



IEEE-Eta Kappa Nu

2023

Year in Review



 **IEEE**
Advancing Technology
for Humanity




Over 300 IEEE-HKN Students Convene at the University of Houston for its 2023 Student Leadership Conference

What happens when you bring together hundreds of bright, eager future engineers from around the world with industry, IEEE Societies, and academic leaders for three days? Collaboration, idea exchanges, mentorship, career and technical skill development, friendships, and much, much more! On 3-5 November 2023, 300+ attendees representing 55 Chapters gathered at the University of Houston for the IEEE-HKN Student Leadership Conference (SLC), representing a 25% increase in registrations over 2022. The SLC is HKN's largest annual gathering that takes place in the fall, offering a unique opportunity for its students to learn from practitioners that influence and inspire their career trajectories, build their professional networks, and strengthen their leadership skills. Seven graduate schools, 12 IEEE Technical Societies, and 20 businesses sponsored the conference. Generous funding from the Samueli Foundation provided each Chapter attending with a hotel room for students and their chapter advisors.

This year's conference was graciously hosted by Dr. Badri Roysam, Chair of the Department of Electrical and Computer Engineering at the University of Houston's Cullen College of Engineering, and featured 20 impactful sessions and engaging discussions, four workshops, four region meetings, and a robust recruitment fair featuring 35 companies, IEEE Societies, and graduate schools. Popular session topics included, "What they don't teach you in school," "Planning a Career Path for Jobs That Don't Exist—Yet," and "The Roadmap of 6G," which gave students insights on how to connect their academic journeys to their future career paths. A session track was also devoted to sharing best practices and ideas on how students can strengthen their Chapters' performance.

On Saturday night of the conference, an awards banquet was held, which included recognizing two [Eminent Members—Frank Chang and Ming Hsieh](#). Dr. Karen Panetta, Dean of Graduate Education for Tufts University's School of Engineering, received the [Sperry Award on behalf of Dr. Asad Madni](#). The evening also featured the announcement of Key Chapter recognition for 55 Chapters which showed that they implemented best practices over the course of the 2022-2023 academic year.

According to Cade Wilburn, a senior studying electrical engineering at the University of Kansas, Gamma Iota Chapter, who attended the conference, "I thought it was extremely well organized, and I got a lot out of the workshops I attended (CHIPS Act, Leading a Volunteer Organization, Career Takeaways, Networking for Introverts). This was the first conference I have been to in college, and it definitely set the bar high. I was also glad to have met with other Chapters within our region to gain insight about how to increase our presence on campus. I would highly recommend this conference to every HKN member. It was very clear to me from the beginning that a lot of time and effort was put into planning this conference, and you can tell that the top priority was to pack as much value into the weekend as possible."

The energy and inspiration gained from the conference will be felt for a long time to come. Please check out the [video](#) and [photos](#) from the conference. We are already looking forward to 2024! 



2023, A Year of Unprecedented Growth and Opportunity

From double-digit increases in conference attendance to a strengthened graduate student/alumni mentoring program and an exponential surge in inducted professional members, the year 2023 will be remembered as one where we truly began to operationalize what it means to be HKN for life. New partnerships with IEEE societies and industry provided our students with glimpses into the real-world applications of the latest technologies, pointing them to new career possibilities. Generous giving from our donors made it possible to lower any barriers to taking advantage of these opportunities for our students. We invite you to read about just some of our 2023 successes made possible by the contributions of our dedicated volunteers and the visionary leadership of our Board of Governors.



Region 9 newly-inducted HKN members and ceremony attendees

2023 saw a record number of new professional members inducted into the Eta Chapter of the Board of Governors!

With six in-person ceremonies held around the world and three virtual ceremonies, HKN welcomed 92 new professional members into the Eta Chapter, an increase of 240% over the number of people inducted last year. These professionals were nominated for induction by HKN members because they embody the core values of Eta Kappa Nu, namely outstanding scholarship, impeccable character, and a dedication to lifelong learning and service. They have demonstrated significant leadership and service during their careers and will contribute their dedication and personal integrity by sharing their professional skills and personal time. According to the chair of the Professional and Graduate Members Committee, Bala Prasanna, "Looking into the pool of abundant IEEE-inspired connections and the strategic recruitment process that seeks to identify nominees excelling in scholastic, character, and attitude abilities, I feel we have assembled a community of exceptional professionals for our HKN honor society that celebrates and acknowledges the outstanding achievements of students, fostering a culture of excellence and inspiration."


