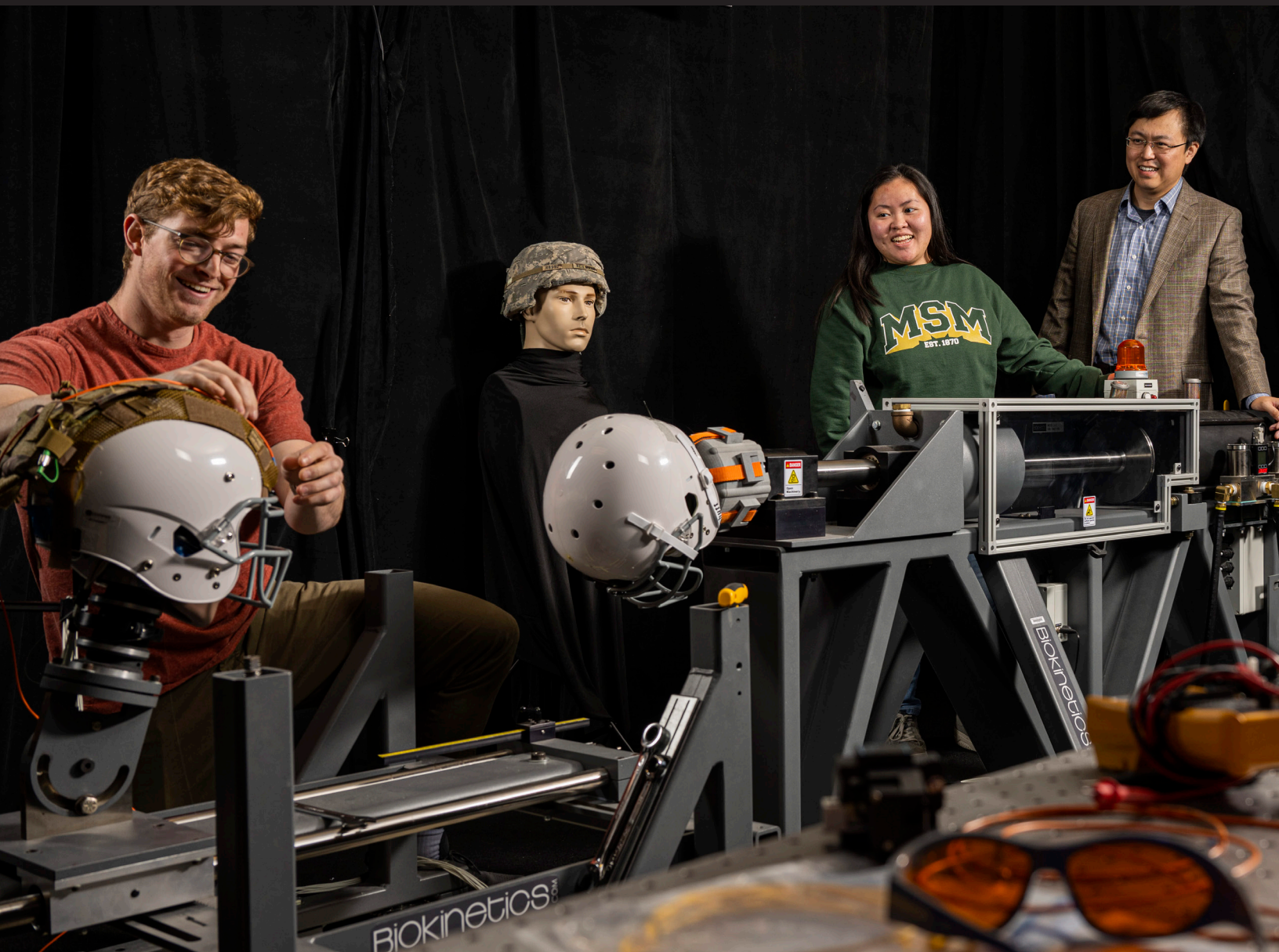


# CURRENT TRANSMISSIONS

Electrical and Computer Engineering  
Missouri S&T — (2023-24)



# Dear Alumni, Colleagues, and Friends,

I am pleased to introduce this first issue of *Current Transmissions* since 2020. These have been challenging years for everyone, but it seems like we are back on track for our core mission: serving future alumni.

Universities are uniquely situated to shape the future through both our students who go on to do amazing things in the world and our high-impact research.

I joined S&T in 2008 and became the chair of ECE in 2022. As a professor, I generally only interacted with my own students in class or in my research lab. One of the most exciting aspects of being chair is having the opportunity to interact with students across the department in a diversity of situations, alumni who have gone on to great success, and faculty throughout the department who are pushing the frontiers in their respective fields.

In this issue of *Current Transmissions*, you will learn just a little bit about what's happening on campus. Some of the most exciting changes were facilitated by a major gift from Fred & June Kummer.

Our students have benefited directly from scholarships through the Kummer Vanguard Scholars program and fellowships through the Kummer Innovation and Entrepreneurship Doctoral Fellows program. The university's research enterprise has been strengthened by the new Kummer Institute research centers, including the Center for Artificial Intelligence and Autonomous Systems led by our own Don Wunsch. We have been able to hire highly accomplished faculty, such as new Kummer Distinguished Professor Lijun Jiang in our world-class electromagnetic compatibility laboratory. And, if you visit campus, you will see many transformational construction projects underway.

