

# FOCUS



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Future

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## 2023: A Year of Reflection, Celebration and Connection

2023 was an occasion for reflection, celebration and connection as the IEEE Foundation marked 50 years of impact; thank you for being part of it and making it all possible!

The year began with the launch of a new website ([www.ieeefoundation.org](http://www.ieeefoundation.org)) packed full of information about donors and the programs they make possible. The site welcomes more than 3,000 visitors each month. As a resource for the future of the profession, a page dedicated to helping [Students & Young Professionals](#) discover the wide array of opportunities designed just for them was added.

On 16 February 2023, Ralph Ford, serving in his second year as the IEEE Foundation President, announced the [launch of our 50th anniversary celebration](#) and the strategically-selected IEEE programs designed to celebrate the past, lift the present, and build the strong future we all need. This important milestone, led by John McDonald, IEEE Foundation Director and 50th Anniversary Celebration Chair, was celebrated with fun events, including in-person and virtual launch receptions welcoming hundreds. The celebration was heralded across the IEEE community at conferences and meetings, including IEEE Sections Congress and to the public through social media, where [Bruno McDonald](#) was introduced as the IEEE Foundation Chief Canine and four-legged ambassador.

Followers on LinkedIn helped define the four most captivating IEEE donor-supported programs, selecting IEEE Smart Village, IEEE TryEngineering, IEEE Women in Engineering, and IEEE-Eta Kappa Nu, which each received a special US\$5,000 grant from the IEEE Foundation. The 50th Anniversary celebration continued through February 2024, allowing for 12 months of [Reflecting on 50 Years of Impact](#).

Thousands of donors once again came together in 2023, serving as the catalysts behind all that we are able to do for IEEE. Through their generosity, the portfolio of donor-supported programs expanded, adding 17 new funds that support IEEE programmatic activities ranging from named scholarships to the launch of the IEEE Global Museum (more on page 4). To make giving even easier, a handy giving guide was created, and two giving methods were added – Paypal through our online giving portal and appreciated cryptocurrencies.

Generous bequests from the IEEE community continued to allow investment in meaningful initiatives like the establishment of the [IEEE Humanitarian Technologies Board Endowment Fund](#). To help the IEEE community discover how they, too, can include the IEEE Foundation in their estate plans, the 3rd annual estate planning webinar was hosted during Estate Planning Awareness Week in October.

Throughout 2023, guided by our five program pillars, investments in donor-supported programs manifested in transformative impacts for individuals and communities around the world. ■



Scan this QR code to watch a video featuring 2023 program impacts.



2023 was a memorable year full of poignant occasions and programmatic impact. Thank you for helping us celebrate five decades of advancing technology for the benefit of humanity through philanthropy. We are grateful for all that you do every day to advance the impact of IEEE's humanitarian and philanthropic values.

# IEEE Foundation Day - A Celebration of Heart

Beginning in 2024, 16 February will be known as [IEEE Foundation Day](#). The Day serves as an annual celebration of the IEEE Foundation's role as the heart of IEEE charitable giving and philanthropy, and honors the impact shaped by your commitment of time, talent and treasure.

In celebration of IEEE Foundation Day, the IEEE community was invited to share stories of impact on the IEEE Foundation Day Kudoboard. Here are a few of the stories that were shared:



## It is wonderful to celebrate IEEE Foundation Day!

From: Jerry Hudgins



I feel blessed to be able to work with so many talented people on such worthy activities and projects. I hope to give back at least a bit for the large benefit I have received from many of the Foundation-supported programs like Eta-Kappa-Nu, PES Scholarships, Myron Zucker Student Grants, and the History Center, to name but a few. I am a witness almost every day to the impact that Foundation programs have on students, and it makes me thankful that I can contribute in several ways.

## Happy IEEE Foundation Day!

From: Sarah Rajala



For over 50 years, IEEE has been a part of my husband's and my life. We have had the opportunity to participate in many technical and educational activities and work with outstanding people worldwide. But what gives us the most joy is being able to donate to IEEE programs that impact society, especially the education of future leaders and the development of technology that has a positive impact on humanity. We hope you will join us and support the programs you are most passionate about!

## Happy IEEE Foundation Day!

From: Lorena Garcia




I have volunteered in some of the programs supported by the IEEE Foundation, like TryEngineering, HKN, and Awards, witnessing the impact of donations on those initiatives. That made me start donating, and today, I have the privilege to begin my term as Director! I want to contribute to the mission and vision of the Foundation so we can continue positively transforming the world through technology and education!



We thank everyone who joined our celebration in 2024 and welcome suggestions for our next celebration of IEEE Foundation Day on 16 February 2025! ■

# EPICS in IEEE Celebrates 15 Years of Impact



 Since its founding in 1995 at Purdue University, the Engineering Projects in Community Service (EPICS) program has been providing nonprofit organizations with technology solutions to improve and deliver services to their community while broadening undergraduate students' hands-on experiences.

In 2009, the EPICS program was brought to IEEE by Moshe Kam, Kapil Dandekar, and Saurabh Sinha. Together, they founded [EPICS in IEEE](#) as an IEEE Educational Activities program. Like the program at Purdue, EPICS in IEEE helps students develop essential skills by providing grant funding to allow them to work collaboratively to develop solutions to solve needs in their community.

"When we created EPICS in IEEE," Dandekar explains, "we were very eager to align the perspective of service-learning from the EPICS program at Purdue with IEEE's mission to foster technological innovation for the benefit of humanity."

During the past 15 years, more than 219 projects in 34 countries have been completed, involving more than 11,000 students in service-learning projects. Of those students, 47 percent identified as female. And in 2023, thanks to generous donors, EPICS in IEEE surpassed a milestone of US\$1 million in project funding.

"EPICS in IEEE has played a key role in expanding the global reach of projects in which engineering students bring their learning and skills to bear in addressing challenges faced by their local communities," says Leah Jamieson, 2007 IEEE President and a cofounder of EPICS at Purdue in West Lafayette, IN, USA.

## A focus on learning outcomes

The program differs from other humanitarian efforts within IEEE because of its focus on engineering-student learning outcomes as well as the benefits to the local communities.

"EPICS in IEEE is a perfect way to merge engineering education and engagement," Sinha says. "It provides an opportunity for universities to connect their students' educational experiences to support the United Nations sustainable development goals. I've had the privilege of seeing EPICS in IEEE in many countries, and enjoyed the globalizing benefit that the program brought to all parties involved."



In follow-up surveys about their EPICS in IEEE participation, students have shared that it was unlike anything they did in the classroom. "This experience has been a profound learning opportunity," says Leonardo Vergara, a systems engineering student at Universidad del Norte, Barranquilla, in Colombia and team member of the *Eyeland* EPICS in IEEE project. Vergara adds, "My collaboration and communication skills have also been greatly enhanced. It has reaffirmed my belief in technology's power to create positive social impact and ignited a sense of social responsibility."

