the institute

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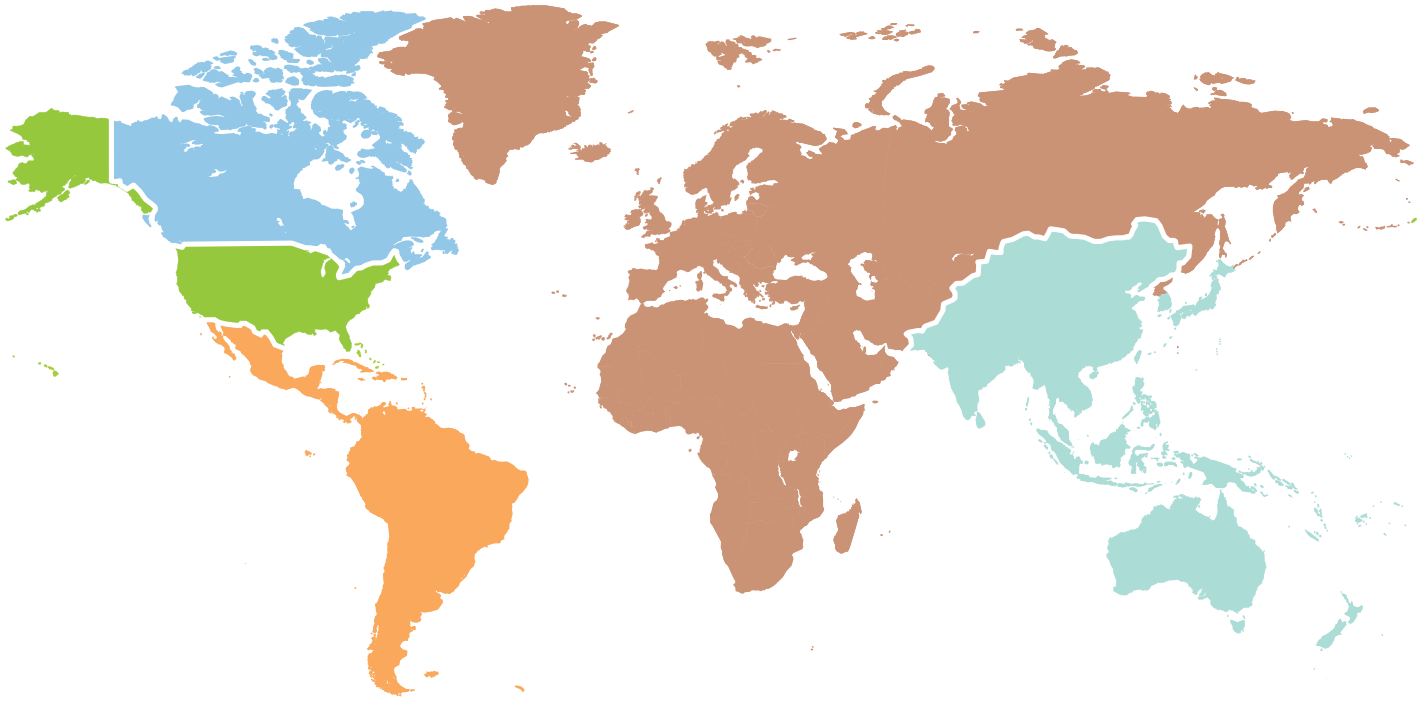
IEEE's Future Depends on Young Professionals

IEEE



REGION NEWS

REGION 1 — NORTHEASTERN UNITED STATES

- **Syracuse (N.Y.) Section** forms IEEE Solid-State Circuits Society chapter.

REGION 2 — EASTERN UNITED STATES

- **Delaware Bay Section** forms joint chapter of IEEE Communications and IEEE Signal Processing societies.
- **Washington/Northern Virginia Section** forms IEEE Systems Council chapter.

REGION 3 — SOUTHEASTERN UNITED STATES

- **Eastern North Carolina Section** forms IEEE Consultants Network (CN) affinity group.
- **East Tennessee Section** forms joint chapter of IEEE Power & Energy and IEEE Power Electronics societies.
- Student branch at **University of Virginia, Charlottesville,** forms IEEE Microwave Theory and Techniques Society chapter.