Many of the newly inducted members are dedicating their considerable talents to HKN by jumping right into service.

For example, new Eta member Jennifer Franco, who will be serving as the 2024 board secretary, stated, "Personally, I have always wanted to do something in my life where I can give back to others, even if all I can offer is my time. Being inducted lets me know that I am achieving part of that goal and will continue to motivate me to do more."

In-person induction ceremonies were held throughout the year and throughout the world at:

- Region 9 Meeting, Panama City, Panama
- SoutheastCon, Orlando, FL
- Regions 1 & 2 Meeting, Valley Forge, PA
- IEEE June Meeting Series, Chicago, IL
- IEEE Sections Congress, Ottawa, Canada
- IEEE November Meeting Series, Washington, DC

In addition, three virtual induction ceremonies were held to accommodate those members who were unable to attend an in-person one. According to Franco, "The ceremony was really great; all the members and inductees have such great energy, and it's contagious."

Induction ceremonies are being planned throughout 2024. If you know a professional who embodies the attributes of HKN (scholarship, character, and attitude), you can nominate him or her for the Eta Chapter [here](#). With your help, 2024 will be another successful year for the Eta Chapter of HKN! 

Outstanding HKN Engineers Elevated to Eminent Members

Announced in [August 2023](#), three outstanding HKN members, Frank Chang, Ming Hsieh, and Sandra Magnus, were elevated to Eminent Members, HKN's highest honor, in recognition for their contributions to the advancement of technology in service to humanity. Frank Chang received this honor for being responsible for many breakthroughs in cellular phone technology, including the high linearity and efficiency of GaAs heterojunction bipolar transistors

(HBT) and BiFET power amplifiers (PAs), which have been the most prevalent IC technology to dominate worldwide cell phone transmitters over the past three decades. Ming Hsieh was nominated for his major technical contributions to biometrics and genetic testing solutions. Dr. Sandra H. Magnus, an HKN professional member of Gamma Theta since 2011, was recognized for her contributions as the deputy director for engineering within the Office of the Under Secretary of Defense for Research and Engineering.

Frank Chang and Ming Hsieh elected to receive this honor at the awards and recognition ceremony at this year's Student Leadership Conference. Dr. Chang took the opportunity to inspire students by relating how he and his team developed the technology currently used in cell phones around the world. Dr. Magnus was bestowed Eminent Member status at the IEEE November Meeting Series as part of the Educational Activities Awards Ceremony.



2023 Eminent Member Ming Hsieh addressing students at the Student Leadership Conference.

Second Round of Graduate/Alumni Mentoring builds on last year's success

With the goal of giving graduate students critical career, professional, and personal advice to augment their degree, HKN's first professional-to-student mentoring program sustained its momentum this year with 7 mentors and 13 mentees across four continents (North America, Europe, Asia, and Africa). Seeing the value of the program as filling a critical need, we were fortunate to have three returning mentors: Ryan Bales, John McDonald, and Jenny Marley. Joseph Greene, the chair of the Graduate Student Subcommittee, has been leading the initiative on the program.

Feedback on the program from last year shows not only impact and growth on the part of mentees but also on the mentors. According to one mentor, "As a mentor, I have greatly enjoyed the time I've spent with my mentees. Our conversations have given me new perspectives on some of my own experiences and have made me more appreciative of my own career trajectory. I have also gained insight into some common concerns and interests of recent hires at my own company. Articulating my thoughts in response to some of my mentees' questions has made me more cognizant of my positions on related issues in the workplace." For mentees, being able to meet with someone who understands the challenges of graduate

school on a regular basis is invaluable. One mentee put it this way, "Having someone who has been through the Ph.D. process to talk to helps calm my anxiety about my own Ph.D. program. [My mentor] is also helping me be a better leader by getting in the right mind frame."