## Continued growth

To take the program to the next level, EPICS in IEEE works with the IEEE Foundation to enable donors to support the program. Thanks to the partnership, initiatives such as the [EPICS in IEEE Environmental Competition](#), funded by the United Engineering Foundation, and the Access and Abilities Competition, supported by the IEEE Jon C. Taenzer Memorial Fund (more about the Taenzer Fund on page 12) are made possible.

"Over the past 15 years, the term 'service learning' has been evolving and is often now referred to as 'community-engaged learning,'" says Stephanie Gillespie, Chair of EPICS in IEEE. As the field evolves, so does EPICS in IEEE. During the past two years, the committee has noticed an increased interest: 190 proposals for funding were submitted in 2023, up from 77 the year before. The committee approved 39 projects last year, up from 23 in 2022.

EPICS in IEEE would not have had this success if not for donors supporting the program. The funding that is provided to student teams allows them to make their ideas and solutions a reality. These students experience real-world engineering design challenges and the enriching experience of making a difference in their communities. Donations to EPICS in IEEE make a real impact on engineering students as they prepare for their careers.

Visit the EPICS in IEEE webpage at <https://epics.ieee.org> to learn more. Interested in helping EPICS in IEEE expand its reach and support more worthy projects? Contact Danny DeLiberato, CFRE at [d.deliberato@ieee.org](mailto:d.deliberato@ieee.org), call him at +1.732.562.5446 or make a gift online at <https://www.ieeefoundation.org/SupportEPICS>.

*This article is an edited excerpt of the "This IEEE Service-Learning Program Is More Popular Than Ever Over 11,000 students have participated in the 15-year old program" published by The Institute in January, 2024. ■*

# IEEE Global Museum on View

By: Daniel Jon Mitchell, IEEE Senior Historian



The [IEEE Global Museum](#), a program of the IEEE History Center, is gearing up for the opening of its flagship traveling exhibit, *Unseen Signals: Edwin H. Armstrong's Radio Revolution*, scheduled to open at the San Antonio Museum of Science and Technology (SAMSAT) in San Antonio, TX, USA, in July 2024. The exhibit, partly funded by an anonymous donor, recounts the incredible life and achievements of Edwin Howard Armstrong, the electrical engineer and wireless pioneer who in 1917 received the Institute of Radio Engineers' first Medal of Honor (now IEEE's highest award). After SAMSAT, it will travel to other major museums throughout the United States until at least 2027.

Chip Hall of Fame exhibit will launch in North America in late 2025. A plan to travel it worldwide is under development.

In addition to this program of public-facing traveling exhibits, the goal over the next three years is to build the capacity to create regular, temporary exhibits at major IEEE conferences across a broad range of IEEE fields of interest. One such example is the curated exhibit to celebrate the 100<sup>th</sup> anniversary of the IEEE Dielectrics and Electrical Insulation Society (DEIS).

*In Charge: Technology Flows through Dielectric and Insulating Media* was unveiled at the Society's annual Conference on Electrical Insulation and Dielectric Phenomena (CEIDP), held in East Rutherford, NJ, USA during October 2023. Generous artifact loans from AT&T and Nokia Bell Labs enabled us to display an original section of the first Transatlantic Telephone Cable, TAT-1, from 1956, and a prototype Western Electric EL2 electret 'transmitter' or microphone, which entered production in 1978. The exhibit's most visually spectacular section charted the rise and fall of the GE and Westinghouse high voltage power engineering laboratories — from their inception during the 1920s, when major cities became electrified — through their closure during the 1980s. By this time, these laboratories had made possible safe, cost-effective, long-distance high voltage power transmission.

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*Design concept for "Unseen Signals: Edwin H. Armstrong's Radio Revolution." The exhibit pairs IEEE History Center research and storytelling with curated artifacts, evocative graphic design and interactive elements that explicate Armstrong's technical breakthroughs to the layperson.*

The mission of the IEEE Global Museum is to promote an understanding of electrotechnology and its impact upon society by bringing museum-quality exhibits, from a single groundbreaking artifact to a full collection, to IEEE members and the public. The "global" in Global Museum reflects the reach of the IEEE community of technical professionals, the worldwide historical impact of electrotechnology, and the ambition to travel exhibits to museums, libraries, and IEEE conferences and events around the world.

With this global vision in mind, for its next project the IEEE Global Museum has partnered with [IEEE Spectrum magazine](#) to create a highly-mobile, engaging, interactive traveling exhibit based on the IEEE Spectrum digital [Chip Hall of Fame](#). The Chip Hall of Fame exhibit will explain why integrated circuits or microchips were designed and engineered, and reveal their varied and essential roles, such as signal processing, audio engineering, and telecommunications. It will connect opaque names like Z80, 6502, and ARM1 to products people will remember or recognize from their own lives, such as a favorite home computer or video game console from the 1980s, up to the GPS-enabled smartphones we all carry today. Funding permitting, the



*"In Charge: Technology Flows through Dielectric and Insulating Media," an IEEE Global Museum exhibit curated to celebrate the centennial of the IEEE Dielectrics and Electrical Insulation Society (DEIS).*

The success so far in delivering impactful exhibits has been greatly facilitated via collaborations with local and national museums, private collectors, universities, corporations, and other organizations, as well as the financial generosity of the [IEEE Life Members Committee](#), gifts in memory of Dennis L. Shapiro, and other donors. A special thanks to John Impaggiazzo, whose service and leadership in various roles on the IEEE History Committee led to the Global Museum's creation.

The future of the IEEE Global Museum depends on philanthropic support. Inspired to help IEEE promote the history of technology? Contact Danny DeLiberato, CFRE at [d.deliberato@ieee.org](mailto:d.deliberato@ieee.org), call him at +1.732.562.5446 or make a gift online at <https://www.ieeefoundation.org/SupportHistory>. ■

# Recognizing Educational Excellence



Educating the next generation of innovators and engineers is one of the core program pillars of the IEEE Foundation. One of IEEE Foundation's main partners in this quest is IEEE Educational Activities.

On 17 November 2023, the IEEE Educational Activities Board (EAB) celebrated major contributions in the field of engineering and technical education through its 2023 Awards Ceremony, *Celebrating Brilliant Minds and a Bright Future*. This annual ceremony recognized deserving individuals, a team, an organization, and/or an IEEE Section and Society across numerous categories. The evening was hosted by Rabab Ward, Vice President, EAB and S. K. Ramesh, Chair, EAB Awards. Two of these awards celebrated longtime, proactive intersections with the IEEE Foundation.