REGION 4 — CENTRAL UNITED STATES

- Student branch formed at **Lewis University, Romeoville, Ill.**
- Student branch at **University of Michigan, Ann Arbor,** forms IEEE Ultrasonics, Ferroelectronics, and Frequency Control Society chapter.

REGION 5 — SOUTHWESTERN UNITED STATES

- **High Plains (Northern Colorado, Southern Wyoming, and Southwest Nebraska) Section** forms IEEE Young Professionals (YP) affinity group.
- Student branch at **Louisiana State University, Baton Rouge,** forms IEEE Power & Energy Society chapter.

REGION 6 — WESTERN UNITED STATES

- **Albuquerque Section** forms IEEE Signal Processing Society chapter.
- Student branch at **University of New Mexico, Albuquerque,** forms IEEE Industry Applications Society chapter.
- **Seattle Section** forms IEEE CN affinity group.
- **Spokane (Wash.) Section** forms IEEE Women in Engineering (WIE) affinity group.

REGION 7 — CANADA

- Student branch at **University of Saskatchewan, Saskatoon,** forms IEEE Power & Energy Society chapter.

REGION 8 — EUROPE, MIDDLE EAST, AND AFRICA

- **Algeria Section** forms IEEE Geoscience and Remote Sensing Society chapter.
- Student branch formed at **Bournemouth University, Poole, England.**
- Student branch at **University of Bordeaux, France,** forms chapters of IEEE Instrumentation and Measurement and IEEE Solid-State Circuits societies.
- Student branch formed at **École Polytechnique, Paris.**
- **Lithuania Section** forms IEEE WIE affinity group.
- Student branch formed at **Sohar University, Oman.**
- **Poland Section** forms IEEE Engineering in Medicine and Biology Society chapter and IEEE WIE affinity group.
- **Portugal Section** forms chapters of IEEE Oceanic Engineering and IEEE Solid-State Circuits societies.
- Student branch at **ITMO University, St. Petersburg, Russia,** forms IEEE Robotics and Automation Society chapter.
- **Serbia and Montenegro Section** forms IEEE YP affinity group.
- Student branch at **Dokuz Eylül University, Izmir, Turkey,** forms IEEE Aerospace and Electronic Systems Society chapter.

REGION 9 — LATIN AMERICA

- Student branches formed in **Buenos Aires** at the **National University of San Martín** and **Universidad Tecnológica Nacional.**
- Student branches formed at **Universidad Privada Boliviana, La Paz, Bolivia.**
- Student branch formed at the **University of Cauca, Colombia.**
- Student branch at **Instituto Tecnológico de Costa Rica, Cartago,** forms chapters of IEEE Computer and IEEE Engineering in Medicine and Biology societies.
- Student branch formed in **Ecuador** at **Universidad de Guayaquil** and **Universidad Central del Ecuador, Quito.**
- Student branch at **Universidad de San Carlos de Guatemala, Guatemala City,** forms IEEE Industry Applications Society chapter.
- Student branch at **Universidad Nacional Autónoma de Honduras, Tegucigalpa,** forms IEEE Robotics and Automation Society chapter.
- Student branch formed at **Universidad Autónoma de Yucatán, Mérida, Mexico.**
- Student branch at **Instituto Tecnológico de Puebla, Mexico,** forms IEEE Power & Energy Society chapter.
- **Nicaragua Section** forms chapters of IEEE Communications Society and IEEE Society on Social Implications of Technology.
- Student branch at **Universidad del Zulia, Maracaibo, Venezuela,** forms IEEE Industry Applications Society chapter.