Mentors and Mentees meeting up at the 2023 Student Leadership Conference

Generally, mentees and mentors agree upon a meeting schedule and sign a mentoring agreement that outlines the logistics and expectations of the mentoring relationship. Most mentees and mentors meet every other week for an hour. If you would like to make an impact in a graduate student's life, are also open to learning about their perspectives, and are willing to devote 2-4 hours per month of your time, please [reach out to us](#) to see if there is still space for the next round of mentoring or for future ones.

Alumni Reconnect from Coast-to-Coast

HKN Alumni Receptions offer a chance for HKN alumni to share memories, meet with current students, and network with each other. Such gatherings have been growing in popularity and frequency as our alumni ranks swell to over 40,000. As an honor society that is over 120 years old, the receptions also offer a way for alumni to learn about HKN's current offerings and opportunities to be a part of its work.

Last year, HKN held three receptions:

- 14 April 2023 at SouthEastCon, Orlando, FL
- 2 October 2023 at Qualcomm, San Diego, CA
- 18 October 2023 at Frontiers In Education Conference, College Station, TX

Over 80 alums attended one of the three ceremonies, and we look forward to hosting even more in the coming year. We were very fortunate to have HKN Eminent Members Marty Cooper (a father of the cell phone) and Patrick



Group photo from the October 2, 2023 Alumni Reception at Qualcomm

Nunally (the father of the arbitron rating system) with us to cut the cake in San Diego!

If you are interested in hosting or attending an upcoming HKN Alumni Reception, contact Nancy Ostin at n.ostin@ieee.org or complete the [Alumni Reconnect Form](#) to be kept abreast of alumni news and events.

Funding for our alumni receptions was provided by a generous donation from Dr. and Mrs. Richard Gowen.

IEEE-HKN Website and THE BRIDGE Magazine Win APEX Awards

The newly designed website on the WordPress platform went from its launch in 2022 to becoming an APEX Award



winner in 2023. The website (hkn.org) allows staff and volunteers to quickly update content to keep all HKN's varied audiences abreast of the latest news and resources. The functionality of the website makes it possible to manage all aspects of HKN, including ordering from its online store, reconnecting with alumni, and chapter management, resulting in the website being the hub of HKN's activities around the world, creating community, and contributing to its unique identity. Kudos to Katie Brinker, Chair of the Public Relations and Communication Committee, and Jason Hui, Chair of the Website Subcommittee, who led the efforts of the redesign and implementation!

THE BRIDGE magazine wins an APEX Grand Award for Publication Excellence in 2023. The October 2022 issue of THE BRIDGE was recognized for its special issue on engineering space exploration. Congratulations to the issue guest editor, Sean Bentley, and the 2022 Co-Editors-in-Chief, Sahra Sedigh Sarvestani and Steve E. Watkins. Less than ten percent of the over 1100 entries were recognized with Grand Award status. It is the 10th year that THE BRIDGE and IEEE-HKN have been recognized.

HKN Installs Two New Chapters



Nu Theta Installation Ceremony

IEEE-Eta Kappa Nu has expanded its global reach by installing two new Chapters this fall: Nu Eta at the Sri Sairam Engineering College, Chennai, India, and Nu Theta Chapter at Purdue University Northwest. 2023 IEEE-HKN President, Sampathkumar Veeraraghavan, presided over the Nu Eta Chapter installation on 29 September 2023, where 11 students and two professional members took the

oath to uphold HKN's tenets of scholarship, character, and attitude. Over 1,000 people attended the ceremony, which was a part of the National Conclave. The Nu Theta Chapter is the first one in the state of Tamil Nadu.

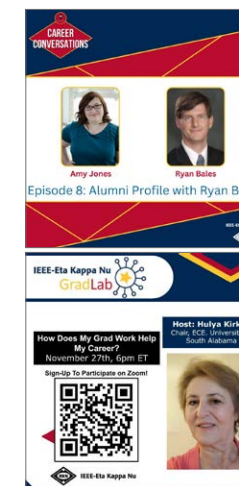
2023 IEEE-HKN President-elect, Ryan Bales, conducted the installation ceremony for the Nu Theta Chapter at Purdue University Northwest on 19 October 2023, in Hammond, Indiana, where 13 students were inducted into the 119-year-old honor society. The new Chapter jumped right into the HKN family, sending a delegation of seven to the recent HKN Student Leadership Conference in Houston, Texas.