But these programs and projects build on our solid foundation: our excellent students and faculty. In the following pages, you will read about new programs we have to support students pursuing graduate degrees, innovative research projects, faculty and students who have received awards and accolades, two of our excellent student groups—Eta Kappa Nu (IEEE-HKN) and the Radio Club—and our

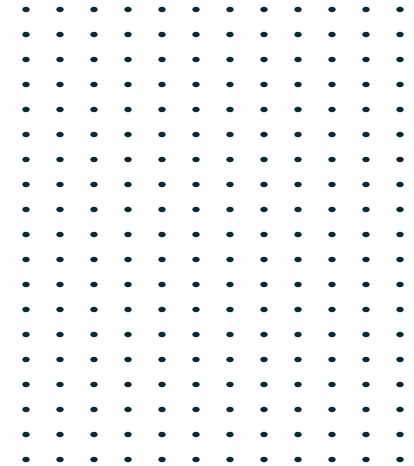


world-renowned EMC laboratory.

It is gratifying to see our students go on to great success in their careers and return as alumni. Four alumni were inducted into the Academy of Electrical and Computer Engineering last year, highly accomplished individuals whose success can be traced back to their experiences on campus. Each year, we induct additional members to honor the contributions that our alumni have made in their fields.

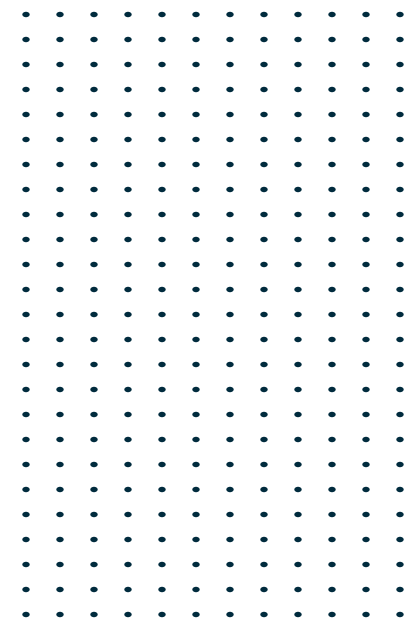
I am proud to lead this distinguished department. This fall, we will celebrate our centennial: 100 years as a standalone department! Watch for more details on the celebration, and thank you for being a part of our success!

***Jonathan W. Kimball,  
Ph.D., P.E.***  
Fred W. Finley Distinguished  
Professor  
Chair of Electrical and  
Computer Engineering



## DEPARTMENT ADMINISTRATION

- Dr. Jonathan Kimball:** Chair
- Dr. Joe Stanley:** Associate Chair, Academic Affairs and Computer Engineering Coordinator
- Dr. Kelvin Erickson:** EE Undergraduate Coordinator
- Dr. Chang-Soo Kim:** Associate Chair for Research and Graduate Coordinator
- Dr. Theresa Odun-Ayo:** Director, Cooperative Engineering Program
- Dr. Sahra Sedigh Sarvestani:** Distance Coordinator
- Dr. Theresa Swift:** Laboratory Coordinator







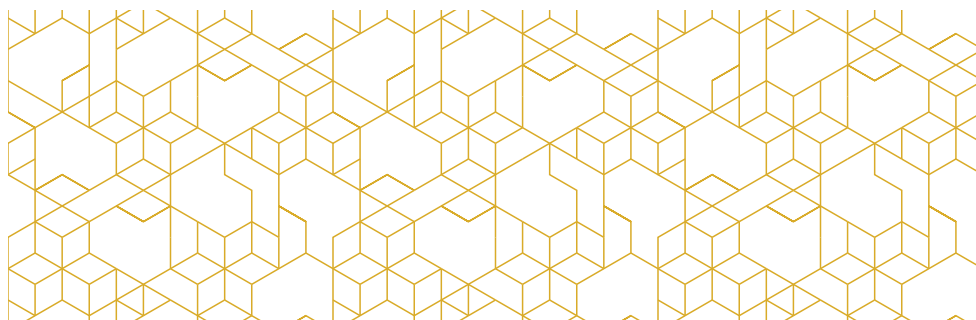
## In this issue

1. **Tech Trends** - Focusing on technological advancements and innovations in the department, emphasizing academic achievements and research.
2. **Faculty Focus** - Showcasing the accomplishments and activities of faculty members.
3. **Student Spot** - Featuring news and achievements of students in the department.
4. **Event Echo** - Covering events and happenings organized by or related to the department.
5. **Advances in Online Programs** - Spotlighting students who are pursuing an online master's program.
6. **Alumni Angle** - Updating new inductee members on Induction Ceremony



### Page 10

ECE students, Maximilian Telman, Beck Saunders, and Thomas Francois and their remarkable contributions during their summer internships at NASA.



# Hydropower Operations Optimization (H2Os) Prize

A Missouri S&T team of researchers led by **Dr. Rui Bo**, an associate professor of electrical and computer engineering, took second place in the Hydropower Operations Optimization (H2Os) Prize challenge sponsored by the United States Department of Energy (DOE).

The challenge was designed to develop methods to improve how hydropower is used in the electric grid and ensure that hydropower will continue to be a significant source of clean energy.

The top team from the University of Utah and Grid Elevated took home a \$30,000 prize. The Missouri S&T team was awarded \$10,000, as was the other runner-up, Vassar Labs.

The challenge was broken into three phases, and Bo's team successfully advanced through each stage before taking the runner-up honor.

"With each phase, the problem complexity and difficulty grew," Bo says. "Our goal was to develop optimal solutions to assist with cascading hydropower generation and water management."

