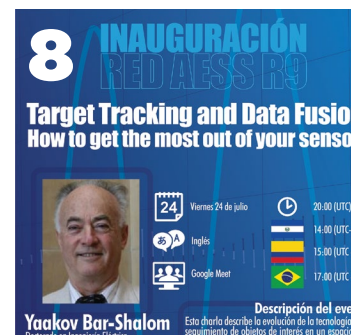
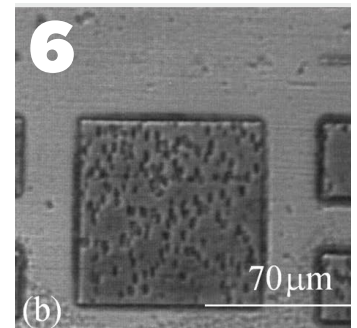
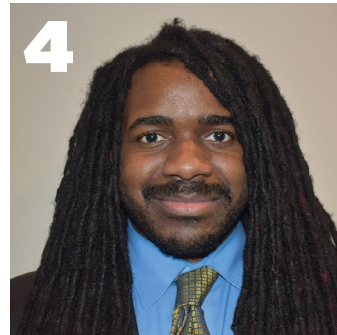


FALL 2020

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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](mailto:john.chandy@uconn.edu).

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

**ON THE COVER:** A scenic view of Dove Tower, the Student Recreation Center, and the UConn Bookstore.

# MESSAGE FROM THE DEPARTMENT HEAD



I am pleased to share with you the Fall 2020 edition of our newsletter. This year has been a challenging year for all of us as we have had to adapt to learning, teaching, and working remotely—especially in the spring semester when our frame of reference was overturned in the matter of a week. As we have dealt with these challenges, I have been impressed by the resilience of the ECE community. Our faculty have learned new teaching modalities as they switched to online and distance learning methodologies. Our students have been patient and adaptable while endeavoring to learn in less than ideal circumstances. Our staff has continued to be ever supportive in ensuring that the department runs as efficiently as ever. And finally, our researchers have continued to produce ground-breaking innovations in spite of the trying situation.

The data below summarizes some of the ECE Department activities during the past year. However, numbers never tell the full picture of a department, and the following pages should 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](mailto:John.chandy@uconn.edu). Also, check our website ([www.ee.uconn.edu](http://www.ee.uconn.edu)) for the latest news about the department.

**John Chandy**, *Professor and Head*

## 2019-2020 SUMMARY

**310+** PEER-REVIEWED PUBLICATIONS

**\$6.8M** IN RESEARCH EXPENDITURES

**16K+** CITATIONS

**26** TENURED/TENURE TRACK FACULTY

**2** RESEARCH PROFESSORS

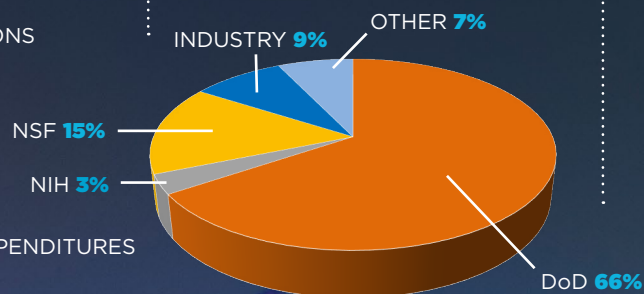
**355** UNDERGRADUATE STUDENTS

**71** BSE DEGREES GRANTED

**122** GRADUATE STUDENTS

**14** Ph.D. DEGREES GRANTED

2019-2020 RESEARCH EXPENDITURES



# UConn



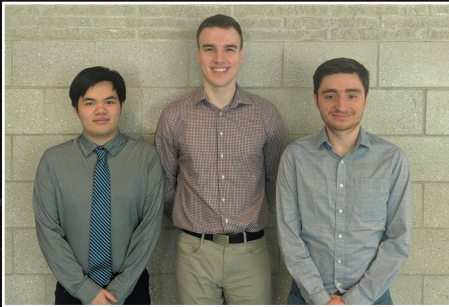
# SENIOR DESIGN 2020

The School of Engineering 2020 Senior Design Day was like no other. Forced to work remotely due to COVID-19, 31 ECE teams completed their projects and put together virtual presentations, including videos.