Three more new Chapters have been approved by the HKN Board of Governors and will be installed in 2024.

Growing HKN Social Media Presence Provides Platforms to Broaden Reach!

Social media is an important means of connecting and growing our network and amplifying the great work of HKN. Due to the extraordinary efforts of Katie Brinker, chair of the Public Relations and Communications Committee, our social media followers grew across our platforms by double digits, with LinkedIn increasing by 41% (2511), Instagram increasing by 27% (862), and YouTube by 23% (408). Everyone can help in these efforts in 2024 by liking and sharing content. Our social media supports all HKN initiatives—awards, conferences, chapter news, alumni, etc. – and tells stories of our impact in communities around the world.

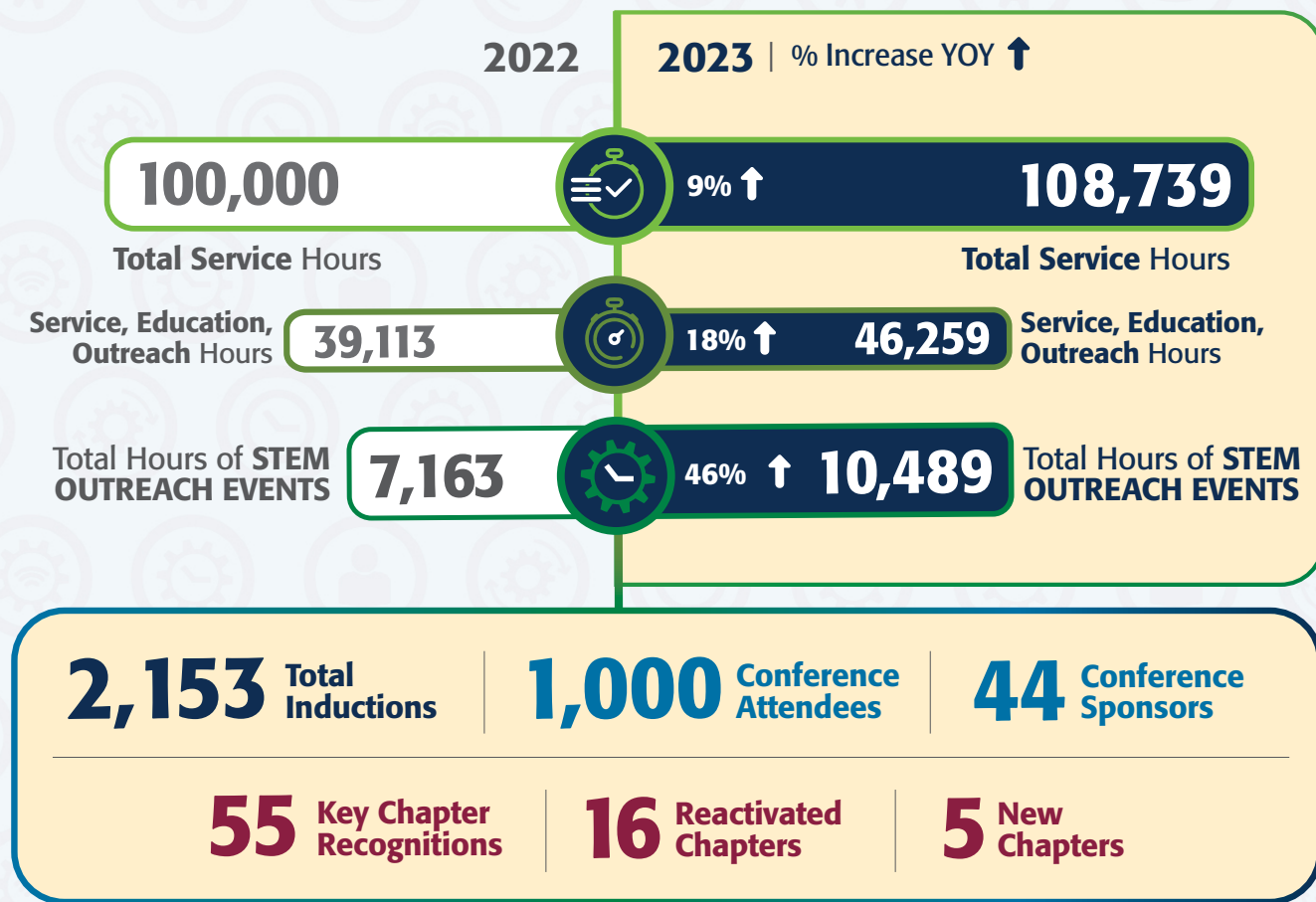
Part of the success of our social media is the creation of relevant and interesting content through the production of podcast episodes and the posting of sessions from our virtual conferences, Pathways to Industry and TechX. The Young Alumni Committee led by HKN Board Member, Amy Jones, produced a timely and well-received [Career Conversations](#) episode on the importance of mental health with Haley DeGreve, founder of the mental health awareness and suicide prevention non-profit, The Gray Matters Collective, about mental health in our personal lives and