IEEE EAB's Meritorious Achievement Award in Outreach and Informal Education was presented to [Science Kits for Public Libraries](#) (SKPL) "for pioneering and leading the IEEE Region 4 Science Kits for Public Libraries program that attracts and inspires the next generation of STEM leaders." SKPL helps excite kids about STEM through the addition of fun and engaging science kits to local library collections. "We're honored and appreciative of this award, which is the icing on the cake for a volunteer activity that gives us so much satisfaction," shared SKPL Committee Chair John Zulaski on behalf of himself and fellow committee members Douglas De Boer, Rajeev Verma, Michael Wiltermood, William Wilkens, Marilyn Genther and Norman Phoenix. Looking ahead, "our vision is to be sustainably funded to issue at least 50 Region 4 SKPL grants annually and to be recognized worldwide as the go-to resource for other IEEE Regions and Sections interested in starting their own SKPL program," he said of the team, which donated its cash prize money to the IEEE Foundation's SKPL Fund to help more public libraries create a



John Zulaski (left), SKPL Chair with Richard Allen (right), Director, Donor Outreach and Engagement at the IEEE Foundation, during the Ceremony's pre-reception.

circulating science kit collection. "Foundation staff are experts in handling contributions and seeing to it that donations designated for specific uses are honored," said Zulaski, "having the Foundation's oversight ensures that donations will be managed properly."



Melody Richardson (middle) receives the 2023 IEEE EAB Meritorious Achievement Award in Pre-University Education from S.K. Ramesh (left) and Rabab Ward (right).

IEEE EAB's Meritorious Achievement Award in Pre-University Education was awarded to Melody Richardson, STEM on the MOVE Founder and MOVE Community Outreach and Chair, Educational Activities, IEEE Atlanta Section. "Receiving this award is a profound honor and privilege that not only represents my individual contributions but the collective dedication of those who have supported me," said Richardson, whose STEM on the MOVE initiative — the educational arm of MOVE Community Outreach — actively showcases how STEM skills can be used to benefit humanity through such engaging means as STEM workshops, Challenge backpacks and a STEM adventure book. Richardson donated her cash prize to the IEEE Foundation to support [IEEE-USA MOVE Community Outreach](#), an emergency relief program that assists victims of natural disasters with short-term communications, computer and power solutions. "The IEEE Foundation's support has been instrumental in enabling MOVE to contribute to recovery efforts in 35 natural disasters across the U.S., providing essential infrastructure support to more than 1,000,000 survivors," she explained. "The IEEE Foundation has also assisted the program in globally distributing more than 10,000 STEM on the MOVE adventure books, furthering its commitment to transforming lives through the power of technology and education." When not deployed for natural disasters, MOVE volunteers conduct community outreach and facilitate learning opportunities in the STEM fields.

Watch the ceremony on-demand at <https://www.ieeefoundation.org/2023EAAwards> to learn more about EAB's portfolio of University and Pre-University programs and how your support of IEEE Foundation helps to educate the next generation of innovators and engineers. ■



Scan the QR code to discover how you can donate a cash prize or honorarium to support an IEEE social impact program.

# onsemi Awards Grant to TryEngineering



onsemi's mission is to drive disruptive innovations to help build a better future. With a focus on automotive and industrial end-markets, the company's work includes vehicle electrification and safety, sustainable energy grids, industrial automation, and 5G and cloud infrastructure.

Like the IEEE Foundation, onsemi is interested in solving the world's most complex challenges and leading the way to creating a safer, cleaner, and smarter world through technology. This shared value made the partnership with the IEEE TryEngineering program (more on page 7) a natural fit. onsemi supported TryEngineering through their Giving Now program, launched in 2022.

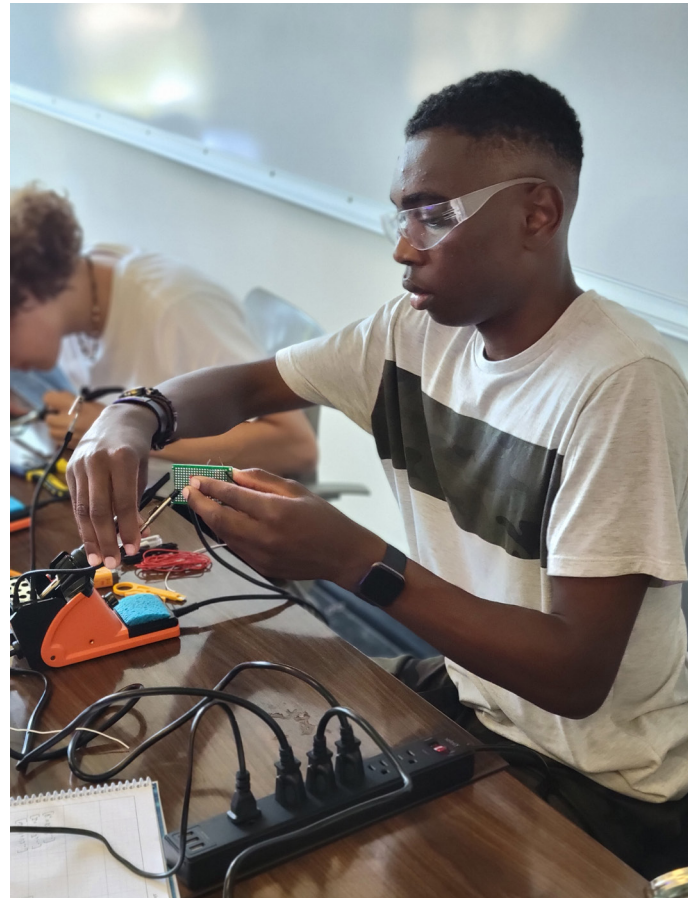
"Through our Giving Now program, onsemi is driving positivity forward by creating meaningful change for our planet and every community that we live and work in around the globe," said Tyler Lacey, board president for the ON Semiconductor Foundation, a Giving Now program at onsemi. "On behalf of the Foundation, we're proud to support the work of IEEE Foundation as we work toward making the world better together."

The grant will benefit TryEngineering's Online Semiconductor Education and Motivational Initiative. This initiative seeks to deliver professional development and curriculum resources to help pre-university teachers introduce their students (ages 10-14) to the semiconductor professions and industry. The initiative will not only introduce the field and industry, but also develop the foundational knowledge needed to pursue high school and college-level engineering studies.

"A skilled and diverse pipeline of workers is crucial to support plans for building semiconductor industry capacity globally," shares Jamie Moesch, IEEE Educational Activities Managing Director. "IEEE Educational Activities is excited to be able to partner with onsemi to provide educational resources for younger children to help them learn about the opportunities available in this growing industry."

The onsemi grant supports:

1. Video-based professional development courses to help educators develop foundational knowledge about semiconductors and the industry (provided in a dedicated section of the TryEngineering website).
2. Live teacher workshops hosted in onsemi communities, with recordings of these sessions made available globally.
3. Multi-modal lesson plans that build student background knowledge about semiconductors, the industry, and pathways to careers.