In developing optimal water release schedules, the teams considered factors like water inflow, spill and bypass, water storage capability, flood management and flow requirements, impact on power grid and electricity prices, and economic and environmental benefits brought by hydropower. The teams did this by using computer modeling, optimization and data analytics to determine the best water management methods in the specific situations presented.

Bo says he was inspired to join this competition because of its relevance to a 2020 research project he led. That project which was funded by a nearly \$1 million grant from DOE, focused on ways to evaluate and increase the efficacy of pumped storage hydropower when participating in wholesale electricity markets.



## S&T undergrads encouraged to get master's degree through NSF grant

Missouri S&T offers scholarships, research opportunities, and mentoring to sophomore electrical and computer engineering students to encourage them to pursue master's degrees.

**Dr. Sahra Sedigh Sarvestani** emphasizes the growing demand for engineers with advanced degrees and professional skills like problem-solving and communication.

The program, known as APEX, receives \$1.5 million in funding from the National Science Foundation's Scholarships in STEM program, which provides scholarships up to \$10,000 annually. Eligible students can receive additional funding for accelerated master's degrees.

The program, which started in spring

2023, aims to support three cohorts of nine students each. Building on a previous NSF grant, the APEX S-STEM program has seen success, with over \$380,000 in scholarships awarded and a 100% participation rate in program activities.

Students must meet academic criteria, complete FAFSA and be U.S. citizens, permanent residents, or refugees to qualify for scholarships.



## S&T research team receives over \$2.4 million in DOD grants to study ‘smart’ unmanned vehicles

Dr. Jagannathan Sarangapani and his team at Missouri S&T have secured over \$2.4 million in grants from the U.S. Department of Defense (DOD), to national security. Their projects focus on advancing unmanned ground and aerial vehicles through machine learning and artificial intelligence.

The most recent grant, a \$465,000 award from the Office of Naval Research, supports the creation of a testbed for autonomous vehicle swarms. This research encompasses both hands-on vehicle experimentation and computational analysis, with the goal of enhancing vehicle reliability in diverse environments.

Sarangapani notes the importance of workforce development and collaboration with DOD agencies to assess vehicle performance. Their work aims not only to benefit the military but also to stay ahead of adversaries by anticipating potential disruptions and mitigating risks.



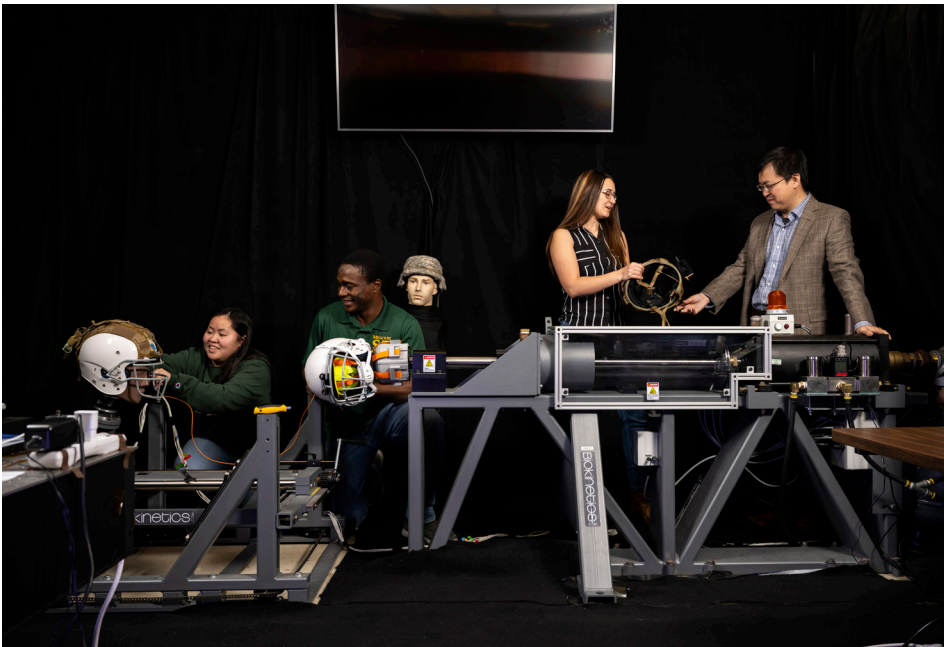
## Missouri S&T to power new energy technology incubator

Missouri S&T plans to launch an Energy Technology Incubator (ETI) to expedite energy innovation from research to market, and offer seed grants and resources to research teams.

Led by Dr. David Borrok, the initiative supports diverse energy research applications and fosters partnerships with S&T's Kummer College of Innovation, Entrepreneurship, and Economic Development. The incubator will span various fields, including hydrogen generation, carbon management, and geothermal energy, with a notable emphasis lies on electric energy research.

This includes efforts in power electronics, transportation electrification, microgrids, renewable energy systems, and the Solar Village living laboratories, which showcase the university's commitment to advancing electric energy technologies.





## S&T researcher secures over \$14M in funding to develop fiber-optic sensors for harsh, extreme conditions

**Dr. Jie Huang**, Roy A. Wilkens Endowed Associate Professor at Missouri S&T, spearheads cutting-edge fiber-optic sensor development for extreme environments.

