

2020 IEEE-USA ANNUAL REPORT

INNOVATING OUR WAY THROUGH ADVERSITY



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LETTER FROM PRESIDENT JAMES CONRAD



I outlined my presidential goals to the IEEE-USA Board at our first meeting in February, focusing on:

- Serving the members through engagement at the local and national level
- Identifying and implementing new revenue streams needed to sustain IEEE-USA
- Increasing awareness of IEEE-USA's "brand" at the IEEE Board level, and among the U.S. members
- Reviewing our strategic and operational plans to ensure we're aligned with IEEE, and well positioned to deal with the financial challenges of the next five years

In March, the COVID-19 pandemic struck home, forcing us to cancel many of our planned events, and pivot our efforts to serve the members, by creating an all virtual mode of working. I am pleased that we managed to do so with significant success, including elevated levels of volunteer and member engagement, and substantial increases in members utilizing IEEE-USA's member resources. Specific highlights of our efforts appear in the balance of this Annual Report.

Raising awareness of the IEEE-USA brand was another one of my priorities. Despite the limits on travel—we were able to hold a number of virtual briefings, in conjunction with U.S. regional meetings. These briefings included special sessions for Regions 1 and 3. The *IEEE Member Benefits Bulletin* newsletter regularly featured and highlighted IEEE-USA products and services. And in December, we unveiled an outstanding series of short videos promoting IEEE-USA and IEEE. We placed these promotional videos in five major media markets, reaching millions of eyes during prime time. This video marketing effort was well-received by our partners throughout IEEE, who are joining us to continue this outreach effort in 2021.

COVID and declining U.S. membership reinforced IEEE-USA's need to assess its financial challenges, and update its path toward continued future success. I am pleased to report that IEEE-USA's Board of Directors approved a comprehensive update of IEEE-USA's Strategic Plan at its June meeting, followed by endorsement of the updated Operations Plan for 2021. I was also pleased to co-host a special joint retreat of the 2020 and 2021 IEEE-USA Board of Directors in December—to review our five-year prioritization plan—to set in motion efforts to identify new revenue sources and new operating models that my successor, Kate Duncan, will continue in 2021.

In closing, 2020 was a year of great challenges that also created great opportunities. I am proud to report that IEEE-USA, its strong volunteer leadership, and its outstanding professional staff, rose together to meet the occasion.

A handwritten signature in black ink that reads "James M. Conrad". The signature is fluid and cursive, with the first name "James" and last name "Conrad" being more prominent than the middle initial "M".

James Conrad
2020 IEEE-USA President



INTRODUCTION

The Institute of Electrical and Electronics Engineers—United States of America (IEEE-USA) is a major organizational unit of the IEEE that traces its origins to the 1973 formation of IEEE's U.S. Activities Committee.

IEEE-USA was created to advance the public good and promote the careers and public policy interests of the nearly 160,000 engineers, scientists and allied professionals who are U.S. members of the IEEE.

Led by a volunteer board of directors, a member-elected IEEE-USA President chairs IEEE-USA. IEEE-USA's operations are supported by its professional staff (based in Washington, D.C.), and by more than 650 active IEEE member-volunteers.

This Annual Report documents our collective efforts to support our members, advance the engineering profession, and serve the public interest during the 2020 calendar year.

MISSION AND PURPOSE

As provided in IEEE's By-Laws, IEEE-USA's mission is to “recommend policies and implement programs specifically intended to serve and benefit the members, engineering professionals, and the general public in the United States. IEEE-USA shall be the organizational unit that represents the professional interests of the IEEE before U.S. governmental bodies. It shall also be responsible for coordinating and reporting, under federal disclosure laws, all official communications with government.”

This mission is further described by IEEE-USA Policy 1.2, which outlines IEEE-USA's responsibility to:

- **PROMOTE** the professional, social, economic and ethical status of electrical, electronics, communications and computer engineering, as well as computer science and allied branches of engineering, and the related arts, sciences and technologies, and related technical professionals in the United States, with a special emphasis on U.S. IEEE members
- **PROVIDE** technical advice and policy perspectives to U.S. policymakers at all levels, in the areas of electrotechnology and information technology, to improve the quality of life, and for the benefit of the public
- **WORK** with U.S. policymakers and regulators to enhance the careers, and improve the working conditions, of U.S. engineers, and other technical professionals
- **DEVELOP** products and services that support the lifelong professional development and career vitality needs of U.S. IEEE members, and other technical professionals
- **SUPPORT** communication with and among U.S. IEEE members, potential members, their employers, and the public about IEEE-USA, and the professional issues that affect its members and their professions
- **ENHANCE** public awareness and understanding of electrical, electronics and computer engineering, and related technical fields

FINANCES

IEEE-USA operates on an annual budget, approved by IEEE's Board of Directors. IEEE-USA's 2020 operations budget was \$5.11 million. This budget supported the programs, volunteer activities and professional staff highlighted in this annual report.



2020 IEEE-USA Treasurer
Scott Tamashiro

A mandatory assessment of IEEE's U.S. Higher Grade members primarily funds IEEE-USA's activities. The 2020 assessment was fixed at \$47, with no allowance for inflation. This assessment generated approximately 97 percent of IEEE-USA's operating revenues for the year.

Despite a revenue shortfall of over \$250,000—due to IEEE's accelerating U.S. membership decline—efficient management, combined with the savings from COVID-19's impact on travel and meeting expenses, allowed for the IEEE-USA Board to approve unbudgeted investments in local professional activities and future government fellowships. IEEE-USA still finished Fiscal Year 2020 with an operational surplus of \$235.4K, or nearly \$100,000 above its 2.5% net surplus budget target, and before adjustments for reserve earnings. That, plus the strong market return on IEEE-USA's reserve investments, brought IEEE-USA's year-end surplus to \$754.2K—increasing IEEE-USA's financial reserves to \$4.7M.

In addition to IEEE-USA's operating budget, tax-deductible member contributions to the IEEE-USA Fund, the IEEE-USA E-Week Fund, the MOVE Disaster Relief Fund, and the IEEE-USA Awards Fund provided seed money used to support our disaster recovery efforts, as well as new career and professional programs and services. For information on how you can contribute to support MOVE, or other IEEE-USA's programs, see: <https://ieeeusa.org/giving-opportunities/>.

IEEE-USA's 2020 Treasurer was Scott Tamashiro.

HELPING MEMBERS DURING THE COVID-19 PANDEMIC

The Coronavirus (COVID-19) pandemic had a significant impact, both positive and negative, on IEEE-USA's operations in 2020.

- IEEE-USA's in-person annual Engineering Societies Congressional Visits Day (CVD), the 2020 EVO Leadership Conference(s), the Washington Internship for Students of Engineering program, the annual Consultants Workshop, and several IEEE-USA technical conferences, were cancelled, or postponed to 2021.
- IEEE-USA's Board of Directors and committees met electronically.
- Travel restrictions forced IEEE-USA to virtualize its grassroots advocacy. Local member engagements were limited.
- IEEE's U.S. membership declined by 5.5% in August, the end of the 2020 membership year.

Some of the positive outcomes and highlights of IEEE-USA efforts to serve members during the COVID-19 pandemic include:

- Travel restrictions resulted in substantial financial savings that allowed IEEE-USA to offset shortfalls in assessment revenue resulting from the U.S. membership decline.
- 2020 saw a major increase in U.S. IEEE member engagement with IEEE-USA's digital and virtual career and professional offerings.
- Beginning in the second quarter, IEEE-USA shifted its career webinars and Washington policy briefings from Webex webinar sessions to live streaming via Facebook and YouTube. By using the platforms our members use, especially younger members, IEEE-USA was able to widely promote our offerings and enable members to access both live and recorded versions of speakers and events. We increased the frequency of our offerings, and we also selected topics and speakers relevant to the challenges facing our members working in the COVID environment.
- IEEE-USA's *InSight* editors pivoted the journal to feature articles covering the COVID/shelter-in-place challenges—including such topics as security in remote working environments, crowdsourcing COVID-19 solutions, staying technically current, the effect of the pandemic on PE exams, and more.
- At the end of March, IEEE-USA began offering e-books to all IEEE members for free. The response was outstanding with 21,133 e-books and 6,717 audiobooks downloaded in just the first 30 days, an increase of over five-fold.



- Another important aspect of IEEE-USA's response to the pandemic challenge was pivoting our products and services toward helping technology professionals successfully transition to the new pandemic work landscape. Telework, networking, job hunting and social media were just a few of the many featured topics addressed.
- At the same time, IEEE-USA launched a *Here to Help* member communications campaign. In addition, we built a landing page (<https://ieeeusa.org/help>) to aggregate the targeted content and resources we provided, to assist members during the COVID-19 crisis.
- Two of our Washington Update webinars (27 March and 3 April) focused specifically on COVID-19 legislation, as well as COVID assistance for individuals and small businesses.
- In just the first month of the COVID pivot, IEEE-USA measured significant increases in member online engagement with IEEE-USA. One indicator was the number of users accessing IEEE-USA's website for information and resources, where traffic was up 179% from April 2019. The number of page views increased by more than 550% over that same period.
- IEEE-USA engagement with members also benefited from heavy promotion of IEEE-USA products and services in the *IEEE Member Benefits Bulletin*, distributed weekly between March and September, before resuming its previous monthly schedule. During the weekly run, IEEE-USA submitted-content ranked within the top five, most-clicked items in 22 out of 24 weeks, including several weeks capturing the #1 spot.