"IEEE has experts in all the fields involved in the manufacturing of semiconductors and we have many excellent educators in these fields," states Tom Coughlin, 2024 IEEE President. "We are proud to be a resource for STEM technical initiatives as well as training the next generation of semiconductor process technicians and engineers."

onsemi is supporting this initiative because the company has a commitment to building brighter futures through funding STEAM (Science, Technology, Engineering, Art, and Math) educational activities for underprivileged youth in underserved communities. ■



# TryEngineering: Fostering Next Generation of Innovators



TryEngineering has empowered educators to foster the next generation of technology innovators through STEM (science, technology, engineering and math) since 2006.

As the home for IEEE's pre-university educational resources, activities, and hands-on experiences that engage and inspire, TryEngineering serves as a hub of resources for IEEE volunteers and educators alike. Motivated by the vision of being an indispensable source for tools that foster interest in engineering and technology careers, TryEngineering has served web-based users in more than 100 countries on five continents. Over the years, the number of TryEngineering users has grown by as much as 25% each year, reaching over 700,000 unique platform users in the past year.

## Lesson Plans

The hallmark of TryEngineering is the more than 130 hands-on, engineering lesson plans at no cost to the user. Providing free web-based access to culturally relevant, developmentally appropriate and educationally sound instructional resources for teachers and community volunteers helps IEEE achieve its mission to advance technology for the benefit of humanity. Baked into the TryEngineering website is a translation tool so that users can share the lesson plan within their communities.

This vast collection of lesson plans features curated content in IEEE's fields of interest, as well as other engineering disciplines. Developed by teachers and content subject matter experts, each lesson plan targets specific age ranges and aligns with education standards to allow teachers and students to apply engineering principles in the classroom. For example, resources related to [Climate Change](#) were featured in support of IEEE's efforts to recognize this global crisis and help combat the effects through proactive education. Another example is the partnership with the SEMI Foundation, which highlights the resources on [semiconductors](#), a topic of great interest to IEEE members.

Other popular lesson plans accessed by volunteers and educators include:

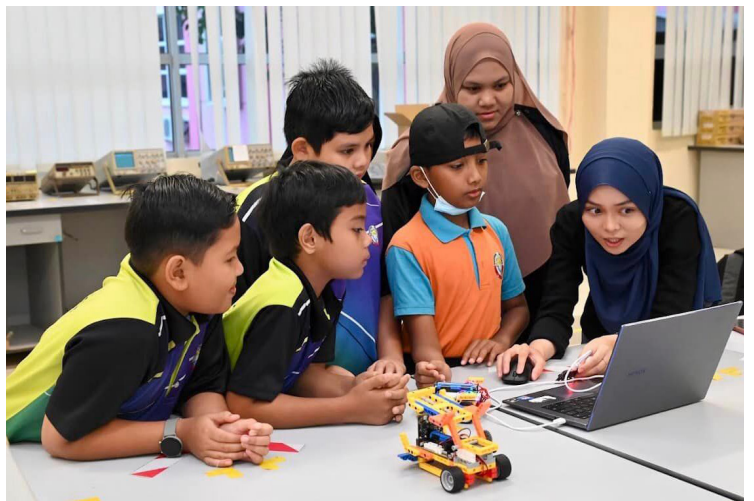
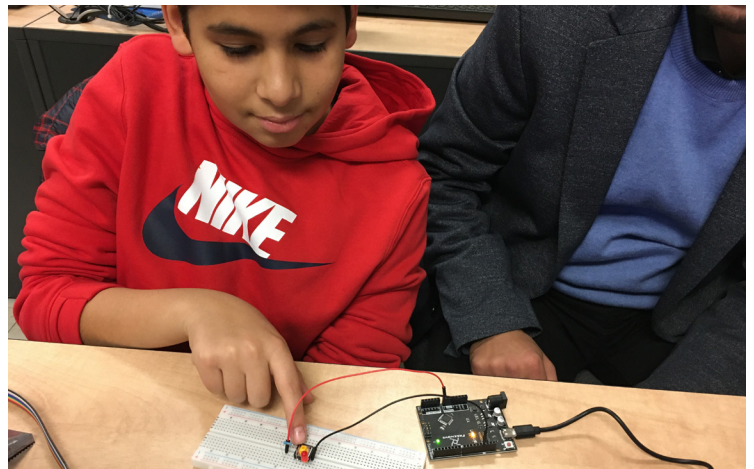
1. [Popsicle Bridge/Tall Tower Challenge](#)
2. [Toxic Popcorn Challenge](#)
3. [Working Wind Energy](#)

## Philanthropic Investment Helping to Grow Resources

Donor investment in TryEngineering is helping the program expand its reach and impact. For example, the content focused on semiconductors will be greatly expanded thanks to a generous grant from the [onsemi's Giving Now](#) Program (more on page 6) to develop new, interactive lessons for use in middle school classrooms worldwide, as well as professional development opportunities. Watch for these new lessons and resources for teachers in early 2025.

Through a generous donation from [Keysight Technologies](#), a number of lesson plans — including the extremely popular lesson, [Series & Parallel Circuits](#) — are being promoted through social media accounts and newsletters to bring new learning to teachers and STEM enthusiasts around the world. Additionally, in collaboration with Keysight Technologies, new lessons will be launched in 2024, which introduce younger students to concepts of circuits, and older students to machine learning.

Visit <https://tryengineering.org/> to discover the vast number of resources currently available at no cost to volunteers and educators. Want to help TryEngineering expand its pool of resources? Contact Eileen R. Heltzer, CFRE at [e.heltzer@ieee.org](mailto:e.heltzer@ieee.org), call her at +1.732.799.4431 or make a gift online at <https://www.ieeefoundation.org/SupportTryEngineering>. ■



*Implementing hands-on activities designed to help students learn.*

# Securing Brilliant Futures



IEEE scholarships and fellowships can play a vital role in a student's ability to pursue a higher education and secure their future. Through a portfolio of scholarships and fellowships awarded by IEEE's operating units, the futures of brilliant aspiring technical professionals are nurtured as they receive critically needed support across the breadth and depth of the fields of interest of IEEE.

In 2023, here are just a few of the scholarships IEEE was able to award thanks to donations to the IEEE Foundation.

## IEEE PES Scholarship Plus Initiative

Eighty-two students from 58 universities across the USA and Canada were selected by the [IEEE PES Scholarship Plus Initiative](#) (PES S+) as the [2023-24 class of IEEE PES Scholars](#). PES S+ recognizes high-achieving undergraduate students majoring in electrical engineering who have strong GPAs, distinctive extracurricular commitments and a desire to work in the power & energy sector. These IEEE PES Scholars receive a financial award, one year of IEEE PES Student membership and the opportunity to be mentored by leading professionals in the sector.