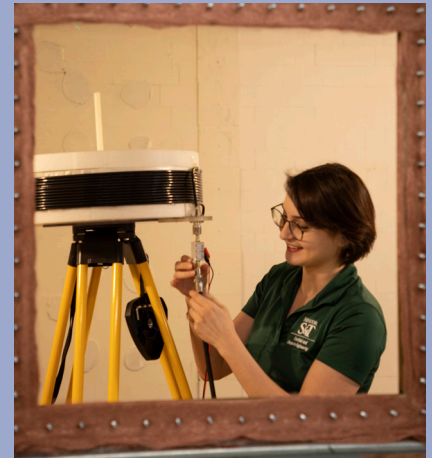
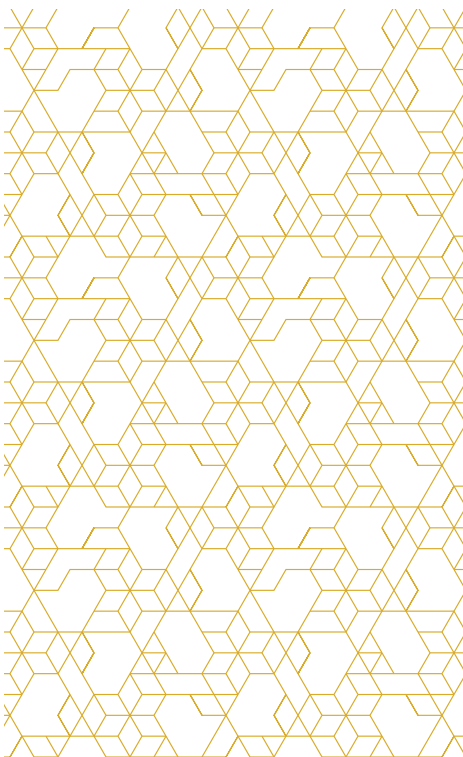
His research has brought in over \$14 million in federal grants and spans military and industrial applications for revolutionizing data collection. Fiber-optic technology, with cables as thin as a human hair, allows extensive sensor integration for diverse industries.

Dr. Huang collaborates with the military to develop sensors that detect hazardous substances, which enhances situational awareness. He also contributes to defense technology with helmets that detect traumatic brain injuries.

In industry, Huang optimizes steel-making processes using fiber-optic that provide critical insights for production efficiency. His research extends to power grid monitoring and structural engineering.

In collaboration with experts, Huang's work drives advancements in naval operations and civil engineering. His visionary research embodies a relentless pursuit of knowledge, and empowers decision-makers across industries. Through his groundbreaking

contributions, Huang is pioneering a future where fiber-optic sensors revolutionize data acquisition and analysis.



## S&T lab partners with top electronics companies, military agencies for EMC research

Missouri S&T's Electromagnetic Compatibility (EMC) Laboratory, led by **Dr. Daryl Beetner**, holds significant global influence in consumer and military electronics.

As the world's largest university-based EMC lab, it boasts a \$10 million-plus facility and partners with industry giants like Apple and Google.

With a focus on reducing electromagnetic emissions and improving signal integrity, the lab tackles complex challenges in electronic systems. Its research extends to national defense, studying electronics' susceptibility to electromagnetic energy.

Equipped with cutting-edge instruments and housed in a specialized facility, the lab's work is vital in advancing digital electronics.

Despite its unassuming exterior, Missouri S&T's EMC Lab plays a crucial role in shaping the technology landscape, contributing to innovations that impact daily life.





## ‘Just breathe’ Missouri S&T researchers ready for clinical trials for diagnostic instrument

ECE's **Dr. Jie Huang** is pioneering the development of a revolutionary diagnostic tool to analyze volatile organic compounds (VOCs) in a person's breath.

This technology could provide quick indications of various diseases, including diabetes, kidney disease, cancer and lung conditions without the need for invasive testing. With pending grant approval, Huang's team is poised to conduct large-scale clinical trials.

The system uses inexpensive microwave sensors to offer a cost-effective alternative to traditional diagnostic methods, which could healthcare by making diagnostics more accessible and efficient.

Supported by previous funding from the National Institutes of Health, Huang envisions this technology becoming widely available for use in doctor's offices or even at home. Co-principal investigator Dr. Rex E. Gerald II

collaborates on this groundbreaking project, which has a goal of creating a promising future for improved medical screenings and healthcare worldwide.



Researchers demonstrate new fast-charging technology for electric vehicles: Dr. Jonathan Kimball, chair of ECE, led a collaborative effort to showcase innovative battery charging technology to the U.S. Department of Energy. This technology, demonstrated at Bitrode Corp.'s facilities, will significantly reduce electric vehicle (EV) charging times. Kimball guided the development of algorithms and power converters, which optimize charge rates and grid integration. Supported by a \$2.9 million DOE grant, the project is an example of the potential of partnerships sustainable transportation solutions.

# WELCOME NEW FACULTY



**Dr. Lijun Jiang**, the new Kummer Endowed Professor in Electrical and Computer Engineering, brings a wealth of experience from previous positions at IBM and universities

in Hong Kong. Jiang holds a Ph.D. from the University of Illinois Urbana-Champaign. His expertise spans electromagnetic modeling, high-speed electronic design, machine learning and more. He has published extensively and holds numerous patents and his awards and honors include IEEE Fellow and ACES Fellow. Jiang's research includes contributions, advancements in fast multiple algorithms and machine learning for electromagnetic analysis, bolster Missouri S&T's EMC Lab, recognized globally for its impact in the field.



**Dr. Bohong Zhang**, an assistant research professor his Ph.D. earned in electrical engineering from Missouri S&T. His current research focuses

on advancing optical and microwave sensors and instrumentation, particularly their applications in intelligent infrastructures, biomedical sensing, and challenging environments.