We ended the year proud with what we had accomplished in a very challenging operating environment, energized by the high levels of member engagement and response, and well positioned for 2021.

Chronological highlights for each of our major program areas are highlighted in the next section.

SHAPING PUBLIC POLICY

IEEE-USA's public policy program serves a three-fold purpose. We proactively advocate for new laws and regulations that enhance the engineering profession, and the role that technology can play in advancing quality of life and our national standard of living. We work to educate policymakers about the needs of our technology-based infrastructure and workforce, as well as the potential uses, limits and social implications of new and emerging technology. We also inform and engage our U.S. members on important public policy issues, helping them become effective advocates for their interests, and for the needs of the profession.

In each of these areas, we celebrated successes and saw notable progress during 2020. The following are highlights of these efforts:



SCIENCE IS US INITIATIVE CAMPAIGN KICK-OFF

IEEE-USA co-chairs the steering committee for the Science is US Initiative,

a Foundation-funded collaboration of science and engineering societies, higher education, labor and industry groups formed to advance public awareness that STEM is fundamental to American success. The Coalition's strategy is to engage local groups in states whose economies are not heavily STEM-based, to help raise public understanding of the links between STEM and their local economies.

On 28 January, Science Is Us released a study on *STEM and the American Workforce*. The study found that 67 percent of U.S. jobs and 69 percent of the nation's gross domestic product (GDP) require science, technology, engineering and mathematics (STEM) skills, and account for \$2.3 trillion, or 67%, of federal tax revenue annually. FTI Consulting conducted the study,

with grants from the David and Lucile Packard Foundation and the Rita Allen Foundation.

The campaign's state outreach kicked off in October 2020, with a public workshop featuring participants from the University of Maine, Central Maine Power, the Maine Department of Economic Development, Bath Iron Works, and other Maine-based manufacturing companies; along with Dr. Walter Rawle, chair of the IEEE Maine Section. The CBS affiliate in Bangor, Maine, covered the Maine event.

Planning was also completed for an active schedule of 2021 activities, including events in Iowa (Vaccine Hesitancy), Maine (STEM Workforce Development), Florida (Space Workforce Town Hall), New Mexico (Meeting Series Broadband, Workforce and Engaging Labs); plus future activities in Colorado, Wisconsin, Georgia and Tennessee.

- On 28 January, IEEE-USA joined with Computing Research Associates to provide comments responding to a request for information from the Federal Joint Committee on Research Environments (JCORE)—on proposals to ensure research rigor and integrity, manage administrative requirements, enhance research in security, and foster safe and inclusive research environments.

- Mina Hanna, chair of IEEE-USA's AI & Autonomous Systems Policy Committee, was a featured speaker on the topic, at the 2020 Knight Media Forum (held 25 February, in Miami, Florida). The event is billed as “the premier gathering for funders and media leaders working to strengthen local news, community and democracy.”



- On 25 February, IEEE-USA and the Electric Infrastructure Security Council delivered an oversubscribed congressional briefing on, *Black Sky Power Outage Events*, highlighting vulnerabilities of the electric power grid to space, weather and EMP attacks.
- In February, IEEE-USA announced the selection of its 2020 WISE Interns: Brook Elzweig, of the University of Colorado at Boulder; Nate Furman, of the University of Miami; and Kat Hefter, of Duke University. Due to the COVID-related shutdowns in Washington, D.C., however, the WISE Program was cancelled for Summer 2020.
- IEEE-USA also announced the selection of its 2020–2021 Government Fellows in February: Seema Alim (USAID), Rod Beresford (Congress), Megan Kanne (Congress), Daniel Palken (Congress), Nicole Ryan (Congress) and Eric Saund (Congress). Saund is the son of Dalip Saund, the first Indian-American to serve in the U.S. Congress, representing the 29th District of California from 1957–1963. The U.S. State Dept. also agreed to extend our 2019–2020 State Fellow, Aubrey Paris, for an additional year.

- Following the national COVID-19 shut-down in March, IEEE-USA delivered a series of five weekly live-casts to brief members on economic relief provisions for students and small businesses contained in the *CARES Act*, and subsequent legislation. IEEE-USA volunteers and staff designed the briefings to help IEEE members with small businesses and consulting practices take advantage of relief opportunities.
- In bi-weekly calls from April-May, representatives of the U.S. Office of Naval Research met with IEEE-USA representatives—soliciting advice on how best to support researchers, and sustain on-going federal research, through the COVID-19 epidemic.
- During April-May, representatives of the IEEE-USA Energy Policy Committee assisted the U.S. Government Accountability Office (GAO) Technology Assessment Group, on projects related to electric grid resilience (partnering with PES) and AI standards (partnering with IEEE-SA).
- In April, IEEE-USA also began receiving more frequent queries and requests for assistance from a number of U.S. congressional offices, including the offices of:
 - » The Senate Commerce Committee (requesting IEEE-USA assistance in pressing for confirmation of the new National Science Foundation Director)
 - » Rep. McNerney (California) (exploring use of AI for COVID solutions)
 - » Rep. Pallone (New Jersey) (support for S&T research in COVID legislation)
 - » Rep. Portman (Ohio) (expanding NIST participation in international standards meetings)
 - » Rep. Sherill (New Jersey) (assessing uses of 3D printing for COVID ventilator treatment solutions)



IEEE-USA VOLUNTEER CHAMPIONS ARTIFICIAL INTELLIGENCE

On 22 Jan, Marc Canellas, Vice-Chair of IEEE-USA's Artificial Intelligence and Autonomous Systems Policy Committee, and a former IEEE-USA Congressional Fellow, testified before the New York City Council on implementation of Local Law

49. Canellas' testimony provided advice and recommendations concerning the adoption of Automated Decision Systems by city agencies, and how to ensure systems are utilized ethically and transparently, with remedies for individuals who suffer harm, as a consequence of automated decisions.

During his testimony, Canellas highlighted IEEE-USA's growing influence and outreach on AI-related policy issues:

"ADS-related advocacy in the United States is led by the (IEEE-USA) AI Policy Committee, of which I am the Vice Chair. Our efforts at the federal level notably include organizing the bipartisan and bicameral Congressional AI Caucuses, which includes 27 Representatives (23 Democrats, four Republicans) and six Senators (three Democrats, three Republicans). In just this past year, our AI Policy Committee commented on the development of the federal privacy framework by the National Institute of Standards and Technology; endorsed congressional legislation calling for the ethical development of artificial intelligence; sent a letter to U.S. House and Senate congressional leaders, urging passage of legislation recognizing every American's digital privacy rights; and endorsed NYU's proposal to establish New York City's Center for Responsible AI. We also produced a report monitoring developments of AI around the world, and discussed automation and labor at the Texas AFL-CIO Constitutional Convention. Further, our members were recognized for their contributions to the DOD Defense Innovation Board's newly adopted set of principles—to guide ethical development and application of AI.

- In May and June, IEEE-USA arranged for representatives of the IEEE Standards Association to brief the U.S. Government Accountability Office (GAO) and the White House Office of Science and Technology Policy (OSTP), on the standards development process, and the role of standards essential patents.
- U.S. Rep. Thomas Massie (Kentucky) invited IEEE-USA to review and provide input to his draft legislation, *Restoring America's Leadership in the Innovation Act of 2020*, prior to introduction. The bill outlined several important reforms to the U.S. patent system, including restoring the grace period on patent disclosures, and eliminating patent fee diversion. Massie introduced the bill (H.R. 7366) on 25 June; it was referred to the House Committee on the Judiciary for consideration.
- U.S. Senator Schumer (New York) invited IEEE-USA to review and provide input to his draft legislation, *The Endless Frontier Act*, introduced in the Senate and House on 27 May, with bipartisan co-sponsors. The bills were referred to committee; and Sen. Schumer's attempt to bring it to the Senate floor after the Nov. election, was abandoned, with the expectation that the bill would become a component of the majority party's legislative agenda in 2021. The bill would rename and reorganize the National Science Foundation



(NSF), as the National Science and Technology Foundation; authorize U.S.\$100 billion over five years, to support research in targeted areas—including AI, quantum computing, and 5G wireless; and add another U.S.\$10 billion to establish 10–15 regional technology hubs—to help industry commercialize those technology investments.