REGION 10 — ASIA AND PACIFIC

- **Northern Australia Section** forms IEEE WIE affinity group.
- **New South Wales (Australia) Section** forms IEEE Instrumentation and Measurement Society chapter.
- **Bangladesh Section** forms IEEE Computer Society chapter.
- **Chengdu (China) Section** forms IEEE Reliability Society chapter.
- **Xian (China) Section** forms IEEE Vehicular Technology Society chapter.
- Student branches in **India** at **S.B. Jain Institute of Technology, Management, and Research; St. Joseph's Institute of Technology,** and **Sreenidhi Institute of Science and Technology** form IEEE Computer Society chapters.
- **Malaysia Section** forms joint chapter of IEEE Sensors and IEEE Nanotechnology councils.
- **Nagoya (Japan) Section** forms IEEE Life Member affinity group.
- Student branch formed at **Shaheed Zulfikar Ali Bhutto Institute of Science and Technology, Karachi, Pakistan.**

COVER: SEAN MCCABE; THIS PAGE: ISTOCKPHOTO

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Calendar of Events

DECEMBER

11–14
IEEE International Conference on Big Data, Boston

18–19
IEEE International Women in Engineering Conference on Electrical and Computing Engineering, Dehradun, India

18–20
IEEE International Conference on High Performance Computing and Communications, Bangkok

JANUARY

6–8
IEEE Rising Stars Conference, Las Vegas

12–14
IEEE International Conference on Consumer Electronics, Las Vegas

FEBRUARY

11–15
IEEE International Solid-State Circuits Conference, San Francisco

14–18
IEEE Meeting Series, Lake Buena Vista, Fla.

24–28
IEEE International Symposium on High-Performance Computer Architecture, Vienna

BRIEFINGS

Moura Is 2018 President-Elect

JOSÉ M.F. MOURA, an IEEE Life Fellow, has been chosen as 2018 IEEE president-elect. He will begin serving as IEEE president on 1 January 2019. Moura, a candidate nominated by petition, received 18,883 votes in the election. Fellow Vincenzo Piuri garnered 13,976 votes, and Life Fellow Jacek M. Zurada, 12,879 votes.


José M. F. Moura

Moura is the Philip L. and Marsha Dowd University Professor in the electrical and computer engineering department at Carnegie Mellon. He is a member of the U.S. National Academy of Engineering, a Fellow of the U.S. National Academy of Inventors, a corresponding member of the Portugal Academy of Sciences, and a Fellow of the American Association for the Advancement of Science. He holds 14 patents and helped invent a detector found in more than 3 billion hard disk drives and 60 percent of all computers sold in the past 10 years. His technology has been licensed by Intel and Siemens, among others.

Moura was the 2016 vice president of IEEE Technical Activities and has served on the the IEEE Board of Directors. Visit http://www.josemoura.com to read his position statements and learn more about his goals for the organization.

To find out who was chosen as IEEE-USA president-elect, IEEE Standards Association president–elect, and for other positions, read the full annual election results at http://www.ieee.org/about/corporate/election.

—Amanda Davis

New Executive Director Named

STEPHEN WELBY has been chosen as IEEE's next executive director and chief operating officer. Starting on 2 January, he will work from IEEE's office in Piscataway, N.J., succeeding E. James "Jim" Prendergast, who is set to retire that day.


Stephen Welby

An IEEE senior member, Welby previously served as U.S. assistant secretary of defense for research and engineering. As the Department of Defense's chief technology officer, he led the largest research, development, and engineering organization in the world and oversaw an annual technology investment budget of US $12.5 billion. He also held senior leadership positions at the Defense Advanced Research Projects Agency.

His areas of technical expertise include space systems, robotics, machine learning, high-performance software, and sensor systems. *—A.D.*

Herz Award Goes to Mary Ward-Callan

SENIOR MEMBER Mary Ward-Callan was chosen to receive the 2017 IEEE Eric Herz Outstanding Staff Member Award "for leadership of and service to IEEE volunteers, and for commitment and care in IEEE Technical Activities for the benefit of IEEE." She will receive the award in November at the IEEE Meeting Series in Phoenix.

Ward-Callan is the managing director of IEEE Technical Activities, responsible for the strategic and operational leadership of 39 IEEE societies and seven councils, with nearly 200 publications; 1,000 events; and numerous standards, educational webinars, tutorials, and certifications. Ward-Callan also oversees IEEE Meetings, Conferences and Events, which supports almost 2,000 events per year. She manages a team of about 290 staff members.