**Dr. Farhan Mumtaz**, an assistant research professor, has a rich academic background. He earned his bachelor's degree from Punjab University Lahore,

Pakistan, in 2006, his master's degree from Quaid-i-Azam University Islamabad, Pakistan, in 2018, and his doctorate from Wuhan University of Technology, China, in 2021. Before joining S&T in February 2022, he held positions at Huawei Technologies (Pvt.) Ltd. in Islamabad. His research interests include sapphire crystalline fibers, Fiber Bragg gratings, femtosecond micro-machining of optoelectronic materials and instrumentation of fiber optic sensors for energy and harsh environments in the U.S. steel-making industry.

## FACULTY NEWS



**Dr. Daryl Beetner**, ECE professor and director of Missouri S&T's Electromagnetic Compatibility (EMC) Laboratory, has been named a Fellow of the Institute of Electrical and Electronics Engineers (IEEE).



**Dr. Mehdi Ferdowsi** was named associate dean for research for S&T's College of Engineering and Computing.



**Dr. DongHyun (Bill) Kim**, assistant professor of electrical and computer engineering, received the CEC Dean's Scholar Award, recognizing his scholarly excellence. Additionally, he earned IEEE-HKN Young Professional Award.



**Dr. Rohit Dua**, ECE associate teaching professor of electrical and computer engineering, was awarded the American Society for Engineering Education (ASEE) Midwest Section's Outstanding Service Award.



**Dr. Jie Huang**, Roy A. Wilkens Endowed associate professor of electrical engineering, received the S&T Faculty Excellence Award.



**Dr. Theresa Odun-Ayo** was named director of the Missouri S&T and MSU cooperative engineering program.



**Dr. Kelvin Erickson**, Curators' Distinguished Teaching Professor received with the Excellence in Division Leadership Award for the education and research division by the International Society of Automation.



**Dr. Chulsoon Hwang**, Woodard Associate Professor for Excellence in electrical and computer engineering, received the S&T Faculty Research Award.



**Dr. Jagannathan Sarangapani**, the William A. Rutledge-Emerson Electric Co. Distinguished Professor in electrical and computer engineering, was named a Curators' Distinguished Professor.





**Dr. Steve E. Watkins**, ECE professor of electrical and computer engineering, received the 2023 Meritorious Service Award from the ASEE Electrical and Computer Engineering

Division for significant, long term service to the division and the engineering education community.



**Dr. Theresa Swift**, teaching professor of electrical and computer engineering received the S&T Faculty Achievement Award.

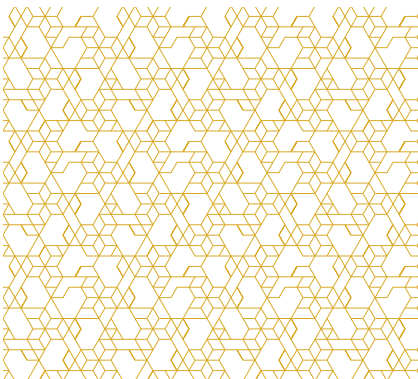


**Dr. Robert Woodley**, associate teaching professor received the Dean's Educator Award for his outstanding professional contributions.



**Dr. Donald Wunsch**, the Mary K. Finley Distinguished Professor, received the 2023 Computational Intelligence Society Neural Networks Pioneer Award from the

IEEE for his fundamental contributions to the neural networks field.



## ECE Triumphs with Dr. Kelvin Erickson's Latest Publications



**Dr. Kelvin Erickson**, Curators' Distinguished Teaching Professor of electrical and computer engineering, authored two foundational books on programmable logic controllers.

The first book, **Programmable Logic Controllers: An Emphasis on Design and Application**, provides a comprehensive guide to programmable logic controllers (PLCs) with a focus on program design.

The second book, **Allen-Bradley Programmable Logic Controllers: An Emphasis on Design and Application**. Predominantly using ladder logic, this book applies to Allen-Bradley ControlLogix, CompactLogix, Micro800, MicroLogix, and SLC-500 processors.

## Research citation achievements

A recent analysis of standardized citation indicators from the Elsevier Data Repository, published by Stanford University, highlights the exceptional research achievements of Missouri S&T faculty.

Several ECE researchers from S&T included. "Career" denotes those recognized for their career-long impact in their fields, "2022" denotes those recognized for single-year research productivity, and "both" denotes individuals recognized for both their career-long impact and research productivity for 2022.

- Dr. Bruce Archambeault. adjunct professor. (career)
- Dr. Mariesa Crow. professor emerita. (both)
- Dr. James Drewniak. professor emeritus. (career)
- Dr. Mehdi Ferdowsi. professor. (both)
- Dr. Jun Fan. former Cynthia Tang Professor. (both)
- Dr. Jie Huang, Roy A. Wilkens Telecommunications Associate Professor. (2022)
- Dr. Todd Hubing. former professor. (career)
- Dr. Jonathan Kimball. Fred W. Finley Distinguished Professor, chair and former director of the Center for Research in Energy and the Environment. (both)
- Dr. Albert Ruehli. adjunct professor. (both)
- Dr. Jagannathan Sarangapani. Curators' Distinguished Professor and a member of the National Academy of Inventors. (both)
- Dr. Pourya Shamsi. associate professor. (2022)
- Dr. Donald Wunsch. Mary K. Finley Missouri Distinguished Professor of Electrical and Computer Engineering and director of the Kummer Institute Center for Artificial Intelligence and Autonomous Systems. (career)
- Dr. Paul Werbos. adjunct professor. (both)
- Dr. Chen Zhu. former research assistant professor. (both)

# STUDENT NEWS



The Gamma Theta Chapter of HKN at Missouri S&T was one of the groups attending the 2023 Student Leadership Conference in Houston, Texas. With 13 students, the faculty advisor and several alumni volunteers, the Chapter recognized as a co-winner in the 2022-23 Outstanding Chapter Activities Award Program. Among twenty-one HKN chapters globally, our chapter stood out for its remarkable contributions. The award recognizes our dedication to professional development, institutional assistance, scholarship and public service.