While all the teams performed exceptionally, three teams were recognized as being the best this year:

**1<sup>ST</sup>**

**TEAM 2013 (CARRIER)  
VERIFICATION STRATEGY  
AND TOOLS FOR IOT SYSTEMS**  
(Advisor: Prof. Shalabh Gupta)



Left to right: Long Phan, Balsha Maric, and Wissam Razouki

**2<sup>ND</sup>**

**TEAM 2032 (SIKORSKY)  
AUTONOMOUS  
FIREFIGHTING HELICOPTER**  
(Advisor: Prof. Ashwin Dani)



Left to right: Joseph Morello, Shivendra Singh, Francisco Rivera, and Yinuo Huang

**3<sup>RD</sup>**

**TEAM 2019 (HARTFORD HSB)  
WIRELESS MOTOR SENSOR**  
(joint with ME. Advisor:  
Prof. John Chandy)



Left to right: Rasal Talukdar, Daniel Leclerc, and Benjamin Hart



## GRADUATE STUDENT NEWS & AWARDS

**MD TASHFIQ KASHEM** and **RYAN SALTUS** received the Fall 2019 Teaching Assistant Award.



*Md Tashfiq Kasheem*



*Ryan Saltus*



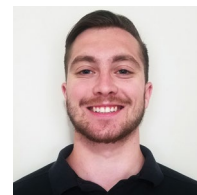
**ROMAN MAYS** (left), Ph.D. student advised by Prof. **FAQUIR JAIN** received the GEM fellowship for academic year 2020/2021.

**PETER DOUGLAS** was awarded a GAANN (Graduate Assistantships in Areas of National Need) fellowship with funding from the US Department of Education.

**RAJA HARI GUDLAVALETTI** received the Bronze Prize of the "DTS Student Research Award" at the 20<sup>th</sup> Annual Diabetes Technology Meeting for his poster "*Highly Miniaturized, Low Power CMOS ASIC for Long-Term, Needle-Implantable CGMs*" co-authored with **ALLEN LEGASSEY**,

**PIK-YIU CHAN, JOON-SUNG KIM AND PROFS. DIANE J. BURGESS, FOTIOS PAPADIMITRAKOPOULOS, AND FAQUIR JAIN.**

Graduate students **DANIEL TROMBETTA** (below), **GHANANEEL ROTITHOR**, and **IMAN SALEHI** and their advisor Prof. **ASHWIN DANI** were selected as a finalist for the International Federation of Automatic Control (IFAC) World Congress 2020 Application Paper Prize for their paper "*Human Intention Estimation using Fusion of Pupil and Hand Motion.*" The IFAC meets every three years and is the largest and most important meeting of its kind.





# ALUMNI NEWS



**KUO-WEI LIU**  
(Ph.D. Electrical Engineering '94) was named University President of Minghsin University of Science and Technology

(MUST), Hsinchu, Taiwan. MUST is a four-year comprehensive university with 13,000 students which offers bachelor's and master's degrees in the areas of engineering, management/business, service industry and social welfare.



**DIPAYAN GHOSH**  
(B.S. Electrical Engineering '10), a senior fellow at the Shorenstein Center at Harvard University, published a new book,

*Terms of Disservice: How Silicon Valley is Destructive by Design.*



**ROBERT ECKEL**  
(B.S. Electrical Engineering '80) was named President and CEO of Aware, Inc. headquartered in Bedford, MA. Aware

is a leading global provider of biometrics software products and solutions used to collect, manage, process, and match biometric images and data for identification and authentication.



**WEI YAN** (Ph.D. Electrical Engineering '18) has joined academia as a new Assistant Professor at Clarkson University.



Three alumni were virtually inducted into the UConn Academy of Distinguished Engineers in 2020. 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.

**MICHAEL R. DOUGLASS** (B.S. '79) is a distinguished member of the technical staff at Texas Instruments. He has been a reliability engineer with TI since 1979.



In 1992, he joined DLP Products to support reliability development of the Digital Micromirror Device (DMD), the DMD was the world's first micro-electro-mechanical system (MEMS) used for display applications. It is considered the most complex and one of the most reliable MEMS devices in the world.

**ERIC B. REED** (B.S. '91, M.S. '95) is Senior Vice President for Information Technology at Cigna, leading the Global Infrastructure Services Group responsible for cloud services, application production support and infrastructure. Prior to joining Cigna, he spent almost twenty-



five years in engineering/product development and IT in a variety of businesses at GE ultimately being promoted to Senior Vice President/CTO of GE Capital. Eric is also a longtime member of the ECE Department Industrial Advisory Board.