Meet three of these bright and passionate students who are already making an impact on the power and energy industry and discover what they have to say about the PES scholarship:



### Megan Dion

Stevens Institute of Technology  
2022/23 & 2023/24 Anne-Marie Sahazizian Scholar

*"I am honored to be selected as a recipient of the PES Scholarship Plus along with such a successful group of young electrical engineers. The most helpful aspect of the scholarship is the IEEE membership, which allows me to network with other electrical engineers in the power industry. Having the opportunity to create lasting connections with influential individuals in the field is of utmost importance to me."*



### Caleb Hardy

Iowa State University  
2022/23 & 2023/24 Hoveida Family Foundation Scholar

*"The IEEE Scholarship Plus Initiative has helped me not only by providing financial assistance for college but also by allowing me the opportunity to connect with other IEEE members. The application process was long and in-depth, but the questions asked aren't just an application, they really made me think about the answers and why I want to pursue a career in power."*



### Kalen Meyer

South Dakota State University  
2022/23 & 2023/24 G&W Scholar

*"This scholarship has been very beneficial to me financially. College is expensive, and anything helps so I am very appreciative for the generosity of the donors to help make this scholarship possible. This scholarship has also helped with paying for an IEEE membership which allows me to get more involved in the electrical engineering field on campus which gets me more involved."*

## IEEE Women in Engineering Scholarships

Each year, thanks to donations to the IEEE Foundation, WIE awards two undergraduate scholarships that aid in assuring the future of aspiring female technical professionals.

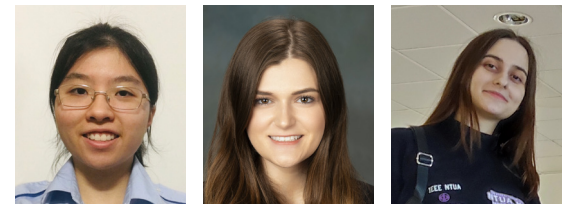
The first is the **IEEE Frances B. Hugle Engineering Scholarship**, which is awarded to up to two female IEEE student members [in memory of Frances B. Hugle](#). Hugle was a pioneering engineer who started several companies in Silicon Valley. The 2023 recipients of this prestigious scholarship are:

**Rachel Leong** - a fourth-year student majoring in electrical engineering at Stony Brook University with a specialization in Power and Energy Systems. Hailing from Brooklyn, NY, USA, she developed a curiosity for engineering watching her father build, repair, and tinker at home. She was inspired to pursue electrical engineering because it offered a challenging combination of math, physics, and programming.

**Rebecca M. House** - a senior studying electrical engineering at the University of Alabama at Birmingham (UAB). Following her graduation in December 2024, she will pursue a Masters in Business Administration through UAB's accelerated bachelor/masters program. Throughout her academic journey, her unwavering dedication and hard work earned her a 4.0 GPA.

The second scholarship awarded by WIE is the **IEEE WIE International Scholarship**, which is presented to a female IEEE WIE Student Member who has completed two years of undergraduate study in an engineering curriculum at an accredited university or college. The 2023 recipient of this prestigious scholarship is:

**Katerina Michou** - a third year engineering student at National Technical University of Athens (NTUA) in Greece with a focus on computer science and systems. She plans to go into Theoretical Computer Science graduate studies once she completes her Diploma and integrated Masters.



From left to right: Rachel Leong, Rebecca M. House and Katerina Michou





## IEEE Life Members Graduate Study Fellowship in Electrical Engineering

Established in 2000, the [IEEE Life Members Graduate Study Fellowship](#) in Electrical Engineering is administered by the IEEE Educational Activities Board. It carries a stipend of US\$10,000 per year and is supported by the IEEE Foundation's IEEE Life Members Fund. The 2023-24 recipient of this prestigious fellowship is:

**Chase Anderson** - a first-year graduate student in the Department of Electrical and Computer Engineering at the University of Minnesota Twin Cities, where he plans to explore new and better ways of capturing and storing energy and driving greater sustainability. Anderson, an IEEE student member and volunteer, is excited about the future and is grateful to IEEE for its work in supporting young voices like his. In the photo Tom Coughlin (left), 2024 IEEE President, congratulates Chase Anderson (right).

Motivated to help more students secure a brilliant future? Contact Eileen R. Heltzer, CFRE at [e.heltzer@ieee.org](mailto:e.heltzer@ieee.org), call her at +1.732.799.4431 or make a gift online at [www.ieeefoundation.org/donate](http://www.ieeefoundation.org/donate). ■

## Mark Your Calendar: 2024 IEEE Vision, Innovation and Challenges (VIC) Summit & Honors Ceremony will be in Boston this May!



The [2024 IEEE VIC Summit & Honors Ceremony](#), one of IEEE's premier annual events, will be held on Friday, 3 May 2024 at the Encore Boston Harbor in Boston, MA, USA.

It is a day full of excitement from start to finish. The Summit features a variety of science and engineering topics that focus on the future of innovations, predictions, and challenges to overcome in advancing technology as well as a chance to network and engage with world-renowned industry legends. It draws in individuals from all over the world, from young professionals to mid-high-level career professionals. Attendees will hear from today's leading experts, visionaries, and innovators.

The day culminates with the Honors Ceremony Gala – the evening celebration of renowned icons whose work has propelled major societal advances. The endeavors and achievements of these great minds are paving the way for future work for the betterment of humanity.

This year's IEEE Medal of Honor goes to Robert E. Kahn, widely known as one of the "fathers of the Internet." He is being recognized for "pioneering technical and leadership contributions in packet communication technologies and foundations of the Internet." Thanks to donor support, the IEEE Foundation has proudly supported the annual presentation of the IEEE Medal of Honor since 1979.

Kahn is one of the twenty-seven individuals being honored, eight of whom are women. Among the recipients is Tariq Durrani. Durrani is receiving the IEEE Haraden Pratt Award, also supported by the IEEE Foundation, "for inspired vision and steadfast leadership in improving global IEEE influence, member engagement and governance."



*2024 IEEE Medal of Honor recipient Robert E. Kahn. Kahn is President and CEO of the Corporation for National Research Initiatives, which he founded in 1986. The IEEE Medal of Honor is the highest recognition awarded by IEEE.*



*2024 IEEE Haraden Pratt Award recipient Tariq Durrani. Durrani is an IEEE Life Fellow and Research Professor at the University of Strathclyde, Glasgow, U.K.. The Pratt Award is one of two service awards bestowed by the IEEE Board of Directors.*

Ahead of the IEEE VIC Summit and Honors Ceremony, [Akamai Technologies](#), one of the world's leading companies in the Content Delivery Network field, will host and sponsor the Welcome Reception on Thursday, 2 May 2024 at their headquarters in Cambridge, MA, USA.