## NASA summer success

Congratulations to three of our exceptional ECE students, Maximilian Telman, Beck Saunders, and Thomas Francois, for their remarkable contributions during their summer internships at NASA.

**Beck Saunders** developed a tool to simulate asynchronous variable data rates and coded modulation transmission techniques, significantly enhancing data transmission capacity for future satellite missions.

**Maximilian Telman** created the Artemis Radio Communications Obstruction Tool (ARCOT) for modeling of potential environmental obstructions on radio communications for Artemis missions, which will ensure communication fidelity and reduce interference.

**Thomas Francois** integrated open-source command and monitoring software into test equipment for Goddard's Compatibility Test Area and contributed to the development of a lunar search-and-rescue prototype, supporting NASA's compatibility test campaigns and enhancing Artemis astronauts' safety.





# 100 years of ham radio



The Missouri S&T Amateur Radio Club took part in the St. Louis and Suburban Radio Club's Winterfest convention in 2023. S&T students hosted a booth, which was visited by alumni and others interested in the university's club. The club was founded 100 years ago.

## Ethics Competition

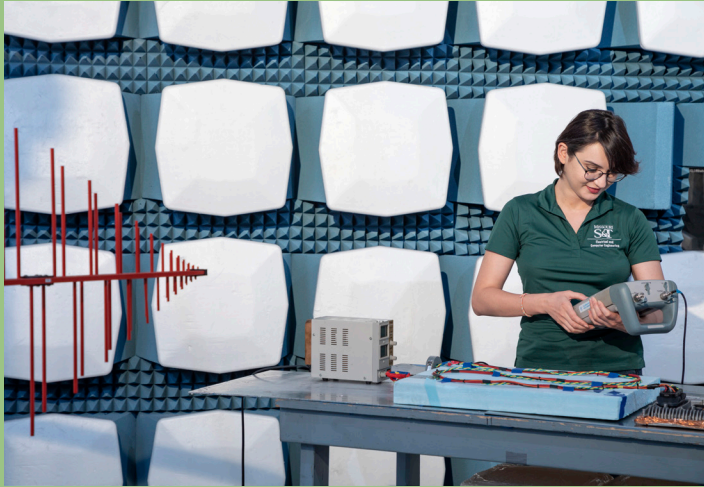


Missouri S&T ECE students Anton Lessmeister and Katie McNevin placed first in the IEEE Region 5 Student Ethics Competition in which the students must prepare and present an analysis of a scenario in professional ethics. The ECE student team of Julian Ortiz, Darryl Scheer and Eric Duong placed third in a division of the Region 5 Robotics Competition. Tatianna Reinbolt was a finalist in the Region 5 Poster Competition. Drs. Maciej Zawodniok, Steve E. Watkins, and Tayo Obafemi-Ajayi participated in the April 22nd events in Denver, Colorado.



# S&T students, faculty, alumni sweep awards at electromagnetic symposium

Missouri S&T students, faculty, former faculty and alumni associated with the **Electromagnetic Compatibility Laboratory** won several awards during the recent Electromagnetic Compatibility Society's conference, EMC+SIPI 2023.



Individuals associated with S&T received the following awards and honors during the conference, which was held July 31-Aug. 4 in Grand Rapids, Michigan:

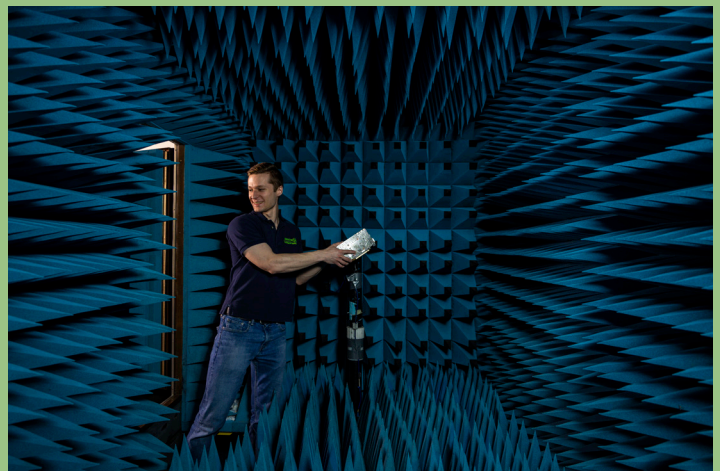
- EMC Society President's Memorial Award (for outstanding EMC student) – Shengxuan Xia, Ph.D. student in electrical engineering.
- IEEE Fellow Award – Yihong Qi, adjunct faculty.
- Technical Achievement Award – Chulsoon Hwang, associate professor of electrical and computer engineering.
- James C. Klouda Memorial Scholarship Award – Cody Goins, master's student in electrical engineering.
- Honored Member Award – Bruce Archambeault, adjunct faculty.
- Best SIPI Symposium Award – Hyunwook Park, postdoctoral fellow, and Chulsoon Hwang, associate professor of electrical and computer engineering.
- Best SIPI Symposium Paper Award honorable mention – Ling Zhang, PhD EE'21, adjunct professor.
- Best EMC Symposium Student Paper Award – Xiangrui Su, Ph.D. student in electrical engineering.
- Best EMC Symposium Student Paper Award honorable mention – Co-advised by James Drewniak, professor emeritus in electrical and computer engineering, Gang Feng, PhD EE'10, and Yihong Qi, adjunct faculty.
- Best SIPI Symposium Student Paper Award – Emmanuel Olugbade, Ph.D. student in mechanical engineering, Dr. Hiep Pham, PhD ME'23, Hwang and Jonghyun Park, associate professor of mechanical and aerospace engineering.
- Best SIPI Symposium Student Paper Award honorable mention – Shengxuan Xia, PhD EE'23.
- Student EMC Hardware Design Competition – Giorgi Tsintsadze, master's student in electrical engineering.
- Herbert K. Mertel Young Professional Award – DongHyun (Bill) Kim, assistant professor of electrical and computer engineering.