- IEEE-USA communicated its support for the nomination of IEEE Fellow Dr. Sethuraman Panchanathan as Director of the U.S. National Science Foundation. The U.S. Senate confirmed Dr. Panchanathan's appointment on 18 June.
- In July, the U.S. Government reversed plans to suspend visas for foreign students enrolled in U.S. educational institutions, who would be taking fall instruction online, in response to pressure from lawsuits filed by MIT, Harvard and 17 U.S. states, along with statements of opposition from numerous organizations, including IEEE-USA, who issued a public statement on 13 July.
- In response to other changes to U.S. high-skill visa programs proposed by the administration, IEEE-USA called on Congress (10 July) to undertake a comprehensive reform of the U.S. high-skill immigration system, including a more direct path for STEM graduates of U.S. institutions to become U.S. citizens.
- The U.S. House of Representatives added the IEEE-USA-supported, bipartisan *AI Research Capacity Amendment*, successfully offered by Rep. McNerney, chair of the congressional AI Caucus, to the omnibus *FY2021 Appropriations Bill* (H.R. 7617), passed by the U.S. House of Representatives on 31 July. The Amendment directs the National Science Foundation to assess universities producing peer-reviewed AI research, as well as identify factors contributing to their success that could be implemented at other universities, through NSF-supported pilot programs.
- During July-August, IEEE-USA provided input in response to invitations from the House Science Committee on the DOE's *Office of Science Reauthorization Bill*, from the Department of Energy's proposed energy storage grand challenge; from the National Institute of Standards and Technology, on cybersecurity; from the National Space Council, on space cybersecurity; and with the Coalition for Aerospace Science to NASA, on updated strategies for space exploration; and for the future of the International Space Station's National Laboratory and commercial development of Low-Earth Orbit.
- IEEE-USA joined with IEEE Future Directions and the IEEE Quantum Initiative in a National Q-12 Education Initiative, announced by the White House Office of Science and Technology Policy on 5 August. As one of a dozen participating organizations, IEEE-USA and its IEEE partners will work with industry and other partners to support education on QIS themes at the middle school and high school levels.

- On 14 Sept., the U.S. House of Representatives agreed to the *AI in Government Act* (H.R. 2575), companion legislation by Rep. McNerney (CA) to a bipartisan bill (S. 1363) by Senators Schatz (HI), Harris (CA), Gardner (CO) and Portman (OH)—pending approval in the U.S. Senate. IEEE-USA had worked with bill sponsors in the House and Senate in support of the bill; to promote inclusion of the legislative provisions that seek to ensure the government's use of AI and automated processes are ethical and accountable; and to see the government has the necessary technical expertise to employ AI successfully.
- In September, IEEE-USA's incoming 2020–2021 Government Fellows completed their two-week orientations and accepted their assignments. Rob Beresford joined the staff of the Senate Energy and Natural Resources Committee. Megan Kanne elected to serve as a Legislative Assistant to U.S. Representative Jan Schakowsky (IL). Daniel Palken became a Legislative Assistant to U.S. Senator Sheldon Whitehouse (RI). Nicole Ryan joined the staff of U.S. Representative Paul Tonko (NY) as a Legislative Assistant. Eric Saund accepted an invitation to serve as a Legislative Assistant to U.S. Representative Jim Langevin (RI).
- On 13 October, IEEE-USA released a training video for volunteer advocates on *Policy, Advocacy and COVID*, in support of local government and grassroots activities by IEEE Sections.
- IEEE-USA co-sponsored the 2020 Golden Goose Awards, an annual award program of the U.S. STEM community. The program highlights otherwise obscure federally-funded research that resulted in major breakthroughs or advances in such fields as biomedical research, medical treatments, and computing and communications technologies. The 2020 Awards highlighted researchers whose work contributed to COVID-19, including the development of vaccines and treatments. The 2020 Awards were presented at a virtual ceremony held on 1 December.
- Working in conjunction with the Coalition for National Security Research and the Energy Sciences Coalition, IEEE-USA provided input into coalition recommendations to the Presidential Transition Teams for the Departments of Energy and Defense.
- In late November, the U.S. Government Accountability Office (GAO) released a report on *Technology Assessment 5G Wireless Capabilities and Challenges for an Evolving Network/Nov 2020*, which references work by IEEE Standards, the Future Networks Initiative, and IEEE's Green Technology Standards Committee. The report was developed with input from meetings arranged by IEEE-USA for IEEE-SA representatives active in 5G standards areas; and from responses to a series of questions forwarded through IEEE-USA that were addressed by IEEE SA and IEEE Legal.
- IEEE-USA organized a virtual briefing by IEEE quantum experts for the U.S. Government Accountability Office on 2 November. The briefing updated GAO technologists on the status of quantum research, obstacles to overcome, and what the U.S. government can do to speed the development and deployment of this technology.
- Submitted to the U.S. Patent and Trademark Office, in response to their request for comments on discretion to institute trials before the Patent Trial and Appeal Board, IEEE-USA's comments were one of only two comments—out of 826 submitted. IPWatchDog highlighted IEEE-USA's comments in coverage on 8 December.
- IEEE-USA hosted a special virtual briefing on 11 December, by Neal Lane (former Science Advisor to the President and NSF Director), and Norman Augustine (retired Chair and CEO of Lockheed Martin); to discuss the declining competitiveness of U.S. R&D, its impact on the nation, and what should be done to reverse this disturbing trend.

- IEEE-USA helped champion a number of provisions that were included in the *National Defense Authorization Act* (NDAA), passed by Congress at year-end, and signed into law (Public Law 116–92) on 20 December. These provisions included:
 - » *The National Artificial Intelligence Initiative*, sponsored by House Science Committee Chair Eddie Bernice Johnson
 - » *The Artificial Intelligence Initiative Act*, sponsored by Sen. Martin Heinrich
 - » *The National Research Resource Task Force Act*, also from Sen. Heinrich
 - » *The Deepfake Report Act*, from Sen. Brian Schatz
 - » *The Artificial Intelligence Standards & National Security Act*, from Sen. Michael Bennett
 - » *The Ensuring Leadership over International Standards Act*, sponsored by Sen. Catherine Cortez Masto
- Through year-end, IEEE-USA released nine new or updated public policy position statements, on issues related to trade in technology, export controls, Artificial Intelligence, small business research support, nuclear power, electric power transmission, revitalizing federal broadband initiatives, and state regulations classifying consultants as employees, increasing federal small business support for women and minorities, and broadening access to ITC exclusion orders in patent infringement cases.
- IEEE-USA also joined with or issued 29 communications to policymakers on pending legislation or regulations on a variety of topics, ranging from federal support for R&D, U.S. space policy and artificial intelligence, to immigration reforms for skilled workers.

Collectively, these provisions will support federal efforts to develop and deploy ethical AI systems, and help the United States participate more effectively in international standards-setting efforts.

SUPPORTING MEMBERS' CAREERS

IEEE-USA strives to provide high-quality products and services designed to enhance the careers and support the professional development of IEEE's U.S. members, at all stages of their career life-cycles. This chapter highlights our 2020 efforts to help members cope with the career and workplace challenges associated with the COVID-19 disruption, as well as support members' professional development needs and overall career vitality:

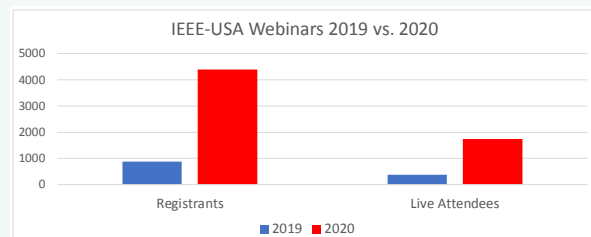
- IEEE-USA increased its career-related webinar offerings in 2020, from 15 to 21 career topics, along with 24 bi-weekly Washington Updates; and a special policy webinar featuring former Lockheed Martin CEO Norman Augustine, and former NSF Director Neal Lane, discussing *The Perils of Complacency: America at the Tipping Point in Science and Engineering*.

We offered career topics to span the entire life cycle of a technical career—from entry into the profession, to mid-career transition, promotion to management, self-employment and retirement. As a special focus, IEEE-USA also offered a series of webinars on topics designed to help members remain productive in the COVID-19 work environment.



The complete list of 2020 Career webinar offerings were:

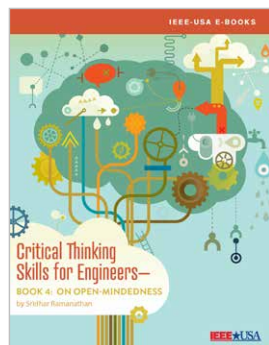
- Interviews that Get Results
- Resumes that Land Interviews
- So You Want to Become an IEEE Senior Member
- Highlights from the 2020 IEEE-USA Consultants Fee Survey
- Professional & Forensic Engineering and Expert Witness Career Progression
- Engineering Licensure: From Point A to Point P.E.
- How to Keep Your Patent Options Open on a Tight Budget
- The Life of a Consultant
- Why Is ISO 9001 So Important to Organizations?
- How to Start a Local Consultants Network
- Pitch Perfect: How to Get What You Want in Negotiations
- Power Formula for LinkedIn Success
- The Silent Killers of IT Projects and How to Address Them
- In the Moment Meditation
- Post-COVID-19 Outlook: Opportunities in the Shift
- How to Lead Your Remote Teams More Effectively
- Diversifying Your Consulting Business for Times of Crisis
- Artificial Intelligence: A Guide for Thinking Humans
- Engineering Code of Ethics
- Beyond the Safety Aspects of Your Return to Work Plan
- Who Moved the Cheese?—My Cheese Workbook
- Leadership in a Six Sigma World
- How to Build More Brand Loyalty as a Person, an Employee, a Leader and a Company
- Working Remotely, Staying on Track
- The Future of Work and Your Job Search during Disruption
- Using DISC to Increase Civility, Engagement and Personal Leadership
- Discover Yourself and Your Own Unique Brand
- Jump Start Your Career Search and Maintain Your Career Development during this Crisis
- Design for Safety
- Networking Pro Tips: Come Off as Confident, Not Cocky
- Five Action Steps to a Better, More Productive, Work Culture



Webinar registrations increased from 880 to 4,394, an increase of nearly 500%. Live attendance also increased from 375 to 1,742 (over 400%). IEEE-USA webinars (live and recorded) received a total of more than 11,500 views in 2020.