**KENNETH D. TAYLOR** (B.S. '71) started his career at United Technologies Research Center (UTRC) working



on a variety of projects ranging from automated gait analysis systems to non-destructive evaluation sensors. He held several high

profile positions leading projects such as, when VP, Research and Development at Valleylab. He and his research team developed an RF-based vessel sealing system (Ligasure). The Ligasure system is used in a wide variety of medical procedures and can significantly reduce blood loss and procedure time. Currently he is President of Taylor Medical Technology and Consulting.

## RESEARCH

# UConn ECE Professors on the Cutting Edge of Nanotechnology Research

Since the invention of the transistor in the mid 20<sup>th</sup> century, engineers have been expanding on the field of nanotechnology, which is the study and development of materials, processes, and devices that are on the atomic, molecular, and supramolecular level. From fabrics that repel liquids to a 10mm processor from Intel, the possibilities are endless—and a few faculty from the University of Connecticut Department of Electrical and Computer Engineering are working hard to advance the field to new levels.

One of those faculty members, Associate Professor **JOHN AYERS**, who has been at UConn for 30 years, started out in industry, where he developed his passion for the field.

“I first developed a passion for nanotechnology while working in the integrated circuit fabrication facilities of Fairchild and National Semiconductor in

“After arriving at the University of Connecticut in 1990 I established research in the area of nanoscale epitaxial structures and published two editions of the top book in this field. We invented a nanoscale defect-engineering approach, called patterned heteroepitaxial processing (PHeP) or dislocation sidewall gettering (DSG) which has been commercialized in LED flat-panel displays as well as nearly every infrared focal plan array manufactured today. More recently we have collaborated with Silicon Valley researchers to develop the processing and materials for high-performance SiGe digital integrated circuits. We continue to focus on the engineering of epitaxial nanostructures, with applications in high-efficiency, multi-junction solar cells, efficient solid-state lighting, and high-speed transistors for smart phones and autonomous vehicle radars.”

**“The future of nanotechnology and nanoelectronics involves presently unimaginable advances in displays, digital communications, computing, transportation, and energy. The complexity of the materials, devices, and processes will require a shift from empirical, cut-and-try approaches to one involving sophisticated models and virtual design.”**

the 1980s, and this passion expanded when I began research on epitaxial structures at Rensselaer Polytechnic Institute and Philips Laboratories.”

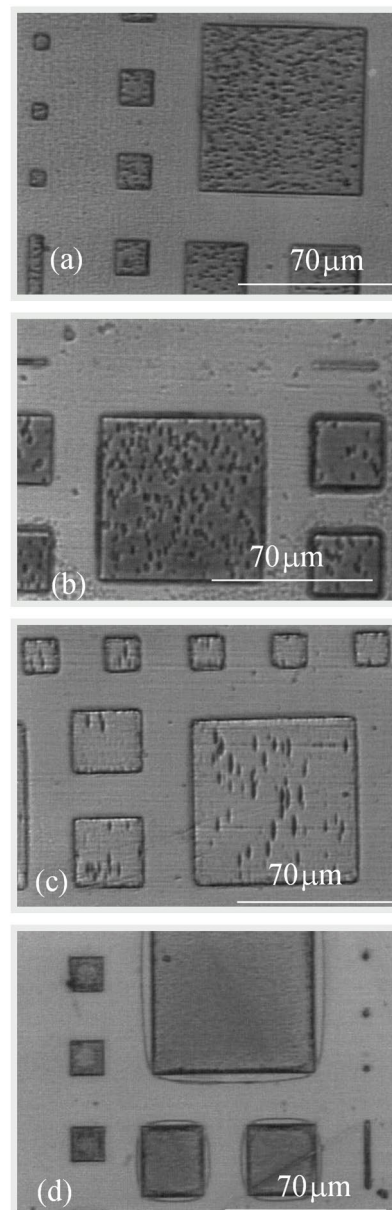
Epitaxy is a process used most commonly, on the commercial side, in the semiconductor industry where crystal layers are stacked on top of each other to form a film.

Ayers said that once he left industry and joined UConn, he was able to create new processes and help companies in research and development.

Another faculty member focusing research on nanotechnology is Associate Professor **HELENA SILVA**, who found her passion for the field during her undergraduate years.