S&T featured three invited papers in the "Exemplary Paper" session. EMCS invites the authors of this year's seven finalists for the IEEE Transactions on EMC Best Paper Award whose paper was not followed up with a conference presentation and was chosen by the associate editors. Participants included:

- Francesco de Paulis, multi-year visiting scholar to S&T's EMC Lab.
- Javad Meiguni, postdoctoral fellow, Jianchi Zhou, Ph.D. EE'23, Giorgi Maghlakelidze, Ph.D EE'20, Yang Xu, MS EE'21, Hossein Izadi, Ph.D EE'20, Shubankhar Marathe, Ph.D EE'19, Li Shen MS EE'22, and Dr. Daryl Beetner, professor of electrical and computer engineering (and others from outside S&T).
- Ling Zhang, PhD EE'21, adjunct professor, Jack Juang EE'23, Zurab Kiguradze, NTT research professor, Bo Pu, postdoctoral fellow, Shuai Jin, PhD EE'17, Songping Wu, PhD EE'21, Zhiping Yang, adjunct professor, and Chulsoon Hwang, associate professor of electrical and computer engineering, (plus some others).



Five S&T students, faculty, alumni and adjuncts were co-authors of papers that were finalists for one of the two best paper awards, and five were finalists for the best student paper awards.



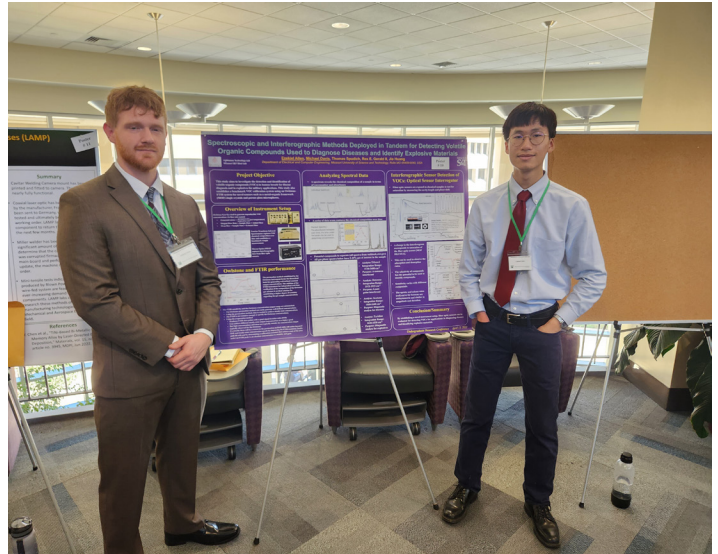


# Undergraduate Research

During the 18th annual Undergraduate Research Conference at Missouri S&T in April 2023, dozens of students presented their research projects to the public. In the poster category, **Ezekiel Allen**, a sophomore in electrical engineering from Pleasant Hill, Missouri, and **Michael Davis**, a sophomore in electrical engineering from Louisiana, Missouri, secured third place for their research titled "Detecting VOCs for Medical and Industrial Applications." The research was advised by Dr. Rex Gerald, a research professor of electrical and computer engineering.



Eighty-two PES Scholarship recipients were selected, and **Griffin Buschjost** (left) and **Christian Winingar** (right) were chosen as recipients of the 2023/24 IEEE PES Scholarship Plus.



Michael Davis (left) and Ezekiel Allen (right)

**Jack Hishon**, a senior in electrical engineering, was chosen for the Dean's Undergraduate Research Scholar award for the Fall 2023 semester.

## Dr. Sandra Magnus Receives IEEE-HKN Eminent Member Designation

Dr. Sandra Magnus, Phys'86, MS EE'90, former NASA astronaut and NAE member, was honored with the IEEE-HKN Eminent Member Designation at the IEEE Educational Activities (EA) Awards Ceremony on Nov 17, 2023, in Washington, DC.

Magnus was inducted into the Missouri S&T HKN chapter as a professional member in 2011. In 2023, on behalf of the student chapter, nominated her for the IEEE-HKN Eminent Member Designation.



Dr. Sandra Magnus, ECE Alumni

## Dean's Ph.D. Scholar Award



In 2023, six students were honored with the Dean's Ph.D. Scholar Award, which recognizes research contributions to the college. ECE Student **Waqas ur Rehman** was one of the recipients. He was nominated by Dr. Rui Bo ECE assistant professor.