- During 2020, IEEE-USA published 15 new e-books, including the *2020 Salary Survey and Consultants Fee Survey Reports*. E-book news releases focused on critical thinking skills for engineers; publishing your work; project teams; R&D; EE activities for the classroom; the importance of STEM; the value of speakers' bureaus; women in engineering; IEEE-USA's first digital comic book, with first-ever, young EE super heroes; what our world will be like in 10 years, and more.

- A total of 49,235 e-books were distributed from the IEEE-USA catalog of more than 290 titles in 2020, the most popular of which was *Critical Thinking Skills for Engineers—Book 4: On Open-Mindedness*, with 3,115 downloads.



- IEEE-USA also continued to expand its audiobook offerings in 2020, releasing six new titles: *Developing Your People—Common Sense Leadership in the Workplace—Volume 3: Career Asset Management, Teamwork and Empowerment*; *Lessons I Learned from Dad's Workshop—Volume 1*; *Lessons I Learned from Dad's Workshop—Volume 2*; *Thomas Edison—Man of the Millennium—Volume 1*; *Thomas Edison—Man of the Millennium—Volume 2*; and *Thomas Edison—Man of the Millennium—Volume 3*.

The most popular audiobook of 2020 was *Valuable Career Lessons I Learned from Dad's Workshop, Vol. 1: Be Creative, Plan Ahead*, with 1,734 downloads.



On 1 January, IEEE-USA released a new e-book, *Publish Your Work*; and a new audiobook, *Developing Your People—Common Sense Leadership in the Workplace—Vol. 3: Career Asset Management, Teamwork and Empowerment*, both by author and IEEE Senior Life Member, Harry T. Roman.

- IEEE-USA launched its 2020 Salary & Benefits Survey of U.S. members (10 March–8 April). All IEEE higher grade members in the United States were invited to participate, and received 10 free uses of the IEEE-USA Salary Calculator, for taking part.



- During March, IEEE-USA implemented a new live-streaming system (Streamyard) for its webinars, allowing for more professional output and simultaneous “live” broadcasts on multiple social media platforms. Our first livestream webinar, offered on both IEEE-USA's Facebook and Youtube channels, was *Using DISC to Increase Civility, Engagement and Personal Leadership*.
- In April, IEEE-USA shifted its career webinars to Facebook livestream events, increasing webinar frequency from bi-weekly to weekly, with a topical focus on addressing members' professional needs in the COVID-19 environment. Participation rates increased by more than 300%.
- IEEE-USA's new April e-book release, *What Will Our World Be Like in 10 Years? Book 1: Emerging Trends*, was the first in a series by technology futurist Maxim Jago.



- IEEE-USA's new Awards and Nominations portal went live on 1 May. The new portal supports single sign-on, is user friendly, is easier to maintain, and gives a user experience consistent with other IEEE awards portals.



- In May, IEEE-USA's new e-book for members was *Free to Choose STEM: Data and Reflection on Girls and STEM Careers*, by author Pamela Cosman. The e-book targets young women going into STEM, and their parents—and offers advice for anyone who would like to learn more about STEM for girls starting out on their educational and career pathways.



- In May, IEEE-USA also released the second in a series of new audiobooks on *Valuable Career Lessons I Learned from Dad's Workshop, Vol. 2: Be Responsible, Communicate, and Keep Learning*.
- On 12 May, Dr. Terrence Yeoh presented IEEE-USA's first livestream panel webinar on *Leadership in a Six-Sigma World*. Yeoh is the integrated product team lead at Raytheon, and he is responsible for coordinating systems engineering needs for NASA Jet Propulsion Laboratory space programs. The live event drew more than 100 attendees, and received nearly 600 views.
- IEEE-USA sponsored the Eta Kappa Nu (HKN) Diversity and Inclusion Roundtable, held virtually in 2020. The event remains available for viewing on-demand. The Roundtable focused on how HKN Chapters can incorporate best practices to promote diversity and inclusion, in their programs and community outreach.
- IEEE-USA presented its 2020 Awards Ceremony virtually on 31 August. Streamed on IEEE-USA's Facebook and YouTube pages, more than 250 viewers tuned in during the live ceremony.

It received an additional 1,000+ post-event views. The 42-minute long event featured pre-recorded presenters' and nominators' segments, and each reward recipient's acceptance remarks.

- Partnering with the AICNCC (Alliance of IEEE Consultants' Network Coordinating Committee), IEEE-USA hosted a series of webinars that recorded more than 100+ live attendees for each webinar.
- Alongside the webinars, IEEE-USA also hosted a bi-weekly IEEE-USA Washington Update, presented by IEEE-USA Director of Government Relations, Russ Harrison. The presentation featured updates on Capitol Hill and national policy issues affecting U.S. IEEE members. The IEEE-USA Washington Update continues to have a consistent following, with members being engaged on current events and policy issues.
- IEEE-USA released the results of its 2020 Salary Survey in mid-September, and updated the online Salary Calculator. *IEEE Spectrum* featured the Survey results, reporting, "In 2019, the typical tech professional IEEE member earned U.S. \$148,500 in 2019, excluding overtime, profit sharing and side hustles. That's up from \$145,000 in 2018, a 2.4 percent increase, leaving real income virtually unchanged." Other Survey highlights included significant increases in employee job satisfaction—despite the flat compensation trend; continuing growth of the gap in pay by gender; and continuing high compensation trends for engineers in consumer electronics.



IEEE-USA'S SPECIAL SALARY REPORTS

IEEE-USA released three special salary reports in 2020, highlighting compensation trends for Young Professionals and for professionals in the Power & Energy and Computer fields. Some highlights are as follows:



YOUNG PROFESSIONALS

Total median total income in the calendar year of 2019 was \$85,700 (up from \$83,900 in 2018). Median base salary was reported at \$83,000.

Members who identified their lines of business as Communications and Software Technology had the highest median incomes at \$106,000 and \$105,000, respectively; those working in Education and Automotive had the lowest (\$74,000 and \$77,700, respectively).



POWER & ENERGY INDUSTRY

Total median income in the calendar year of 2019 was \$133,000. Median base salary was reported at \$124,000.

Members who identified their line of business as Software Technology had the lowest median incomes (\$91,300); those who worked in Petroleum/Chemical had the highest (\$160,000).



COMPUTER INDUSTRY

Total median total income in the calendar year of 2019 was \$150,000. Median base salary was reported at \$142,900.

Members who identified their line of business as Mobile Technology had the highest median incomes (\$186,300); those who worked in Transportation had the lowest (\$109,300).

Median income varied by employment type, as well. Those working in Private Industry (non-defense) earned the highest primary incomes (median of \$163,200), in calendar year 2019; those working at State and Local governments were the lowest (\$100,700).

- In early October, IEEE-USA released the results of its **2020 IEEE-USA Consultants Fee Survey Report**. The survey collected data from 956 participants. Among the highlights, the survey reflected a mean consulting rate of \$184 per hour, and a seven percent decrease in median rates charged. One-third (34%) of respondents reported that the COVID-19 pandemic had negatively affected their businesses; another 30% experienced mixed impacts; only seven percent reported positive business results.



Twenty percent of respondents also reported receiving government (CARE) aid, to help weather the business impacts of the pandemic.

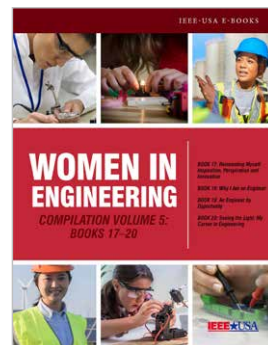
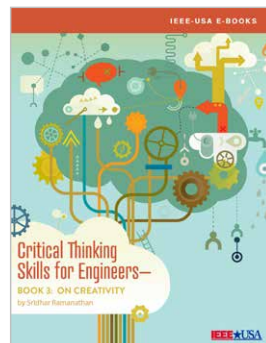
- On 27 October, IEEE-USA President-Elect Kate Duncan delivered a talk to the virtual IEEE Rochester Joint Chapters Meeting on *The Evolution of IEEE-USA's Mission and Vision*.
- IEEE-USA co-sponsored the IEEE-HKN Experience, an 11-day virtual event (28 October to 7 November). The event brought together HKN student members and alumni, young

professionals, IEEE members and engineering professionals—for a series of speakers and panels on a variety of professional development topics. IEEE-USA Past President Tom Coughlin keynoted a talk on *New Jobs for New Technologies*. IEEE-USA Government Relations Director Russ Harrison addressed, *What the 2020 Election Means to Engineers*.

- IEEE-USA Past President Tom Coughlin delivered a presentation on *Diversity and Inclusion in Engineering* to the IEEE-USA co-sponsored Global Humanitarian Technology Conference, held virtually, 29 October to 1 November.
- Although their efforts were hampered by the pandemic, during Fall 2020, IEEE-USA's Alliance of IEEE Consultants Networks Coordinating Committee focused on efforts to restart local IEEE networks that have become inactive. Such consulting networks included those in Denver, Washington/Northern Virginia and Southern California. IEEE-USA also launched a series of livestream webinars in mid-September, focused on the IEEE Consultants Network.
- IEEE-USA's online Consultants Finder featured 360 subscribed member-consultants at year-end, up slightly from 337 in 2019.