“During my undergraduate studies in Portugal, I had the opportunity to work in a research lab on electronic devices, specifically amorphous silicon thin film transistors which are used for large-area electronics (displays, medical

*Continued on page 7*



The first practical demonstration of dislocation sidewall gettering (DSG) to remove all threading dislocations from 600 nm-thick ZnSe/GaAs (001) by patterning and post-growth annealing. (a) annealed at 400°C; (b) annealed at 450°C; (c) annealed at 475°C; and (d) annealed at 500°C. The as-grown material contains 107 cm<sup>-2</sup> threading dislocations, but sample (d) contains no measurable threading dislocations.

X.G. Zhang, et al., J. Appl. Phys., 91, 3912 (2002).





John Ayers

imaging sensors, solar cells). Since then I have developed an interest in all types of electronic materials, device fabrication, and characterization techniques.”



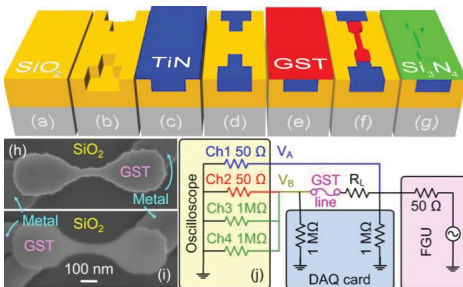
Helena Silva

Silva, who has been at UConn since 2006, currently works on phase-change electronic memory devices. This is a new non-volatile memory technology

with the potential to replace flash memory for significantly faster Solid-State Disks (SSD) type storage.

While both faculty members feel like the field is still developing, Ayers and Silva both agree that there are boundless possibilities.

“The future of nanotechnology and nanoelectronics involves presently unimaginable advances in displays, digital communications, computing, transportation, and energy. The complexity of the materials, devices, and processes will require a shift from empirical, cut-and-try approaches to one involving sophisticated models and virtual design,” Ayers said.



GeSbTe phase-change memory devices and experimental setup used in characterization. (a-g) Schematic illustrations of the cell fabrication steps on Si substrates and (i) Schematics of the experimental setup.

F. Dirisaglik, et al., “High speed, high temperature electrical characterization of phase change materials: metastable phases, crystallization dynamics, and resistance drift,” *Nanoscale*, 2015,7, 16625-16630 (2015).

## UNDERGRADUATE STUDENT PROFILE

### LAUREN BOULAY



When she’s not editing lab reports on FM radio transmission or staying up late into the night to study for yet another Partial Differential Equations exam, Lauren Boulay enjoys listening to podcasts, watching clips from Broadway musicals and RuPaul’s Drag Race, and delving deep into the lore of her favorite Marvel superheroes. Lauren will be graduating in Spring 2021 with a Bachelor’s degree in Electrical Engineering and a minor in Mathematics. Post-graduation, she plans to continue her work in Optical Engineering research with the Naval Air Warfare Center Aircraft Division

in Patuxent River, Maryland. Here, she has spent the last two summers constructing and testing unmanned underwater vehicles (UUVs) in conjunction with bistatic imaging systems so that the U.S. Navy can more easily scan objects on the seafloor in areas with murky or brackish water. In the future, she hopes to earn a graduate degree in Robotics so that she can continue her work with UUVs.

Lauren is a staunch advocate for women, BIPOC, and LGBT+ people in STEM fields. In her time at UConn, she has volunteered numerous times with the Society of Women Engineers and Engineering Ambassadors to get younger students interested in STEM careers. In past years, she worked as the New Member Officer and the Special Programs Director for the Society of Women Engineers at UConn. She especially enjoyed volunteering for events such as Multiply Your Options, where 8<sup>th</sup> grade girls visit UConn to do hands-on science demos. Lauren was fond of teaching the girls to build a working battery using nothing but a lemon and a few strips of metal. Lauren was also selected as a Werth Innovator to serve as an ambassador for entrepreneurship and innovation at UConn.

*Excelsior!*

Check out Lauren’s video!  
<https://youtu.be/KQKE032rOWM>



## CENTER NEWS

The department is proud to announce the creation of the new **CONNECTICUT ADVANCED COMPUTING CENTER (CACC)**. The center brings together all computing research activities in the School with focus areas of cybersecurity, machine learning, computer systems, imaging, and computational science and engineering. The center is a joint effort with the Department of Computer Science and Engineering along with faculty from

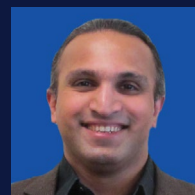
other departments within the School of Engineering. The CACC center is housed in the Innovation Partnership Building and facilities includes a secure research infrastructure, a high-performance computing cluster, penetration testing tools, and advanced electronics bench equipment. Participating ECE faculty include Profs. **JOHN CHANDY**, **BAHRAM JAVIDI**, **OMER KHAN**, and **LEI WANG**.