in the workplace. In addition, the committee also produced a podcast featuring Ryan Bales, 2024 IEEE-HKN President.

Joe Greene, Chair of the Graduate Student Subcommittee, produced several episodes of the popular [GradLab](#) podcast that featured Dr. Hulya Kirkici, Chair of the University of South Alabama ECE department and HKN Board Member, who spoke about tackling common fears and anxieties about conducting research as a graduate student called, "What's the Big Picture

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IEEE-HKN Chapter Support Initiative Builds on Success in 2023!

Started in 2022 with a generous donation from John McDonald, Beta Chapter, and his wife, Jo-Ann, the IEEE-HKN Chapter Support Initiative was designed to create and enhance the resources, training, and programs every chapter needs to reach their full potential. Through the initiative, Chapters may apply for small grants to support community service, academic, or Chapter-building activities as well as receive coaching from HKN volunteers and staff. In the initial year of the program, eight grants were awarded, and 20 Chapters initiated formal coaching relationships. 2023 saw an increase in the number of grant recipients, the continuation of the coaching relationships, as well as the number of Chapters who started new coaching relationships – 22 grants were awarded and 21 Chapters entered coaching.

The results of these efforts have been impressive:

- Chapters coached in 2022 reported a combined total of over 2,600 hours of activity during the 2022-2023 reporting year. This is a 240% increase over their 2021-2022 reporting year numbers
- The number of coached Chapters reporting activities doubled year-over-year
- A “Passing the Gavel” Ceremony was piloted for the 2024 official launch to support successful officer transitions

Another outcome of the program has been its impact on inductions:

- 19 Chapters held one or more induction ceremony post-coaching meetings
- 326 new members (students and professionals) were inducted into Chapters involved in 2022 and 2023 coaching
- 2023 saw a 155% increase in the number of inductees for Chapters coached in 2022

While the numbers from this program show its impact, the success of this program is best articulated by those students who have benefited from it, as seen in this video.

If you are interested in volunteering to support Chapters at all levels, your help is needed to:

- review inquiries from universities wanting to start new chapters
- join coaching meetings
- help with post-meeting follow-up and MORE

Contributions to the Chapter Support Fund make all this important work possible, and we are greatly appreciative of any donation so that we can keep the momentum going in 2024!

in Graduate Research.” Dr. Kirkici returned for a second webinar entitled, “Demystifying Academia” that featured key lessons and perspectives that help students recognize their accomplishments and contextualize their contributions as they transition into industry or continue in academia.

2023 HKN Awardees at the IEEE November Meeting Series

The IEEE-HKN Awards were presented on Friday, 17 November 2023, in Washington, DC, as part of the [IEEE Educational Activities Awards Banquet](#), presided over by Rabab Ward, Vice President of IEEE Educational Activities. The following honorees received plaques and much-deserved gratitude for their inspiring contributions:

IEEE-HKN Asad M. Madni Outstanding Technical Achievement and Excellence Award: *Dr. Karen Ann Panetta*, 2019 IEEE-HKN President and Dean for Graduate Education, Tufts School of Engineering. She received this honor for her development of high-impact computer vision and simulation algorithms and for leadership in programs advancing female participation in STEM.