IEEE-USA COMMUNICATIONS HIGHLIGHTS

- In 2020, IEEE-USA released 18 new e-books and six new audiobooks on career and professional topics, bringing our current catalog of e-book offerings to 293 and audio books to 18. At year-end 2020, the total e-books downloaded (sold and free) was 49,230. Including “Other Distribution” (such as Sci-Fest’s IEEE-USA Virtual Backpack), that total climbed to 59,285. Compared to previous years, our 2020 total downloads were more than the added yearly totals of the past four years combined (2016–2019).
- Our most popular e-book title in 2020 was *Critical Thinking Skills for Engineers—Book 4: On Open-Mindedness*, with 3,115 downloads in 2020; coming in second was *Critical Thinking Skills for Engineers—Book 1: Analytical Skills*, with 2,144 downloads; followed by *Critical Thinking Skills for Engineers—Book 2: Communication Skills*, with 1,817 downloads. *Critical Thinking Skills for Engineers—Book 3: On Creativity* took fourth, with 1,718 downloads. And IEEE-USA’s *Engineering Coloring Book for Adults* is in fifth place, with 1,666 downloads.
- Looking at IEEE-USA Audiobooks—by year-end 2020, members downloaded 13,549. In 2019, the total number of audiobook downloads was 3,445. Combining 2019 and 2020 brought that total to 16,994. At year-end 2020, we had a grand total of 23,694 downloads, since program inception (2017 through 2020).
- In 2020, our top three Audiobooks were: *Valuable Career Lessons I Learned from Dad’s Workshop, Vol. 1: Be Creative, Plan Ahead* (1,734 downloads); *Developing Your People—Commonsense People in the Workplace—Volume 3: Career Asset Management, Teamwork and Empowerment* (1,636 downloads); and *Valuable Career Lessons I Learned in Dad’s Workshop—Vol. 2: Be Responsible, Communicate and Keep Learning* (1,502 downloads).
- Combined E-Book, Audiobook and Other Distribution totaled 66,645, at year-end in 2020.



- IEEE-USA E-BOOKS also partnered with volunteers, authors, and other internal and external entities for increased awareness and distribution of IEEE-USA E-Books and Audiobooks, such as: *IEEE Spectrum*, *IEEE The Institute*, IEEE’s Student Activities Committee; TryEngineering.org; *The Bridge*; the IEEE HKN Diversity & Inclusion Roundtable; and IEEE Women in Engineering.
- Published IEEE-USA E-BOOK titles in 2020:
 1. 2019 IEEE-USA Annual Report
 2. 2020 IEEE-USA Consultants Fee Survey Report
 3. 2020 IEEE-USA Salary Survey Report
 4. Caring for Your Project Team
 5. The Slate Twins—Caught in the Currents (Comic Book #1)
 6. Critical Thinking Skills for Engineers—Book 3: On Creativity
 7. Critical Thinking Skills for Engineers—Book 2: On Openmindedness
 8. Do Your R&D
 9. EE Activities for the Classroom
 10. Free to Choose STEM: Data and Reflection on Girls and STEM Careers
 11. Publish Your work
 12. The Value of a Speaker’s Bureau

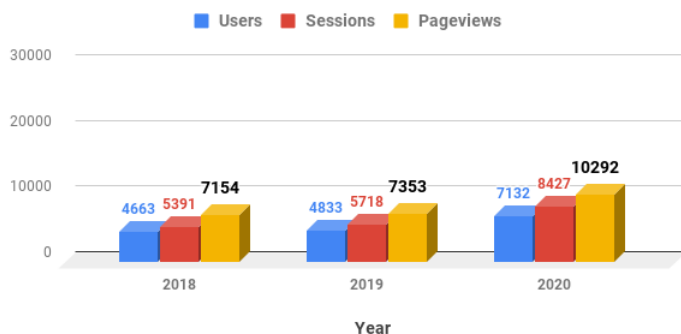
13. What Will Our World Be Like in 10 Years?
Book 1: Emerging Trends
14. Women in Engineering—Book 23: From Semiconductor Physics to Sales and Marketing—My Perfect Career Path
(Author: Liang Xi Downey)
15. Women in Engineering—Compilation 5:
Books 17–20
16. 2020 Salary & Benefits Survey Special Report:
Young Professionals
17. 2020 Salary & Benefits Survey Special Report:
Power & Energy Industry
18. 2020 Salary & Benefits Survey Special Report:
Computer Industry

■ Published IEEE-USA AUDIOBOOKS in 2020:

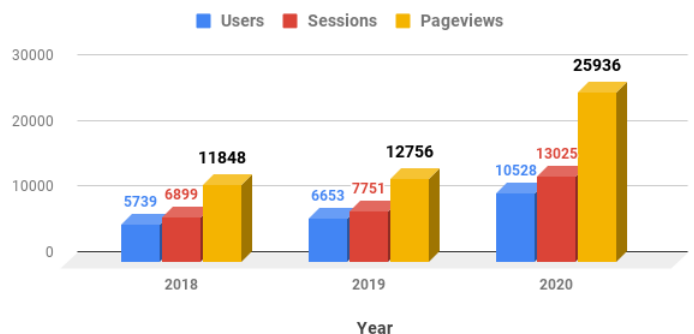
1. Developing Your People—Commonsense Leadership in the Workplace—Volume 3: Career Asset Management, Teamwork and Empowerment
2. Lessons I Learned from Dad's Workshop—Volume 1: Be Creative, Plan Ahead
3. Lessons I Learned from Dad's Workshop—Volume 2: Be Responsible, Communicate and Keep Learning
4. Thomas Edison—Man of the Millennium—Volume 1: The Legacy
5. Thomas Edison—Man of the Millennium—Volume 2: Lifetime Partnerships
6. Thomas Edison—Man of the Millennium—Volume 3: Observations

- Published more than 135 articles in *IEEE-USA InSight* (an average of 11.25 articles per month), resulting in an average of 8,427 user sessions per month, a 47% increase over 2019. The editorial content emphasized helping members and technology professionals adjust to life during a pandemic—including working from home, conducting business interactions online, the value of IEEE membership, and the countless resources available from IEEE-USA/IEEE.
- Thanks to remarkable cooperation across IEEE OUs, we experienced significant increases in traffic across both *IEEE-USA InSight* and our main site: IEEEUSA.org. MGA's prominent and consistent inclusion of IEEE-USA content in the then-weekly Member Benefits Bulletin was an invaluable source of new and continuing traffic throughout much of the pandemic, with the site averaging 25,936 page views per month—an increase of more than 103% over the 2019 monthly average. Much of the traffic was tied to promotion of our free e-books, webinars and articles on *InSight*.
- We continued to publish our three primary newsletters in 2020, the *IEEE-USA InSight Email Update* (sent monthly to 111,992 members, 24% open rate); the *IEEE-USA Conference Brief* (sent quarterly to 127,962 members, 27% open rate); and the *IEEE-USA Leadership Connection* (sent monthly to 28,234 members, 28% open rate). We also published a fourth newsletter, the quarterly *AICN Newsletter* (sent to 6,277 subscribers, 30% open rate).

IEEE-USA InSight - Average Monthly Users, Sessions and Pageviews (2018-2020)



IEEEUSA.org - Average Monthly Users, Sessions and Pageviews (2018-2020)



PROMOTING THE PROFESSION AND SERVING THE PUBLIC

In addition to the career and policy efforts that IEEE-USA engages in to advance the technical profession and serve the public interest, IEEE-USA also engages in a variety of activities designed to increase public awareness of the profession, encourage interest in technical careers, and directly serve the public interest.

Highlights of IEEE-USA's public outreach for 2020 include:

National Engineers Week | U.S. Science and Engineering Festival

MOVE Community Outreach Initiative | Science Kits for Public Libraries Initiative

NATIONAL ENGINEERS WEEK

National Engineers Week (EWeek) was founded in 1951, through a collaboration of professional engineering societies—as an annual celebration of engineering, and to enhance public understanding of and interest in engineering and technology careers.

IEEE-USA was an active participant in 2020 EWeek programs and activities, including promotion of the DiscoverE program, Introduce a Girl to Engineering Day, and the Global Marathon for Women in Engineering. By making extensive use of social media to engage students and adults, we encouraged them to get involved in EWeek Activities in their local areas.

As a co-founder of the Future City Competition, IEEE-USA sponsored the Welcome Party for student participants, parents and teachers, at the National Finals, held in Washington D.C., during EWeek. IEEE-USA President-Elect Katherine Duncan presented the Future City Most Advanced Smart Grid special award, to the team from St. Hugh Catholic School (Florida).



Our annual EWeek collaboration with the National Building Museum as co-sponsor of Discover Engineering Family Day was cancelled for 2020, due to planned building renovations.

U.S. SCIENCE AND ENGINEERING FESTIVAL

IEEE-USA is a founding supporter and annual co-sponsor of the U.S. Science and Engineering Festival, which seeks to stimulate the interest of our nation's youth in Science, Technology, Engineering and Mathematics (STEM). The Festival began as a week-long exhibition, featuring hundreds of STEM-related programs and organizations, held every two years in Washington, D.C. The inaugural Festival, held outdoors on the National Mall in 2010, drew more than half a million students, parents, teachers, and other participants from across the United States.

In 2020, the COVID-19 pandemic forced organizers to virtualize the Festival, and set in motion an expanded series of online events and activities that extended through much of the fall.