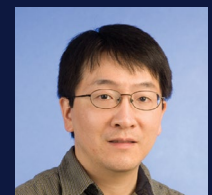
John Chandy



Bahram Javidi

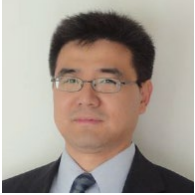


Omer Kahn



Lei Wang

## FACULTY NEWS



Yang Cao

Prof. **YANG CAO** and President **THOMAS C. KATSIOULEAS** were inducted into the Connecticut Academy of Science and Engineering (CASE) in May 2020.



Thomas C. Katsouleas

Prof. **ERIC DONKOR** was elected Secretary of the Connecticut Academy of Science and Engineering. The Secretary also serves as a member of the CASE Executive Committee.



Prof. **YAAKOV BAR-SHALOM** gave the first virtual IEEE AESS Distinguished Lecture seminar at Technion, his alma mater on March 30, 2020. He gave another virtual AESS Distinguished Lecture for Universidad Don Bosco, in El Salvador July 24, 2020.



Prof. **PETER WILLETT** was awarded the 2020 AAUP Excellence in Research and Creativity Career Award. This award recognizes scholarship with a national and international reputation, outstanding service in promoting scholarship at UConn, and long-term impact on UConn scholarship. Prof. Willett also was part of a team at NATO's Centre for Maritime Research



and Experimentation that was awarded the Science and Technology Organization Scientific Achievement Award for their "Advances in Artificial Intelligence and Information Fusion for Maritime Situational Awareness" project.



Prof. **JOHN AYERS** was awarded the 2020 School of Engineering Distinguished Engineering Educator Award by the School of Engineering in

recognition of his outstanding teaching at the undergraduate level over the last 30 years.

Prof. **DAVID TONN** received the 2020-21 CETL Outstanding Adjunct Teaching Award for his commitment to teaching, demonstrated knowledge of pedagogy, and an interest in fostering innovative teaching practices at the University. Prof. Tonn has been a long-time adjunct professor teaching several courses for the ECE Department.

## UNDERGRADUATE STUDENT NEWS

Sophomore **JOSEPH DIBENEDETTO** was selected as a Schweitzer Meritorious Scholar by the IEEE Power and Engineering Society Scholarship in 2020.

Seniors **CHRISTIAN CORWEL**, **GEORGE ZOGHBI**, AND **STEVAN WEBB** published their findings from their senior design project "Design and Control of an Underwater Launch System" in IEEE Access along with their advisor Prof. **ABHISHEK DUTTA**.

The poster, "Quantum Dot Gate (QDG) SRAMs: Fabrication and Modeling," by seniors **LAUREN BLEDSOE**, **DOMINICK HOLLISTER**, **TRUC MIN NGUYEN**, **MATTHEW SODOSKI**, along with graduate students **BILAL KHAN**, **ROMAN MAYS**, **RAJA HARI GUDLAVALLETI**, and their advisor Prof. **FAQUIR JAIN** was selected as one of the best undergraduate papers at this year's Connecticut Symposium on Microelectronics and Optoelectronics.

Senior **BRITTANY SMITH** is a recipient of the prestigious National Science Foundation Graduate Research Fellowship (NSF-GRFP). The fellowship recognizes and supports outstanding students in NSF-supported disciplines who are pursuing research-based master's and doctoral degrees at accredited institutions. Brittany has enrolled in the Ph.D. program at Duke University. Prior to graduating, Brittany also received the 2020 Outstanding Senior Women Academic Achievement Award.



Brittany Smith



# UNDERGRADUATE STUDENT PROFILE

## BRANDON D'AGOSTINO

Although he is expecting to complete UConn's dual Electrical and Computer Engineering undergraduate program this December, Brandon D'Agostino's foray into the engineering domain began long before his first term as a Husky in Fall 2017.

At thirteen, Brandon joined his father Bret D'Agostino on his quest to move on from their family's high-end audio manufacturing business Krell Industries (founded in 1980) to



bring to market his own brand of audio products. Over his adolescent years, Brandon alternated between numerous roles in his father's business such as building complex electronic subassemblies on the factory floor, leading presentations to end-users and product distributors at industry

tradeshows, and prototyping novel amplifier circuitry in the development lab alongside his father. Most notably, Brandon's natural affinity towards computers (he wrote his first BASIC program at seven) created a unique opportunity for him to take ownership in the design of the embedded control systems for all their company's products.