# Advances in online programs

Boeing employee **Rachel Sutterer**, earned a bachelor degree in Electrical Engineering from University of Missouri-Columbia (Mizzou) in 2016. Upon graduation, she started her career at the Department of Energy's (DOE) Kansas City National Security Campus, managed by Honeywell Federal Manufacturing & Technologies, LLC, where the mission is to support the warfighter and keep our nation's nuclear deterrent safe, secure, and reliable. In 2018 Sutterer joined Boeing – Phantom Works. She supports research and development, rapid prototyping, and focuses on technology maturation to provide advantages to the warfighter. Upon her transition to Boeing, she found the Learning Together Program (LTP), which Boeing financially supports full-time employees to pursue a master's degree. Sutterer knew she always wanted to pursue her a master's degree, and was advised to look into Missouri S&T's online program. All of her colleagues at Boeing had high praise of the program; flexible schedule while working full time, reasonable cost covered under the LTP program, great reputation, and offered courses to broaden her engineering perspective. A lot of her upper management, including her current manager, earned degrees from S&T, and they highly recommended that she to start the program.



Rachel A. Sutterer, Employee at Boeing

Sutterer soon learned about the Graduate Certificate Programs that didn't require GRE/GMAT scores, that would allow her to earn credit toward her master's degree. It seemed to be the perfect workload balance of participating in the online distance program while working full time.

The flexibility of the program, along with the depth and breadth of the coursework, were huge assets of the program, but Sutterer was impressed with the faculty. From early on in the program, **Dr. Sahra Sedigh Sarvestani** was such a supportive mentor to Rachel as her advisor. **Dr. Daryl Beetner** had an enthusiastic way of teaching. **Dr. Rui Bo**, **Dr. Kristen Donnell**, and **Dr. Pourya Shamsi**, all had such in-depth expertise in their particular focus areas. **Dr. Mina Esmaeelpour** was willing to provide an independent study and was flexible with Sutterer's schedule over a summer semester. During her last semester, she had the opportunity to broaden her perspective by

taking a course in leadership. **Dr. John Richards** taught her leadership skills that not only translated to her professional career at Boeing, but impacted her personal life, and her most recent endeavor of pursuing a pilot slot with the United States Air Force (USAF) Air National Guard (ANG).

Although Rachel never stepped foot on campus, she had such a positive experience through her degree program at Missouri S&T from both technical and personal perspectives. She highly Recommends the online program; especially for full-time working employees.

After earning her degree from S&T, Sutterer is leveraging her technical experience to excel in her professional career at Boeing, and has joined the USAF ANG to undergo pilot training. She is grateful for her engineering degree from S&T, the support both from Boeing as well as the S&T faculty, and feels that it has provided her with a strong foundation for all of her future endeavors in life.

The best advice she could give to the next generation of Miners is to always keep a positive attitude, strive to be better than who you were yesterday, surround yourself with a good support group, invest in your team, and to go for their dreams, no matter how big they might be.

## GRADUATION DOESN'T MEAN GOODBYE

It's easy to stay in touch with your department. Just say hello when a student representative calls during phonathon, or drop us a note at <https://ece@mst.edu>

Tell us what you're doing with your degree in electrical and computer engineering so we can feature your accomplishments among our alumni achievement stories.

With your support, there's no limit to what we can achieve!



# WELCOME TO THE ACADEMY

Four electrical and computer engineers with ties to Missouri S&T were inducted into the S&T Academy of Electrical and Computer Engineering during the academy's induction ceremony, which was held Thursday, April 13, 2023.



**James W. Fonda**, EE'01, MS EE'04, PhD EE'08, of Rolla, Missouri, an electrical engineer with The Boeing Co., held an internship with Continental AG in Hanover, Germany, in 2001. He joined Boeing Research and Technology in 2008, then moved to his current position in Boeing Additive Manufacturing in 2020.

Fonda holds 12 U.S. patents. He is a member of Eta Kappa Nu and serves as a coach for FIRST Robotics.



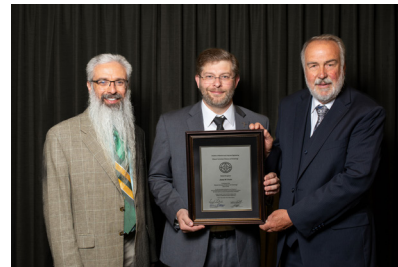
**Don Ulrich**, EE'97 is co-founder and former CEO of Stone Technologies, now part of Gray Solutions. He held positions at Square D Co. and Sverdrup Corp. before co-founding Stone Technologies in 1996. Ulrich has received awards such as the Charlie Bergman "Remember Me" Award. Under his leadership, Stone

Technologies received multiple honors, including being listed among the top workplaces by the *St. Louis Post-Dispatch* for five consecutive years.



**Randall A. Berry**, EE'93 is Chair and John A. Dever Professor of Electrical and Computer Engineering at Northwestern University. He earned his master's and Ph.D. from MIT. Berry joined Northwestern in 2000, rising to full professor in 2011. He directs Northwestern's master of science

program in information technology. Berry is also a principal engineer at Roberson and Associates. He has authored books, journal articles, and conference papers, and is a Fellow of IEEE. Berry has received prestigious awards, including an NSF CAREER Award, and holds leadership roles in various IEEE publications and conferences.



**Patrick L. Chapman**, EE'96, MS EE'97 of Austin, Texas, is vice president of electrical engineering at Redwood Materials. He also holds a Ph.D. from Purdue University. Chapman's career spans various significant roles, including professorships at the University of Illinois at

Urbana-Champaign and co-founding SmartSpark Energy Systems, later known as SolarBridge Technologies. He held positions at SunPower Corp. and Enphase Energy, where he was a senior director before assuming his current position in 2022. Chapman is a Fellow of IEEE, has received prestigious awards in power electronics, held numerous U.S. patents, and authored over 100 publications.





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