IEEE-USA participated in SciFest All Access, the Festival's virtual exhibition, which was originally scheduled for 16–23 September, and extended through 31 October, due to sustained interest. The online event drew 75,000 students, parents and K-12 STEM teachers to participate in online workshops, hear featured speakers, and visit virtual exhibits. More than 3,000 participants visited IEEE-USA's virtual booth, where they could watch a step-by-step demonstration of how to build an LED flashlight from household items; review IEEE/IEEE-USA's STEM resources (including TryEngineering.org); and take home a Virtual Backpack—filled with digital copies of IEEE-USA engineering crossword puzzles, coloring books, and comic books for aspiring young engineers.



Overheard at IEEE-USA's SciFest Virtual Booth



“That is really cool how you made a flashlight out of simple things. I want to be an engineer when I grow up, and want to learn so much more.”

~ Caroline ~

“Great flashlight tutorial! Can't wait to show my kids!”

~ Scott ~

“How did that work? It's amazing!”

~ Simi ~

MOVE COMMUNITY OUTREACH INITIATIVE

IEEE-USA partners with IEEE Regions 3 and 5, and the American Red Cross in the MOVE Community Outreach Initiative, an emergency relief program committed to supporting Red Cross efforts to assist victims of natural disasters, by providing short-term communications, networking and power solutions to Red Cross field operations—and to aid affected residents in disaster areas.

Mother Nature made no allowances for 2020's global pandemic, so MOVE program volunteers worked with IEEE Risk Management to develop a COVID operations plan—so that they could continue to safely deploy with the Red Cross, in response to natural disasters.

The 2020 MOVE highlights included five emergency deployments:

- The MOVE team mobilized to the Nashville, Tennessee area (12–17 March) for an extended deployment, to provide technology and communications support to Red Cross Multi-Agency Resource Centers who provided mental health support, WeGo transit passes, preparedness information disaster health services, financial and insurance assistance, and related services to those affected by the devastating 6 March tornadoes.
- On 4–6 August, the MOVE emergency vehicle and volunteers Jay Diepenbrock and Sara Spencer deployed to Bertie County, North Carolina, to provide Internet access and communications support to a Red Cross shelter. The area suffered extensive damage and fatalities, including the destruction of the local communications infrastructure, from tornadoes spawned by Tropical Storm Isaias.
- The MOVE emergency vehicle, with volunteers John Balsam and Jay Diepenbrock on board, deployed to Lake Charles, Louisiana on 3–12 September, in the wake of Hurricane



Laura, to provide communications support, public Wi-Fi and phone charging services, and occasional power at the SWLA Center for Health Services. The truck and its crew also supported local relief efforts by the United Cajun Navy and the Salvation Army.

- From 18–25 September, the MOVE emergency vehicle, with volunteers Alan Brown and Grayson Randall, deployed to Pensacola, Florida, in the wake of Hurricane Sally, where they supported Red Cross relief efforts—including the Red Cross disaster technology services (DST) office set up; and by providing power and internet services to support Red Cross training to volunteers at the Friendship Missionary Baptist Church.
- For much of October (10–21), the MOVE emergency vehicle, and volunteers Alan Brown and Grayson Randall, were deployed to provide network and computer support for Red Cross operations in Baton Rouge, Louisiana, during recovery from Hurricane Delta.

The COVID-19 pandemic limited opportunities for K-12 STEM, or public visibility deployments in 2020. However, 2020 was an active organizational year for MOVE as a program, including virtual recruitment of volunteers; establishing a volunteer-run Weather Team, to help advise the MOVE truck when on route to, or returning from, deployments; and an approval

by the IEEE New Initiatives Committee of a funding proposal in September 2020—to explore opportunities to expand the MOVE program into India and the Caribbean. IEEE-USA also provided a \$20K grant to the IEEE-USA MOVE Fund for support of future U.S. MOVE operations.

To volunteer, donate, or for more information on MOVE, go to <https://move.ieeeusa.org>

SCIENCE KITS FOR PUBLIC LIBRARIES INITIATIVE

IEEE-USA co-sponsors the Science Kits for Public Libraries (SKPL) Initiative, an IEEE Region 4 program that raises funds for public libraries to acquire and make science kits as easy to check out as a book. With access to a public library and a valid library card, children can check out high-quality, hands-on STEM (Science, Technology, Engineering and Mathematics) experiences—at zero cost to their parents.

SKPL seeks to: 1) make STEM learning available for children, regardless of race, gender, or income; 2) inspire and engage children in the pursuit of scientific discovery; and 3) plant the seeds for a STEM career.

SKPL began in 2009, as an initiative of the IEEE Chicago Section and the Mount Prospect Public Library, championed by IEEE volunteer John Zulasky. A \$40,000 grant from the IEEE Foundation and the IEEE Life Members Fund in 2012 allowed SKPL to provide 26 libraries in the Chicago area with science kits. In 2017, IEEE Region 4 agreed to take on SKPL as a regional initiative. In June 2018, IEEE-USA agreed to help SKPL as it embarked on a multi-year effort to scale up the program from serving all libraries in the Chicago area (Phase I), to building section-library partnerships throughout Region 4 (Phase II); and eventually, to taking the program



national—with assistance from IEEE-USA (Phase III). In 2019, thanks to a substantial gift from S&C Electric Company Foundation, SKPL was able to achieve its Phase I goal of making science kit collections accessible to the public through all 81 branches of the Chicago Public Library; and work began to expand the SKPL program to Milwaukee, and other Region 4 sections.

The COVID-19 pandemic closed most public libraries, and significantly slowed down SKPL expansion, and associated fund-raising efforts, during 2020. IEEE-USA remains committed to SKPL, and the vision of growing it to become a nation-wide program.

To volunteer, donate, or for more information on SKPL, go to <https://r4.ieee.org/skpl/>

SPONSORING TECHNICAL CONFERENCES

The IEEE-USA sponsored, or technically co-sponsored, six IEEE technical/professional meetings in 2020—working in partnership with IEEE technical societies, U.S. regions and/or sections. The conferences program not only generates revenue to help support IEEE-USA’s career and professional programs, it also builds valuable relationships, improves communications, and encourages collaboration between IEEE-USA, and other IEEE organizational units. Unfortunately, the COVID-19 pandemic impacted our 2020 technical conferences program, causing a number of planned conferences to be virtualized, canceled, or postponed to 2021.

THE FOLLOWING CALENDAR HIGHLIGHTS IEEE-USA’S 2020 TECHNICAL CONFERENCES PROGRAM

DATE	CONFERENCE	CITY
3–5 Jan	IEEE Rising Stars Conference	Las Vegas, NV
6–8 Jan	10th Annual Computing and Communication Workshop and Conference (CCWC)	Las Vegas, NV
12–15 March	IEEE SoutheastCon 2020	Cancelled
1–3 April	2020 IEEE Green Technologies Conference	Cancelled
23–25 Apr	IEEE Conference on Technologies for Sustainability (SusTech)	Virtual
12 Oct	IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE)	Virtual
29 Oct–1 Nov	IEEE Global Humanitarian Technology Conference	Virtual
12–14 Nov	IEEE Women in Engineering (WIE)—Forum East	Postponed
5 Dec	IEEE Signal Processing in Medicine and Biology Symposium (SPMB)	Virtual

COMMUNICATING WHAT WE DO

IEEE-USA communicates regularly with IEEE's U.S. members through multiple channels, including its online journal *IEEE-USA InSight*, the *InSight Email Update* (monthly), *IEEE-USA Future Leaders Connection* (monthly), *IEEE-USA Conference Brief* (quarterly), and *IEEE-USA Consultants Newsletter* (quarterly), as well as through our IEEE-USA website, and via social media, videos and ads.

- In addition to keeping our members informed of our career-enhancing products and services, and the public policy activities we undertake on their behalf, IEEE-USA's communications team works to engage a broader public audience—with the goal of raising awareness of engineering and allied professions, and the important contributions that they make to society. The following are some of our communications highlights from 2020:
 - In January, IEEE-USA received a GOLD Award and an Honorable Mention from AVA Digital Awards for its short-form promotional videos, developed for the 2019 IEEE-USA EVO Conference. AVA Digital Awards is an international competition that recognizes excellence by creative professionals responsible for the planning, concept, direction, design and production of digital communication.
 - In February, Vega Digital Awards honored IEEE-USA with notice of two Gold (Centauri) awards for its website, and *IEEE-USA InSight* publication; and two Bronze (Arcturus) Awards for a conference video (the EVO Show Opener); and its 2018 E-Annual Report. VEGA Digital Awards is an international competition recognizing the work of digital and creative professionals, web developers, web designers, and web agencies around the world.
 - In March, IEEE-USA released the first in a projected series of comic books featuring the adventures of two new, young EE superheroes. Jeff Knurek, Jumble puzzle creator, as well as creator of the game, Spikeball, authored IEEE-USA's new comic book, *The Slate Twins: Caught in the Currents*. Designed to inspire young future engineers, the comic is available from IEEE-USA for distribution at K-12 STEM and related events. Before the pandemic outbreak, IEEE-USA distributed approximately 2,800 print copies of the comic book to members, K-12 students, parents and higher educators. It is available on-line free to members, and for purchase by non-IEEE members.
 - In April, IEEE-USA received three Silver Awards from Muse Creative Awards, for its 2019 EVO Conference video show opener, *IEEE-USA InSight* publication, and 2018 E-Annual Report. An international competition, Muse Creative Awards recognizes creativity in advertising, design and digital communications.
 - IEEE-USA released its *2019 Annual Report* on July 15. The report can be accessed at: <https://ieeusa.org/wp-content/uploads/ebooks/annual-reports/2019.pdf>.
 - In July, Member engagement with IEEE-USA on Twitter received a significant boost (up 742% from the previous month), prompted by member responses and discussion about an IEEE-USA media statement on changes made to the H-1B visa program for skilled workers.