Learn more about this event, register, and view a complete list of the 2024 honorees at <https://corporate-awards.ieee.org/>. If you are unable to attend the event, you can tune into IEEE.tv and watch the VIC Summit & Honors Ceremony live via [IEEEtv](#). ■

# Empowerment through Enterprise



Just fifteen years ago, the notion of an IEEE group working to bring enterprise development to off-grid and remote communities was nascent. Today, IEEE Smart Village (ISV) stands as a beacon of hope across four continents, dedicated to uplifting communities through local entrepreneurship and education. Since its inception, ISV has touched the lives of over two million people, offering mentorship, educational opportunities and seed funding in regions where such support is scarce. With five regional working groups, ISV incubates local business models based on electrification and productive use of IEEE technology to establish scalable and self-sustaining solutions for long lasting impact. Some of the recent initiatives that exemplify ISV's mission include:

## Solar off-grid island: Smart Irrigation, India

At the forefront of all ISV initiatives lies self-sustainability. More than a decade ago, [SunMoksha Power Private Limited](#), a turnkey microgrid solution provider, and an engineering college in southeast India pioneered microgrid and smart irrigation technologies. Today, with the support of ISV, they are transforming Kudagaon, a river island in the state of Odisha, India, with SmartAQUAnet™, a multi-stage solar-pumped irrigation system, which the farmers will be taught to own, operate and maintain. This innovative project, supported by the IEEE Power & Energy Society, aims to revolutionize agricultural practices, doubling farmers' incomes within a year.

This enterprise example highlights two aspects of ISV's approach to engaging with entities for long lasting impact. First, ISV requires applicants to demonstrate community engagement: they must show clear understanding of the local needs, and community buy-in for the proposed technology and business solutions. Second, ISV's program support fosters invaluable peer-to-peer learning opportunities among and between ISV funded entities. SunMoksha's model of community engagement is now being shared with other ISV developers and the irrigation technology is being made available to other initiatives in India and around the globe.



*Solar-pump irrigation system, which will increase agricultural output and farmers' annual income.*

## Fleet of standalone Solar: Mini-grids in Nigeria

Established in 2015 and commencing electricity provision in 2017, [Darway Coast Nigeria, Ltd](#) currently operates 14 standalone solar mini-grids. Catering to more than 10,000 customers and benefiting

a population of 50,000 in Rivers State, Nigeria. Their commitment to sustainable energy drives their mission forward.

Throughout Darway's history, ISV has been instrumental in supporting its goal of replacing kerosene, candles and petrol or diesel generated electricity with non-polluting electricity for domestic and productive use. Using this approach, Darway has successfully powered several communities and 15 health centers that now have access to reliable and clean energy. As a result, more women have access to better healthcare, and are directly or indirectly employed, children have better care, students have reliable energy for studying, and more than 30 new businesses have sprung up.

Thanks to ISV's support, Darway has demonstrated its credibility as an enterprise worthy of securing funds from other sources. This will enable them to energize over 150,000 customers and empower over one million people in the next four to five years. Their partnership with ISV, made possible by donors and the IEEE Nuclear Plasma and Sciences, Industrial Applications, and Power & Energy Societies, is moving them forward to achieve this goal.

## Alaska Unlimited: A Unique Collaboration

Aniak is a native Alaskan village in the sparsely populated backcountry of Alaska, in one of the poorest regions in the United States. Electricity for 400 homes and businesses is generated locally using 1.2 million gallons of diesel annually. The Village is located 300 miles west of Anchorage where supply logistics are difficult, and grid connection is highly unreliable and expensive. Couple that with the fact that there is minimal sunshine for six winter months. Sadly, this description is not unique to Aniak, it is typical of many Alaska native habitations in this vast state.

Members of the ISV North America Working Group (NAWG) joined with [Alaska Unlimited](#) ("AU") in 2023 to seek cleaner, local alternatives for electricity generation. AU is an Alaska native woman led 501(c)(3) nonprofit, with a purpose to promote direct beneficial economic diversification, stability and growth that works with all levels of Government and society to improve socioeconomic conditions in rural Alaska. NAWG engages with local organizations such as AU to develop locally viable solutions. The joint analysis of the technical, jurisdictional, cultural and financial dimensions of implementing a solar photovoltaic system for supplying electricity during six summer months contributed to the local Alaska tribal corporation to take the development forward. This partnership represents an exciting evolution for ISV. It offers a new model for ISV wherein the focus is on providing technical expertise and mentorship. Next up with AU, a study of micro-nuclear deployment is planned pending the availability of financial support.

## Join the movement:


IEEE Smart Village invites you to be part of its transformative journey. To learn more about ISV's impactful initiatives and how you can contribute, visit <https://smartvillage.ieee.org>.

Interested in supporting IEEE Smart Village's mission? Contact Michael Deering, Sr. Development Officer, at [m.deering@ieee.org](mailto:m.deering@ieee.org), call him at +1.732.562.3915 or make a gift online at <https://www.ieeefoundation.org/SupportSmartVillage>. ■

# New IEEE-HKN Chapter Established thanks to “Chapter Support Grant”



*Dr. Ryan Bales (center), 2024 HKN Board President, presided over the 19 Oct 2023 installation ceremony of Nu Theta Chapter.*

 The Nu Theta Chapter of Purdue University Northwest wasted no time in taking advantage of all the support [IEEE Eta Kappa Nu](#) (HKN), IEEE’s honor society, provides to help Chapters get started. Just a few weeks after being installed as a new Chapter on 19 October 2023, five of its enthusiastic, newly inducted students and Lizhe Tan, Chapter Advisor, attended the [2023 IEEE-HKN Student Leadership Conference](#). There, they were inspired to learn how other Chapters had leveraged the [Chapter Support Grants](#) to advance their goals, prompting them to immediately apply for a grant to host a “3D Printing Fundamentals Workshop” to aid them in creating awareness on campus about their new Chapter. Two hands-on workshops were held that not only equipped students with valuable technical skills but also sparked a surge of creativity and interest in more advanced aspects of 3D printing, with several participants expressing enthusiasm for future workshops on complex projects like a DC motor design.

According to Anhviet Le, Nu Theta’s president, “The event was a huge success with many students expressing their new found interest in 3D designing and printing. Thanks to the grant our Chapter has now acquired enough filament to produce thousands of key decals to give away next year.”

Nu Theta’s IEEE-HKN Chapter Support Grant is an example of just one of the 23 awarded during 2023, which represents a 200% increase over 2022. Chapters from around the world utilized these funds in their work to enhance the HKN experience and serve their communities with activities such as induction banquets, tutoring program enhancements, technical and skill-building workshops, pre-U STEM outreach, mentoring and networking events, gaming tournaments, interChapter gatherings, faculty firesides, and more. Established in 2022 thanks to a gift from [Jo-Ann and John McDonald](#), a long-time IEEE-HKN member, IEEE Foundation Director and now HKN Board of Governors member, Chapter Grants are part of the overall Chapter Support Initiative, providing up to US\$250 to IEEE-HKN Chapters to enable them to deepen their work.