In her 20 years as managing director, Ward-Callan has overseen the creation of IEEE Future Directions initiatives to new technical communities by delivering new products and services. These initiatives include Smart Grid, Internet of Things, 5G, Big Data, and Rebooting Computing.

Her team has organized conferences into a successful line of operations, now representing more than US $180 million in revenue. She also launched the IEEE Entrepreneurship program as well as the IEEE's award-winning Humanitarian Technology Challenge, which has become IEEE Smart Village, a priority initiative of the IEEE Foundation.

The IEEE Board of Directors created the award in 2005 to honor Eric Herz, an IEEE Life Fellow and longtime volunteer who served in many capacities, including IEEE general manager and executive director. He died last December at the age of 89.


Mary Ward-Callan

The award consists of a framed certificate, a cash prize, and travel expenses to the award presentation. It recognizes a present or past full-time IEEE staff member with at least 10 years of service for demonstrated contributions over a period of time.

The nominating deadline for the 2018 Herz Award is 15 January. Visit http://www.ieee.org/about/awards/recognitions_herz.html. *—A.D.*

IEEE Opens Office in Vienna

IEEE CONTINUES to expand its global presence with the opening in September of the European Technology Centre, in Vienna. It will provide support and services to the European technical commu-

CLOCKWISE FROM TOP RIGHT: CARNEGIE MELLON; IEEE; COURTESY OF STEPHEN WELBY; ISTOCKPHOTO (3)

IEEE in September opened its European Technology Centre in Vienna.

nity, focusing on the needs of academia, government, and industry. In addition, the center will contribute to IEEE's programs globally. The new office is located in the Austrian Standards Institute building.

"Establishing the European Technology Centre marks an important step in furthering IEEE's global, strategic activities within Europe, and beyond," says Karen Bartleson, 2017 IEEE president and CEO. "We see a strong foundation for collaboration and look forward to contributing important technology and policy initiatives that will help grow and strengthen the European science and innovation ecosystem."

Opening the European Technology Centre in Vienna provides IEEE with an opportunity to engage and participate in public policy by facilitating dialogue between European technologists and policymakers.

IEEE plans to continue to work in Europe on a number of strategic initiatives. These include the European Public Policy Initiative, which aims to increase the dialogue between the European technology community and European policymakers and regulators through expert working groups in areas such as energy and information and communications technology. Activities of the European Public Policy Initiative include developing public policy position statements and organizing policy-related events.

The center's initial goals also include supporting IEEE standards initiatives to help foster European and global innovation. In addition, the center will foster educational and career-enhancement opportunities for professionals to stay up to date on the latest technologies.

—Kathy Pretz

INSIDE

ONLINE

at theinstitute.ieee.org

TECH HISTORY TIMELINES
In celebration of its 40th anniversary year, *The Institute* presented an award-winning series of timelines highlighting technologies that have advanced significantly during the past four decades. Visit http://theinstitute.ieee.org/40anniversary.

IEEE: The Next Generation

IEEE'S FUTURE DEPENDS ON ITS young professionals. For one thing, they make up about a quarter of its membership. That's why the IEEE Young Professionals group made a concerted effort to be heard by IEEE's leadership about the need to update offerings to attract and retain younger members. To that end, the group last year developed a three-year business plan. Several of its first-year activities are underway.

In this special report, *The Institute* examines the group's efforts [article, right] and introduces readers to the leadership team that helped shape the business plan [p. 8]. One is IEEE Member Flavia Dinca, the group's vice chair of communications, whom we profile on page 18. She is spearheading the group's efforts to build a microvolunteering platform to help busy members get more involved in the organization.

Career planning and development, of importance to all engineers, are especially valuable to those just starting out. So we offer advice along with IEEE resources that can help [p. 15]. And we feature six tips for creating the best résumé for your first engineering job [p. 17].

One way to develop your career is to author articles. The online IEEE Author Center [p. 14] helps would-be authors understand the publication process for IEEE journals and magazines. The center offers a suite of authoring tools, educational resources, and step-by-step instructions for incorporating graphics and multimedia.