“COMPETITIVE EDGE” CAMPAIGN GIVES IEEE-USA NATIONAL EXPOSURE



IEEE-USA kicked off an “IEEE-USA is My Competitive Edge” TV ad campaign in late Fall. The campaign aimed to drive new member conversions (via a dedicated call-to-action website), drive brand awareness, increase website traffic, reinforce our organizational message, and appeal to a younger, more diverse demographic.

With a \$50,000 budget, IEEE-USA aired a series of 30-second ads in five major U.S. markets: Boston, Austin, Denver, Seattle and San Francisco. The ads aired a total of 551 times across all markets, with an estimated total reach of 2,549,000.

The professionally-produced ad videos featured four young, diverse U.S. IEEE members. Copies of the videos are available for viewing on the IEEE-USA YouTube channel, and at IEEEtv.

What did our members have to say about the campaign?

- “This sounds like a positive strategy!”—Taylor Winship, 2020–2021 SCV Section Chair
- “These are very nicely done! Thank you for creating these. They are awesome.”—Greg Gdowski, 2020 R1 Director-Elect
- “I’ve seen these. They are awesome!”—Marie Tupaj, 2021 IEEE Boston Section Chair





- **PERUSALL 2020:** To further expand the reach of its publications, IEEE-USA partnered with Perusall—an online learning platform built to serve students nationally and internationally. Perusall has distributed selected IEEE-USA titles to more than 500,000 students and instructors at over 2,000 universities, colleges and educational institutions in 75+ countries.
 - » In late 2019, a professor from Portland State University approached IEEE-USA E-BOOKS to ask us to consider partnering with Perusall, so that he could use our e-book, *Critical Thinking Skills for Engineers—Book 2: On Communications*, for one of his courses in the Spring of 2020. We did so, and in Spring 2020, some 40 students downloaded and used our e-book for his course.
 - » In 2020, Perusall allowed us to add six more IEEE-USA E-BOOKS titles (non-requested), for a total of seven titles listed. Professors from universities around the world can browse the books and use them for course material.

- 2020 MEDIA COVERAGE OF IEEE-USA
 - » IEEE-USA was featured in 14 news articles in 2020—an impressive total, in a year when the pandemic dominated the headlines.
 - » Highlights include articles in the [New York Times](#), [Wall Street Journal](#), and [Breitbart News](#).
- In 2020, IEEE-USA participated in the following in-person and virtual events:
 - » IEEE-USA co-sponsored 17 planned events in 2020. Three early in the year were held in person; eight later in the year were converted to virtual events; and six were cancelled.
 - » IEEE-USA staff attended two events in person this year:
 - IEEE Rising Stars (Las Vegas, NV - January 2020)
 - DiscoverE Future City Finals (Washington, D.C. - February 2020)
 - » And IEEE-USA staff managed virtual booths at two virtual events:
 - SciFest All Access (September/October 2020)
 - IEEE Meeting Series (November 2020)



IEEE-USA RECOGNIZED FOR COMMUNICATIONS EXCELLENCE

During 2020, IEEE-USA received a total of nine professional recognitions and awards for excellence in digital communications and marketing. The granting organizations and the awards received are listed below:

MUSE CREATIVE AWARDS

Silver Award—2019 EVO Show Opener—Conferences/Videos

Silver Award—2018 E-Annual Report: Building a Brighter Future—Publications/E-Annual Reports

Silver Award—IEEE-USA InSight—Publications/Online Magazine

AVA DIGITAL AWARDS

Gold Award—2019 EVO Speaker Sneak Peek Video—Web-Based Production Short-Form Video <3 Minutes/Event

Honorable Mention—2019 EVO Conference Premiere Video—Web-Based Production Short-Form Video<3 Minutes/Event

VEGA DIGITAL AWARDS

Gold (Centauri) Award—2019 IEEE-USA Website—Non-Profit

Gold (Centauri) Award—2019 IEEE-USA InSight—Non-Profit

Bronze (Arcturis) Award—2019 EVO Show Opener—Non-Profit

Bronze (Arturis) Award—2018 E-Annual Report—Non-Profit

IEEE-USA has received more than 90 awards and recognitions from peer professional organizations over the past five years.

IEEE-USA 2020 BOARD OF DIRECTORS



Front Row (L-R): Ramesh Nair, David Koehler, James Conrad, Mark Torres, Jill Gostin

Middle Row (L-R): James Look, Eduardo Palacio, Scott Tamashiro, Thomas Coughlin, Katherine Duncan, Chris Brantley

Back Row (L-R): Brendan Godfrey, Wolfram Bettermann, John Walz, Keith Moore, William Robinson

PRESIDENTIAL ENGAGEMENTS (2020)

The IEEE-USA President participates in numerous events each year as IEEE-USA's representative, serving as the public face of IEEE's U.S. members. The following was President Jim Conrad's official calendar for 2020:

Jan. 3	IEEE-USA Board Retreat/Meeting
Jan. 3–5	IEEE Rising Stars Conference (Las Vegas, NV)
Jan. 7–9	Region 6 Meeting (Los Angeles, CA)
Jan. 18–20	IEEE Board Retreat (Fukuoka, Japan)
Feb. 13–19	IEEE/IEEE-USA Board Meetings (Orlando, FL)
Feb. 21–23	IEEE-HKN Board Retreat (San Diego, CA)
March 12–15	Technical Program Chair, IEEE SoutheastCon (Virtual)
April 17	IEEE Board Meeting (Virtual)
May 6	IEEE-USA Board Meeting (Virtual)
May 21	IEEE Board Meeting (Virtual)
June 10	IEEE-USA Board Meeting (Virtual)
June 25	"We Are All Project Managers" (Region 3 Webinar)
June 26–29	IEEE Board Meeting Series (Virtual)
July 11	Region 1 and Region 4 Committee Meetings (Virtual)
July 21	IEEE-USA Board Meeting (Virtual)
Sept. 29	IEEE-USA Board Meeting (Virtual)
Sept. 30	IEEE Board Meeting (Virtual)
Oct. 14	Presentation to Region 3 Executive Committee (Virtual)
Oct. 28–Nov. 7	IEEE-HKN Experience (Virtual)
Oct. 30	Keynote (MOVE Project) at IEEE-ICCCA (Virtual)
Nov. 17	IEEE-USA Assembly
Nov. 20–26	IEEE/IEEE-USA Board Meeting Series (Virtual)
Dec. 2	Eastern NC Section Awards Ceremony (Virtual)
Dec. 4	Keynote (MOVE Project) at IEEE- ICIEV-IVPR (Virtual)
Dec. 14–15	General Chair, IEEE HONET Conference (Virtual)
Dec. 16	IEEE-USA 2020–2021 Board Strategic Retreat (Virtual)

In addition to representing IEEE-USA, President Conrad also participated in a number of other activities as an IEEE volunteer leader, including service on the IEEE HKN Board of Directors; the IEEE Membership Pricing Ad Hoc; and participation in other IEEE events and activities in Region 3, the Eastern North Carolina Section, and MOVE volunteer operations.

2020 IEEE-USA AWARDS AND RECOGNITIONS

Each year, the IEEE-USA Awards and Recognition Committee recommends, and the IEEE-USA Board of Directors approves, a slate of recipients for IEEE-USA's Awards and Recognitions. The 2020 Awards winners are highlighted below:

IEEE-USA Award for Distinguished Public Service

Andrei Iancu

For his outstanding work as Director of the U.S. Patent and Trademark Office updating patent regulations benefiting IEEE's U.S. members by clarifying and strengthening intellectual property protection and reducing administrative hurdles.

The John Meredith Professional Service Award

Christopher Sanderson

For exceptional leadership and creation of programming for the professional development of IEEE's U.S. members.

Harry Diamond Memorial Award

John Tague

For exceptional leadership and achievements in research and development for the U.S. Navy's technology enterprise.

George F. McClure Citations of Honor

Michael Andrews

For leadership promoting engineering professionalism and IEEE member engagement to students and young professionals through the development of the Rising Stars conference and numerous educational initiatives.

Zafar Taqvi

For enduring dedication in promoting professional activities—through contributions to member engagement; for inspiring and mentoring members; and for increasing IEEE visibility in industry.

IEEE-USA Entrepreneur Achievement Award for Leadership in Entrepreneurial Spirit

Azad Madni

For excellence in entrepreneurship over a lifetime of innovation mentorship, and philanthropy.

The Jim Watson Student Professional Awareness Achievement Award

Shilpita Biswas

For sustained leadership increasing IEEE's visibility with industry, growing student membership, and organizing professional development events.

IEEE-USA K-12 STEM Literacy Educator-Engineer Partnership Award

Stuart Wecker & Christine Busch

For building a highly successful, sustained partnership between the Tempe school district and IEEE volunteers to provide hands-on STEM workshops.