Sometimes, money alone is not enough to support a Chapter, especially ones through student or department turnover or the aftermath of the pandemic had become inactive or dormant. Therefore, a second component of the Chapter Support Initiative, the Chapter Success Program, allows Chapters to pursue a formal coaching relationship with HKN Board Members, volunteers, and

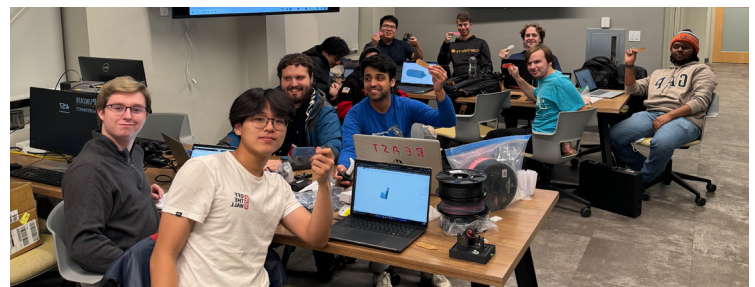
staff to enhance and energize operations or help a newly-installed Chapter get its start. Currently, there are 45 Chapters receiving in-depth mentorship and guidance coaching.

The 2023 results of the coaching component represents a 54% increase in the number of coaching hours compared to 2022, with 326 new members being inducted from coached chapters, and 5 coached Chapters earning 2022-2023 Key Chapter recognition. Although numbers are useful in evaluating effectiveness, they cannot convey the satisfaction and pride that our students — future leaders in their fields — receive from seeing their work pay off, or the leadership skills gained from conceptualizing and implementing activities that impact their communities.

IEEE-HKN’s goal is to continue this successful program in 2024 and beyond. Continuation is only possible with the support of donors, like Jo-Ann and John, who are willing to invest in the next generation of professionals. Interested in learning how you can help? Contact Michael Deering at [m.deering@ieee.org](mailto:m.deering@ieee.org), call him at +1.732.562.3915 or make a gift online at <https://www.ieeefoundation.org/SupportHKN>. ■



**Scan the QR code to watch the 2023 Chapter video to hear student stories on the results of their Chapter Grants.**



*Students at Purdue University Northwest attended the IEEE-HKN Nu Theta 3-D Printing Fundamentals Workshop made possible by an HKN Chapter Grant.*

# Working to Build a More Inclusive Future



With the goal of building a more inclusive future, the [HTB & SIGHT Taenzer Grant Program](#) launched in 2022 thanks to funding from the [IEEE Jon C. Taenzer Memorial Fund](#) of the IEEE Foundation. Operated by the IEEE Humanitarian Technologies Board (HTB), this US\$175,000 grant focuses on empowering IEEE members around the globe to advance assistive technologies and technological solutions for persons with disabilities and their communities, and supporting engineers in low-resource countries. Over the past two years, HTB funded seven projects within this area of focus and offered a webinar series covering topics that contribute to building a more inclusive future.

One project, which was funded in 2022 and 2023, enabled solar-powered electricity to an organization in Jakarta, Indonesia devoted to housing and nurturing children with disabilities. First, the IEEE team installed an on-grid rooftop photovoltaic power plant to reduce electricity costs, the cost savings were redirected to meet other needs of the children. The new power plant also provides uninterrupted electricity, even during local grid outages for forty people, primarily residents and therapists living in the area. In the second phase of work, the team installed additional panels and batteries to maximize the system's performance to further reduce the organization's grid electricity consumption and supply excess power to the grid during low use times. The surplus energy was also re-directed for nighttime compound lighting and the 24-hour operated hydrotherapy pump.

In Egypt, another project team is currently working to develop accessible, easy-to-use tools for children and adults who are blind or have vision impairment. Children will be able to use one tool, designed as a game, to engage with and learn more about their surrounding environment using both simple and affordable technology. Another phase of the project will provide a digital Braille calculator with Arabic audio feedback for young students, to supplement conventional math education that relies heavily on visual cues. The team will also implement a smart walking stick that engages the Arabic community and meets the needs of the Egyptian blind community as far as language, ease-of-use and affordability.

In addition to project funding, HTB leaders organized a series of webinars in 2023 to raise awareness of how technology can improve quality of life for people and how to advance technology for humanity. Webinars focused on diversity, equity, accessibility, and inclusion and strive to increase awareness of how individual and ubiquitous technological presence can provide quality of life for all.

During 2024, HTB will continue to offer funding and support so that IEEE members can apply their technical expertise within IEEE designated fields to challenges faced by local communities of persons with disabilities or local organizations that serve persons with disabilities. ■



*IEEE Team members delight in the completion of the on-grid roof top photovoltaic power plant in Jakarta, Indonesia.*

## About the IEEE Jon C. Taenzer Memorial Fund of the IEEE Foundation

The IEEE Foundation established the IEEE Jon C. Taenzer Fund in 2019 thanks to a generous bequest from the Estate of Jon C. Taenzer. Taenzer was a renowned research engineer, senior scientist, electronics engineering inventor/patent holder, author, and IEEE Life Senior Member prior to his passing in 2019. He designated his bequest to support engineers in developing countries and fund breakthroughs in aids for the disabled. The IEEE Foundation is proud to support IEEE programs and incentives that match this [IEEE Goldsmith Legacy League](#) member's philanthropic vision.



Scan the QR code to apply for funding, learn more about how to participate, and watch the webinars on demand.

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[ieeefoundation.org/monthly](https://ieeefoundation.org/monthly)



# “PROVING GROUND” by Kathy Kleiman Wins 2023 Middleton Award



*Proving Ground: The Untold Story of the Six Women Who Programmed the World's First Modern Computer* (2022, Grand Central Publishing, New York) was selected as the winner of the 2023 [William and Joyce Middleton Electrical Engineering History Award](#) by the IEEE History Committee. Written by Kathy Kleiman, Senior Fellow at American University and founder of the ENIAC Programmers Project, [Proving Ground](#) tells the story of the six pioneering women who were tasked with figuring out how to program the world's first general-purpose, programmable, all-electronic computer (ENIAC). Kleiman discovered these women while studying programming as an undergraduate at Harvard. That began her quest to tell their story and restore these women to their rightful place as technological revolutionaries.

Kleiman received the recognition from Saifur Rahman, 2023 IEEE President, during a presentation ceremony held during the November 2023 IEEE Meeting Series in Washington, DC, USA. She regaled attendees at the ceremony with stories, sharing glimpses into what the reader will discover inside the book.

Kleiman is the 9th recipient of the Middleton Award, which recognizes the author of a non-fiction book published within the previous three years in the history of an IEEE-related technology that both exemplifies exceptional scholarship and reaches beyond academic communities toward a broad public audience. The Award is made possible thanks to a bequest received from the namesakes, who are members of the **IEEE Goldsmith Legacy League**. ■



Saifur Rahman, 2023 IEEE President (right) presents Kathy Kleiman with her recognition.