Many young professionals are opting out of working for a traditional company and instead are going off on their own. IEEE this year launched the N3XT Stars program [p. 16] to assist ventures with engineering-driven innovation at their core. Learn how the program aims to help founders take their startups to the next level.

In her last column for *The Institute*, IEEE President Karen Bartleson discusses the importance of increasing the number of women in the science, technology, engineering, and math fields [p. 10].

And speaking of the president, find out whom voters chose to be the 2018 IEEE president-elect [p. 4].

Visit theinstitute.ieee.org for our latest content. To comment on what you've read in this issue, email the editors: institute@ieee.org.

—Kathy Pretz, editor in chief

Young Professionals Group Prepares IEEE for the Future

Its efforts can benefit all members

BY KATHY PRETZ

TO STAY INNOVATIVE, companies must constantly anticipate the next big disruption to their industry. Sometimes that shakeup comes from people within the organization. For IEEE, it could come from the leaders of its Young Professionals group. They have become ever more vocal about the need for IEEE to modernize its offerings to gain and retain members, especially younger ones.

"It's no secret IEEE is an aging institution—both in the average age of its members [50] and in its approach to what today's engineers need from it," says Senior Member Rafal Sliz, the 2017–2018 chair of IEEE Young Professionals. "IEEE must accept the fact that for young professionals, belonging to an association no longer carries the weight it once did. But we are still the future of the organization, and we care about its success."

Young professionals have been taken seriously enough that one of the key initiatives supporting the goals of IEEE's 2015–2020 Strategic Plan is to "provide more opportunities, products, and services aimed at increasing our value to professionals working in the industry, particularly younger professionals and entrepreneurs."

And this year, for the first time, a representative from the Young Professionals group has been appointed as a nonvoting member on the IEEE Board of Directors.

"Not only are our young professionals the future of IEEE, but they are also an integral part of IEEE's core strength," IEEE President Karen Bartleson says. "Their enthusiasm and sense of camaraderie helps bolster our efforts to build strong partnerships and cooperation with industry leaders and others worldwide. Their efforts will shape our profession in profound ways—and in ways we can't even anticipate."

The IEEE Board approved the first year's activities in the group's three-year business plan (http://yp.ieee.org/bp), which

Clockwise from top right: Mohamed El Dallal, Raja Chiky, Kateryna Osypenko, Sara Barros, Rafal Sliz, and Flavia Dinca are among the IEEE Young Professionals volunteers helping IEEE provide more relevant products and services to engineers who are starting their careers.

RAFAL SLIZ

recommends ways to retain and attract young professionals. Along with the approval came US $250,000 for research and pilot programs.

The three-year plan got underway this year. If it succeeds, *every* member is likely to benefit.

SPREADING ITS WINGS

The IEEE Young Professionals group has been undergoing a transition in the past few years. It wants to be taken more seriously. It was established in 1998 as IEEE Graduates of the Last Decade (GOLD). In 2014 the group's leadership recommended that it be renamed. *GOLD*, it said, did not resonate with the people the group was meant to engage.

Another recommendation in 2014 was to change the qualifications for the group's members. Now IEEE members who graduated from university fewer than 15 years ago are considered to be part of IEEE Young Professionals. The previous limit was 10 years. Members beyond the 15-year mark are allowed to join, too, when they renew their annual IEEE membership. The reasoning is that career-based services targeted at young members also could benefit anyone who is changing careers or pursuing graduate work.

The group, which decided it needed to raise its visibility, rolled out its plan last year for organizing more networking events, forming partnerships with other IEEE groups and societies, and improving communications with members through blogs, webinars, and other means.

It had more than 100,000 members and 180 Young Professionals groups around the world in 2014, but membership was on the decline. The overall age of IEEE members was increasing. And a study showed that only 43 percent of YP members were "satisfied" with IEEE's offerings.

Moreover, although nearly 80 percent said they wanted to become more involved with IEEE, about 75 percent said they didn't know how to do so. They reported being unaware of opportunities, nor could they tell how much of their time some projects might require. Last year membership in YP dropped by more than 3 percent.

The seven-person Young Professionals executive committee [see p. 8] developed the three-year business plan to address those and other challenges to increasing membership.