More recently, Brandon spent last summer interning in the Technology and Advanced Pursuits (TAP) group of the multifaceted defense company Moog Inc. where he had the opportunity to collaborate on the sensor systems for the company's cutting-edge autonomous vehicle platform.

Although his roots stem from commercial, Brandon has also been working as an NSF REU fellow in Professor Omer Khan's Computer Architecture Group (CAG) investigating issues in microarchitectural security and domain specific architectures since Summer 2019, and is looking forward to continuing his research as a UConn graduate student come this spring.

When Brandon's not working, you can expect to find him tinkering on hobby projects, listening to music, or planning his next road trip.



*Top left: Brandon D'Agostino  
Below: Bret D'Agostino*







# PANDEMIC ECE Faculty and Students Tackle COVID-19

By Eli Freund, Editorial Communications Manager, UConn School of Engineering

When COVID-19 caused the School of Engineering and the University to scramble in March, faculty and students were left to shut down operations and work remotely. While some might have reverted to keeping the status quo, there were a handful of Electrical and Computer Engineering department members that jumped into the fight to help combat this deadly pandemic.

One of those faculty members who jumped into the fight was Assistant Professor **ABHISHEK DUTTA**. Using his research skills, Dutta assembled a portal that provides actionable scientific guidance on COVID-19 from its inception to therapy. Dutta created a one-stop shop for verified and crucial information that has been referenced by NIMH and IEEE including others. The portal can be found at <https://sars2cov.wordpress.com/>. In addition, Dutta has developed feedback control algorithms that provide guidance to policy makers on the number of positive tests to be performed daily in order to actively stabilize the disease spread. The work will be presented at the 2020 IEEE Global Humanitarian Technology Conference (GHTC). Finally, Dutta developed optimized antiviral therapy based on learned pathological model of COVID-19, that is report in the *Annals of Neurology* 2020.

Another faculty, Board of Trustees Distinguished Professor **KRISHNA PATTIPATI**, as part of his work as a task force member with the Connecticut Academy of Science and Engineering, delivered a comprehensive report on COVID-19 to Governor Ned Lamont. In this report, Pattipati and other members outlined risk-balancing strategies for

re-opening businesses, contact tracing, fully reopening the healthcare system and recommendations to protect public safety. Because of this guidance, Connecticut has been recognized as a leader in controlling the spread of infection. The report may be found at [https://ctcase.org/reports/CASE\\_COVID\\_19\\_rev.pdf](https://ctcase.org/reports/CASE_COVID_19_rev.pdf)

Profs. **PETER WILLETT** and Krishna Pattipati collaborated with the Centre for Maritime Research and Experimentation (CMRE), based in La Spezia, Italy, to develop a modelling capability to forecast the spread of COVID-19. The collaboration used advanced statistical estimation techniques to describe virus-spreading behavior patterns and apply the methodology to the forecasting of the spread of COVID-19 in Italy and the United States. The NATO CMRE and UConn scientists are now in the process of publishing a scientific publication that will compare the performance of their approach to standard models. **JACOB**

**KRUCINSKI**, a Glastonbury High School senior who joined UConn as a freshman in the Fall, works with Prof. Pattipati and projects the pandemic outbreak through a data analytic platform he maintains at <https://www.kaggle.com/jacobkrucinski/coronavirus-covid-19-data-extrapolation>.

Lastly, when Chemical Engineering Professor **JEFFREY MCCUTCHEON** and **EDWARD WAZER** with Connecticut Center for Applied Separations

Technologies (CCAST) reached out to our department for help with electronics that will be integrated with UConn's low-cost, easily reproducible mechanical ventilator, UConn ECE undergraduate students **KEVIN KNOWLES, ZACHARY MURTISHI, COLT NICHOLS, ALEX JATSIV AND BRITTANY SMITH** responded. These students designed and implemented a robust and user-friendly pressure sensor module that will be integrated with the mechanical ventilator, in consultation with Edward Wazer and Associate Professor **ALI GOKIRMAK**. These modules monitor pressure changes in the system and sound an alarm if the tubes are disconnected from the patients, a critical safety feature of mechanical ventilator. Whitcraft Group has