IEEE-HKN Distinguished Service Award: *John DeGraw*, 2018-2020 HKN Board of Governors Member, in recognition of his over 4 decades of service to Eta Kappa Nu in support of alumni and student award activities.

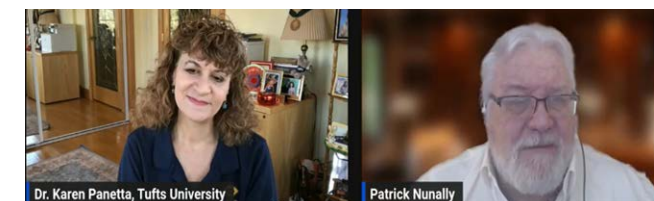
C. Holmes MacDonald Outstanding Teaching Award: *Dr. Colleen Bailey*, Assistant Professor of Electrical Engineering, College of Engineering, University of North Texas. Bailey was honored for her impact on electrical engineering undergraduate education and STEM outreach.

Outstanding Young Professional Award: *Dr. DongHyun (Bill) Kim*, Assistant Professor of Electrical and Computer Engineering, Missouri University of Science and Technology, in recognition of his outstanding contributions toward the characterization and modeling of dielectric materials and via structures to ensure signal integrity and reduce crosstalk levels in high-speed digital channels.

Dr. Sandra Magnus also received her elevation to Eminent Member status at the event. Additional photos of the ceremony can be found [here](#). The 2024 IEEE-HKN Awards cycle is now underway. If you know of a colleague who is making outstanding contributions and should be considered for one of the above awards, please learn more and submit a nomination [here](#) before 6 May 2024.

HKN Conferences Attract Over 1,000 Participants

HKN hosted three conferences in 2023: Pathways to Industry, TechX, and the HKN Student Leadership Conference, which drew a record number of participants. Each conference had a different focus, with Pathways to Industry, held in February 2023, being devoted to helping students and young professionals have the professional



Screenshot from Patrick Nunally's keynote address at the virtual Pathways to Industry Conference

skills they need to secure internships and full-time jobs. With engaging sessions such as “How to Maximize Your LinkedIn Profile” and keynotes by luminary HKN engineers, Patrick Nunally and Tom Coughlin, the virtual conference was jam-packed with practical information as well as inspiring messages. HKN TechX followed in April, with a focus on sharpening technical skills needed for the future. HKN conferences offer great opportunities to bring together academic leaders, industry professionals, and IEEE Society partners to share with students and young professionals advice and opportunities to help them succeed. Read about this year's SLC on [page 25](#).

New Asad, Gowhartaj, and Jamal Madni Family Scholarship Announced



Thanks to the generosity of the Madni Family, a new [scholarship](#) was established that will support three qualified undergraduate student recipients and up to two qualified graduate student recipients pursuing a degree in the fields represented by IEEE-HKN and who are members of an active IEEE-HKN Chapter. The scholarship is another manifestation of the Madni family's commitment to education, having already established a scholarship at UCLA. Asad Madni is an Eminent Member of HKN and winner of the Vladimir Karapetoff Outstanding Technical Achievement Award in recognition of his illustrious career as the president of BEI Technologies, where he led the development and commercialization of intelligent sensors, systems, and instrumentation, including the control system for the Hubble Space Telescope's Star Selector. To qualify for the Madni Scholarship, a student must be a U.S. citizen enrolled as a full-time student in electrical engineering or related fields at an accredited U.S. university or college. Further qualifications include being an inducted member of IEEE-HKN, and having completed his or her third year in an IEEE-HKN field of interest. The award will be \$1,000 per student to cover school expenses such as tuition, books, and fees. The scholarship was launched at the HKN Student Leadership Conference in November. Applications will be accepted until 1 April 2024, and can be submitted [here](#).



IEEE-Eta Kappa Nu



Thank you to all our HKN students, IEEE-HKN Board of Governors and volunteers, sponsors, and donors for helping HKN to achieve its mission of supporting promising young engineers through every step of their professional journeys. We hope that you will join us in our efforts.

Scholarship ♦ Character ♦ Attitude



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