The plan's goals include developing a platform for volunteering opportunities, expanding current networking programs, providing more money for local projects, creating a program that recognizes loyal volunteers, and investigating offering discounts on IEEE technical content.

"We realized we couldn't address all the needs, so we decided to first focus on retention and satisfaction of our members and volunteers," Sliz says. Needs related to career development will be addressed later, he says.

HAVING A SAY

The IEEE Board for the first time invited a dozen Young Professionals members to attend its annual three-day retreat, held this year in January in Kapolei, Hawaii. The goal: to brainstorm ideas for shaping IEEE's future and for ways to assist underserved communities. One suggestion was to support entrepreneurship as a way to engage young IEEE members and young people in general.

To that end, the Board endorsed the creation of what it calls a "global entrepreneurship and innovation ecosystem." It will start by supporting entrepreneurial activities in three to five developing countries that already have a strong IEEE presence. Countries are selected for economic reasons: low gross domestic product, low per-capita GDP, and youth unemployment of greater than 20 percent.

The IEEE entrepreneurship ecosystem leverages all the diverse assets the organization has, including articles and publications, videos and, most importantly, volunteers who can serve as experts and mentors. The IEEE Entrepreneurship program (http://entrepreneurship.ieee.org) is supporting the effort.

"I believe we've gained enough momentum to show the organization that young professionals are able to make a difference," says Sliz. He estimates that most of the programs proposed will be up and running by 2019. ◆

To find out more about the progress the group is making, visit http://yp.ieee.org/bp.

Meet the Leadership

Seven IEEE members are reshaping the Young Professionals program BY MONICA ROZENFELD

THE IEEE YOUNG Professionals program is run by tireless volunteers seeking to provide professional development opportunities for IEEE members who are in an early stage of their career. It offers networking events with technical experts and industry leaders as well as a host of volunteering roles. To increase and retain members, the program's leaders are working hard at marketing, communications, and forming partnerships with high-tech companies.

Here's the group's leadership team, which helped shape the Young Professionals business plan.

Rafal Sliz

2017 CHAIR

An IEEE senior member, Sliz began volunteering with IEEE Young Professionals as a graduate student in Oulu, Finland, in 2010. He started out as the Young Professionals chair of the IEEE Finland Section and went on to serve as chair of the Region 8 Young Professionals subcommittee in 2013 and 2014.

This year he took on a new role as chair of IEEE Young Professionals, driving the group's mission and positioning it to serve future generations of engineers. He has tried to make the program more relevant to young engineers by helping develop and implement the group's business plan. The plan includes modifying IEEE's products and services to make them more relevant and accessible to young engineers.

Sliz is a research fellow at the University of Toronto, focused on nanotechnology and printed electronics. His work involves the development and upscaling of quantum dot devices, QLEDs, and ultrasensitive sensors.

Mario Milicevic

PAST CHAIR

Milicevic served as chair of IEEE Young Professionals in 2015 and 2016 while pursuing a doctorate in electrical and computer engineering at the University of Toronto. He took the lead in shaping the group's business plan, which includes creating more volunteer roles, introducing programs to help retain members, and developing networking opportunities with other IEEE groups and leaders in industry.

He made it a point to increase the visibility of the group by having a booth and organizing mixers at high-profile conferences including the Consumer Electronics Show, South by Southwest, and the Web Summit, as well as at several IEEE flagship conferences. He was co-chair of the 2015 and 2016 IEEE N3XT summits, entrepreneurship events designed to equip the group's members with the skills and support they need to launch their own ventures.

For his day job, Milicevic is a communication systems engineer at MaxLinear, in Irvine, Calif. He develops algorithms and system-on-chip architectures for high-performance broadband and networking semiconductors.

Flavia Dinca

VICE CHAIR, COMMUNICATIONS

Dinca, who was chair of the Region 8 Young Professionals subcommittee in 2015, joined the IEEE Young Professionals leadership team this year.

In addition to helping develop the business plan, she is leading the microvolunteering and loyalty projects [see her profile on page 18], as well as spearheading communications efforts.

Dinca is pursuing a master's degree in information security at Stockholm University.