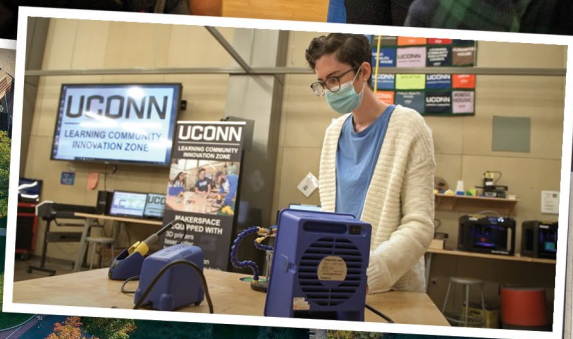


committed to mass-producing the UConn's mechanical ventilator to respond any urgent need.

While not an exhaustive list of the work being done by the department, ECE has been a major force in combating a virus which has claimed hundreds of thousands of lives. For the immediate future, the department will continue to push forward and add to the work being done collectively by the School and the University.



# AROUND CAMPUS





# RESEARCH

## New Sputter Deposition System

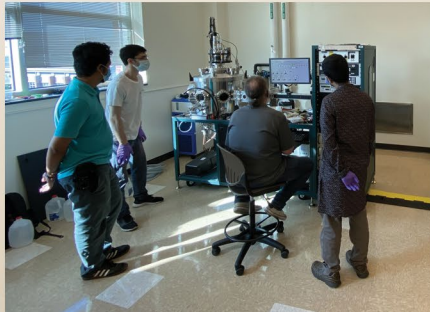
Profs. **ALI GOKIRMAK** and **HELENA SILVA** were awarded a Defense University Research Instrumentation Program (DURIP) grant that was used to install an AJA sputter deposition system and an accompanying electron-beam/thermal evaporation system. These systems bring the capability of depositing thin films of chalcogenide glasses, semiconductors, metals, and dielectrics in a wide temperature range (20° to 800° C). The sputter deposition system has an in-situ ellipsometer for characterization of thin films during and after growth. Phase change memory devices, an emerging high-speed non-volatile memory technology, as well as other nanoscale devices will be fabricated using these systems, for fundamental scientific studies on electronic and thermoelectric transport phenomena at nanometer scale, and implementation of novel electronic devices. Both systems are capable of handling up to 200 mm substrates which enables collaboration with industrial research laboratories.



Ali Gokirmak



Helena Silva



## VIRTUAL

### CMOC SYMPOSIUM

The virtual 29<sup>th</sup> Annual CMOC Symposium was held on Friday, October 2<sup>nd</sup>, 2020. President **THOMAS KATSOULEAS** welcomed the participants. It included three internationally known keynote speakers Dr. **HENRY LEE** (Forensic Expert), Dr. **ERIC FOSSUM** (Inventor of the CMOS camera) and Dr. **JERRY CHOW** (Quantum Computing Expert), 29 poster papers from undergraduates and graduate students, and 16 oral papers from universities and industry. To quote Yale Professor **FENGNIAN XIA**, “This is one of the best online conferences I have attended”. ECE Department faculty members and their students presented several papers.

## GRANT NEWS

The university received a \$8 million contract from the Air Force Research Laboratory to continue research into advanced aerospace manufacturing processes. A significant focus of the research will explore the use of systems engineering approaches to reduce failures and improve manufacturing efficiencies. In addition, the researchers will advance the state-of-the art in smart manufacturing, or what is called “Industry 4.0.” These techniques involve extensive computerization of manufacturing processes which enables much higher levels of analysis. A number of department faculty are involved in the effort including Professors **SHALABH GUPTA**, **PETER LUH**, **KRISHNA PATTIPATI**, and **SHENGLI ZHOU**, and Research Professor **RAVI RAJAMANI**.