## Happy 140<sup>th</sup> IEEE!

Since its founding in 1884, IEEE and its members and volunteers have helped shape the world of technology—from computing and standards to WiFi and cell phones—up to the latest AI applications of today. Throughout 2024, IEEE will be celebrating its 140th Anniversary. The celebration offers an incredible opportunity to recognize the great contributions of our IEEE members and volunteers around the world. The IEEE Foundation, IEEE's philanthropic partner, is proud to join the celebration. ■



Leaving an after-life gift to the IEEE Foundation will ensure your name lives on as part of the **IEEE Goldsmith Legacy League**.

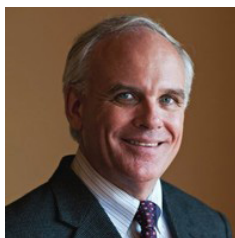
Members are *Forever Generous*.

Join the League: [ieeefoundation.org/goldsmith](https://ieeefoundation.org/goldsmith)

# A Wealth of Good: Navigating Donor Advised Fund Giving

Originally established in 1931 by the New York Community Trust and supported by John D. Rockefeller, the concept of the Donor-Advised Fund (often called DAF) has recently taken the United States nonprofit world by storm. According to data from the National Philanthropic Trust, 1,948,545 individual donor-advised accounts with more than US\$228,890,000 in assets are active in the United States.

As an IEEE supporter, you may have established a DAF in order to take advantage of the tax benefits and maximize your philanthropic impact. If so, IEEE and the IEEE Foundation (both IRS-recognized 501(c)3 organizations), and any of its donor-supported programs, can accept disbursements from most DAFs. You can find more information needed to process your gift at our DAF webpage: <https://www.ieeefoundation.org/DAF>.



[David Durocher, long-time IEEE volunteer and donor](#), recommends that people consider establishing a donor-advised fund for their charitable giving, which both maximizes taxable deductions while minimizing taxable income. "A donor-advised fund is a charitable investment account created for the sole purpose of

supporting charitable organizations you care about," shared Durocher. "When you contribute cash, securities, or other assets to a donor-advised fund, you're generally eligible to take an immediate tax deduction; those funds can then be reinvested in a tax-free growth account and you can self-direct grants to virtually any IRS-qualified public charity."

## Have you named a successor for your DAF?

An important part of a DAF owner's estate plan and charitable legacy is deciding where to direct the DAF upon their death. These directions are known as the '[DAF Succession Plan](#)' and involves informing the DAF sponsor how to distribute the remaining balance in the DAF upon the owner's (or owners') passing. The exact options available to a DAF owner vary and are determined by the DAF sponsor. The most common options related to designating a non-profit, like the IEEE Foundation, include:

- Naming the IEEE Foundation as successor advisor to the DAF
- Naming the IEEE Foundation as a full or partial beneficiary of the DAF
- Endowing the DAF to issue grants to the IEEE Foundation for as long as possible

If you have nominated the IEEE Foundation as a successor for your DAF, you are eligible to join the [IEEE Goldsmith Legacy League](#). Let the IEEE Foundation team know at [donate@ieee.org](mailto:donate@ieee.org) so we can thank you and arrange your recognition (even if you want to be anonymous).

[David \(Dave\) and Beverly Green](#) included the IEEE Foundation in their DAF Succession Plan and are *Forever Generous* members of the **IEEE Goldsmith Legacy League**. They said of the decision, "Like everyone with a DAF, we have made a decision to donate, over time, to causes we believe in, like the IEEE Foundation. When it came to designating successors to our DAF, it seemed obvious that we should name a charity to receive the funds rather than having someone else make decisions on directing the funds. The IEEE Foundation was an obvious choice for us. We support the Foundation, its mission and its programs. For us, it is the perfect choice for the remaining funds."



If you already have a DAF, consider how it can make an impact on the IEEE and IEEE Foundation donor-supported programs. If you are interested in establishing a DAF, contact your financial services provider. You can learn more about DAF Giving on the IEEE Foundation website at <https://www.ieeefoundation.org/DAF>.

*The information in this article is for educational purposes only and is not intended as legal, tax, or investment advice. If you are considering establishing or making a gift from a DAF, we highly recommend you consult with your own tax and legal advisors to determine the best options for you. ■*



# IEEE Foundation Happenings

## Looking to the Future

The IEEE Foundation is delighted to report that to hone our focus and drive to ever greater heights over the next 50 years, we updated our vision and mission statements.

**Updated Vision:** To be the heart of IEEE charitable giving and philanthropy.

**Updated Mission:** To expand the IEEE charitable body of work by inspiring philanthropic engagement that ignites a donor's innermost interests and values.



Scan the QR code to learn more

## Leading by Example

During the February 2024 IEEE Foundation Board of Directors meeting, four of our Directors, and their partners, were celebrated for their unwavering philanthropic commitment to IEEE and the IEEE Foundation.

John D. McDonald and his wife Jo-Ann were recognized for their elevation to the James Clerk Maxwell Level of the **IEEE Heritage Circle** for their cumulative giving of \$250,000+.

Nim Cheung was recognized for his elevation to the Hertha Ayrton Level of the **IEEE Heritage Circle** for his cumulative giving of \$25,000+.

Karen Panetta and her husband Jamie A. Heller and Sarah Rajala and her husband James Aanstoos were welcomed into the **IEEE Goldsmith Legacy League**, our elite estate planning recognition group.



Left to right: Ralph Ford, Nim Cheung, Karen Galuchie, Sarah Rajala, Karen Panetta and John McDonald.

## Promoting Philanthropy to Students & YPs

Marko Delimar, IEEE Foundation Secretary, shared the IEEE Foundation story with 120 students and young professionals during the *IEEE Region 8 Central European Student & Young Professional Congress* held from 30 November to 4 December 2023 at the Cracow University of Technology in Poland. The IEEE Foundation was a proud supporter of the event.



## Congratulations to our Directors



ACIEM (Association of Colombian Engineers) recognized Lorena Garcia in its February 2024 magazine as an outstanding woman in engineering.



M. Ryan Bales, 2024 IEEE-Eta Kappa Nu President, was recognized as Engineer of the Year in Government by the Georgia Society of Professional Engineers. ■

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## IEEE Foundation



As the philanthropic partner of IEEE, the IEEE Foundation is the heart of IEEE charitable giving. We expand the IEEE charitable body of work by inspiring philanthropic engagement that ignites a donor's innermost interests and values. Together, we deliver opportunity, innovation and impact, and advance the IEEE mission across the globe. We categorize the IEEE programs supported by your donations under five main pillars: Illuminate, Educate, Engage, Energize and Future, though their benefits span multiple categories.

The IEEE Foundation is a tax-exempt 501(c)(3) organization in the United States. Charitable contributions to the IEEE Foundation are tax-deductible to the fullest extent allowed by law in the United States. For other countries, please check with your local tax advisors.

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