IEEE-USA Award for Distinguished Literary Contributions Furthering Public Understanding and the Advancement of the Engineering Profession

Karen Panetta

For co-authorship of the book, "Count Girls In," which serves as an inspiration for youth to pursue technology careers, and for lifelong commitment to STEM Literacy.

IEEE-USA Board of Directors Special Citation

Mark Soffa, Kai A. Flowers, and James Joseph Talley Montgomery

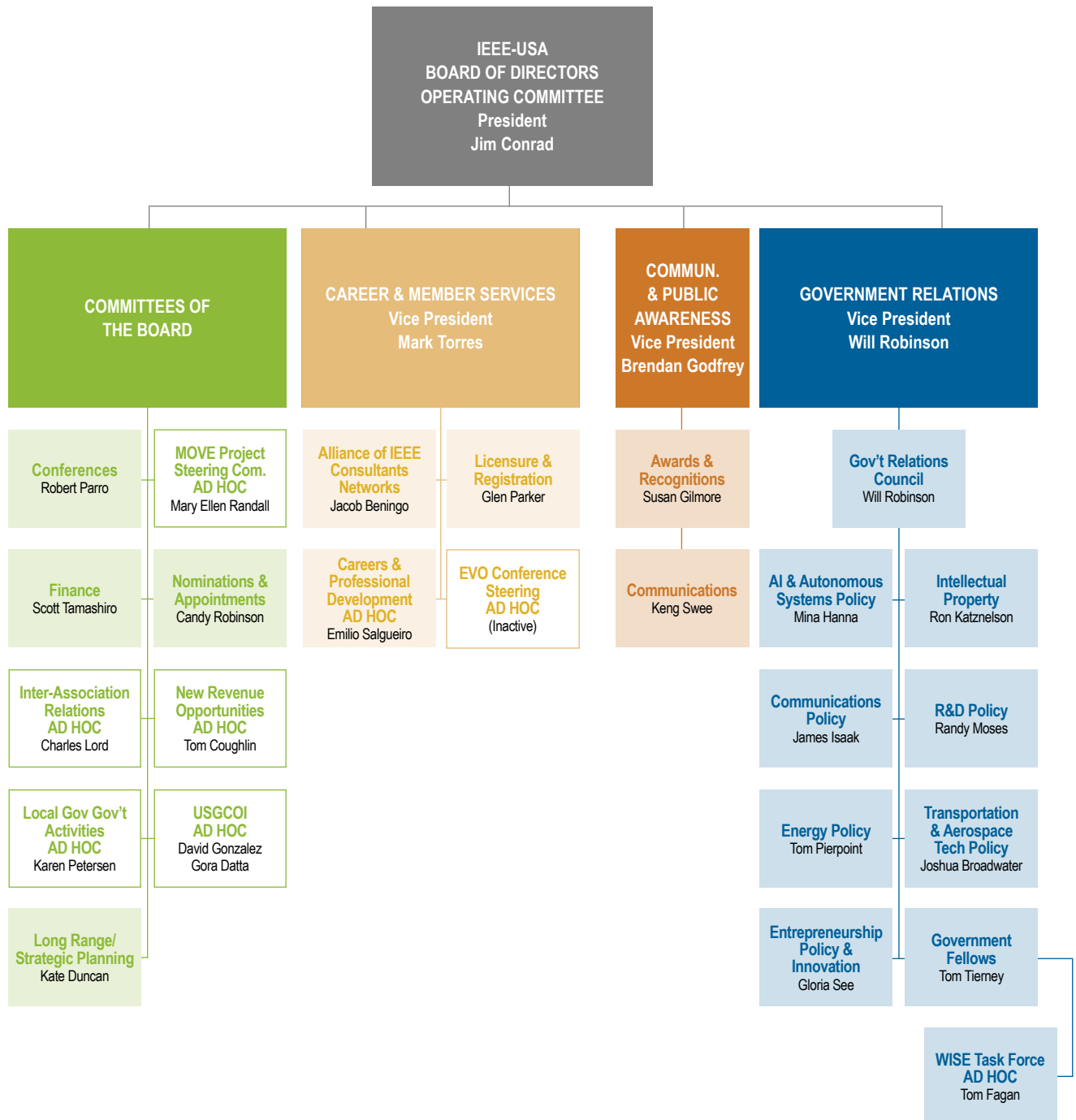
For creation and implementation of an innovative STEM education model during COVID-19 restrictions.

IEEE-USA's Robert S. Walleigh Award for Distinguished Contributions to Engineering Professionalism

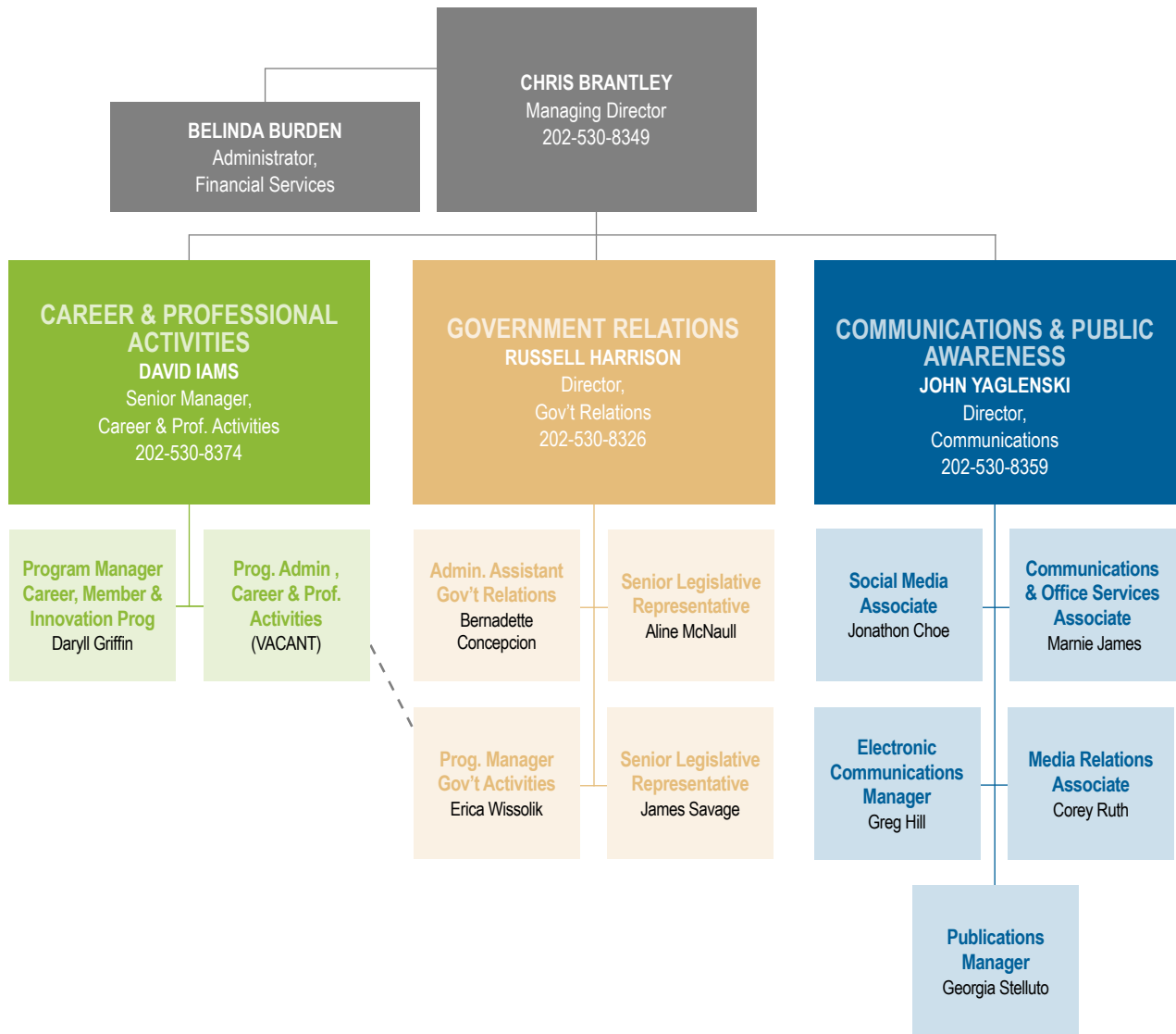
was not presented in 2020.

Recipients were honored at a virtual Awards Ceremony, live-cast on IEEE-USA's Facebook and YouTube channels, to a combined live audience of more than 450 participants, on 31 August 2020.

2020 IEEE-USA VOLUNTEER ORGANIZATION



2020 IEEE-USA STAFF ORGANIZATION



ABOUT THE ANNUAL REPORT

The IEEE-USA Annual Report highlights the mission, goals and programs of IEEE-USA, and our activities and achievements during 2020. This Report was produced and published to increase awareness of IEEE-USA, its efforts to influence public policy, and the programs and services it provides as a benefit to U.S. IEEE members, and to the general public. It also provides a reference for members seeking information on specific IEEE-USA programs or issues, and for those in search of opportunities to volunteer their time and expertise in support of their profession.

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IEEE-USA advances the public good and promotes the careers and public policy interests of nearly 160,000 engineering, computing and technology professionals, who are U.S. members of IEEE.

With more than 400,000 members, in over 160 countries, IEEE is dedicated to advancing technological innovation and excellence, for the benefit of humanity.

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