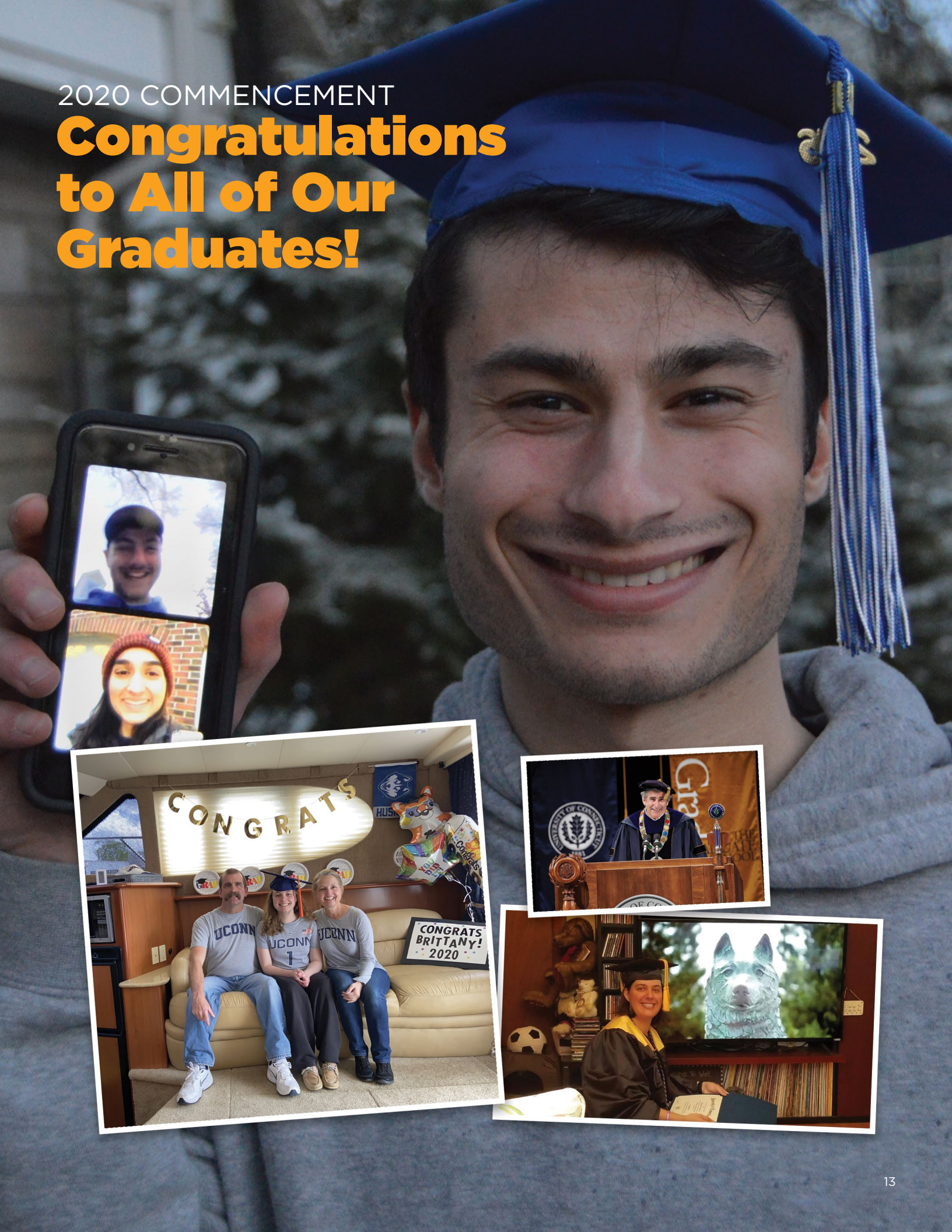


(U.S. Air Force photo by Joshua J. Seybert)



2020 COMMENCEMENT

# Congratulations to All of Our Graduates!





# FACULTY PROFILES



## A.F. ANWAR

Professor; Fellow, SPIE; Member, CASE.  
Quantum size effect devices, transport in semiconductor devices, high frequency noise in electronic devices, GaN-based high power devices.  
a.anwar@uconn.edu



## ASHWIN DANI

Associate Professor.  
Estimation and controls, machine learning for control, vision-based control, robotics.  
ashwin.dani@uconn.edu



## JOHN E. AYERS

Associate Professor.  
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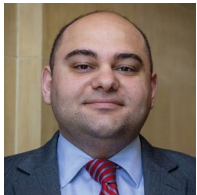
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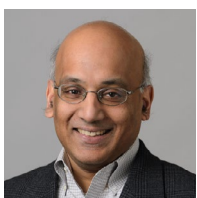
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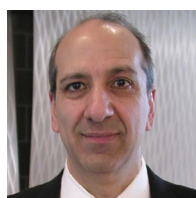
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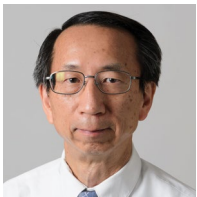


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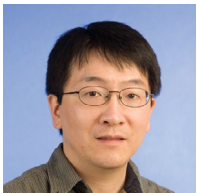
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