Ramesh Nair

VICE CHAIR, FUNDING OPPORTUNITIES

Nair has for more than eight years served as a volunteer helping out with student and Young Professionals activities.

In his current role, he developed the group's events funding portal, where members can request money for their activities. Four types of events are funded: IEEE Student Transition and Elevation Partnership activities, which help recent graduates enter the workforce; seed funding for new projects; meet-ups for members in the same geographic area; and signature events, held in conjunction with other tech conferences. Since the portal's launch in January, the group has funded more than 100 events.

Nair is a senior design automation engineer at Intel in Folsom, Calif.

Dinko Jakovljevic

VICE CHAIR, MARKETING AND DESIGN

Jakovljevic is responsible for Young Professionals branding. He has held positions on a number of IEEE committees during the past five years, starting out as a Croatia Section representative from the IEEE student branch at the Josip Juraj Strossmayer University of Osijek.

For the past three years, he has helped organize IEEEXtreme, a 24-hour coding competition for student members around the world. He's also cofounder of IEEEmadC, an annual contest for building mobile apps that benefit humanity.

A system integrator at Ericsson Nikola Tesla, in Zagreb, Croatia—an affiliate of the telecommunications equipment manufacturer—Jakovljevic specializes in command and control systems and traffic management.

In his spare time, he is developing software to help find missing children in Croatia.

Shashank Gaur

VICE CHAIR, INTERNAL PARTNERSHIPS

The graduate student member has been an IEEE volunteer for eight years, since founding the student branch at the BK Birla Institute of Engineering and Technology, Pilani, in India.

He is forming partnerships across IEEE technical societies to find new opportunities for Young Professionals members. That includes helping develop microvolunteering roles for those who want to get involved with the organization but don't have much time. He also helps members learn about and access IEEE resources that match their needs, and he contributes to the group's entrepreneurial efforts.

Gaur is a Ph.D. candidate at the CISTER research center in Porto, Portugal. His work focuses on context-aware computing in wireless sensor networks and the Internet of Things.

He is also a member of *The Institute*'s editorial advisory board.

Preeti Kovvali

VICE CHAIR, EXTERNAL PARTNERSHIPS

Kovvali seeks out companies and organizations that can work with Young Professionals. She is building relationships with high-tech companies for networking events, and recruiting companies to sponsor the group's events and projects. She also is responsible for social media efforts and the group's online presence.

A recipient of the 2016 Member and Geographic Activities Young Professionals Achievement Award, Kovvali has been involved with IEEE for a decade.

She is a project manager for Tech Mahindra, in Hyderabad, India, where she manages IT services for a Fortune 500 client and a Finnish retail giant. ◆

SEAN MCCABE

Foreground, left to right: Preeti Kovvali, Flavia Dinca, Shashank Gaur. Background, left to right: Rafal Sliz, Mario Milicevic, Dinko Jakovljevic, Ramesh Nair.

The Importance of Women in STEM

Encouraging participation to close the gender divide

KAREN BARTLESON IEEE PRESIDENT AND CEO

AS 2017 DRAWS to a close, I look back at my term in office and marvel at this amazing year. I've had remarkable opportunities to meet IEEE members around the world; engage with colleagues across academia, government, and industry to pursue new opportunities for our organization; and visit communities where IEEE's mission—advancing technology for the benefit of humanity—was in action making improvements on the ground.

I love my chosen profession. I have enjoyed an incredibly rewarding career as an electronics engineer. The idea of applying science and logic to solve problems for people has always inspired me. The opportunity to make a nice living while also making a positive difference in the world appealed to my fiscal side.

That is the true power of engineering—the life-changing effects that science and technology can bring to society.

In fact, during the summer's Board of Directors–led industry outreach meetings held across Australia, I learned about some incredible, real-life applications of this power during our visit to the Bionics Institute, a not-for-profit biomedical research organization just outside Melbourne.

It was especially exciting for me to see how far the discipline has developed with, for example, implantable devices that monitor neural activity in the brain or the peripheral nervous system and can stimulate nerves electrically for therapeutic applications. In college, I initially wanted to major in biomedical engineering, but the field was new and no degree programs were available yet.

At IEEE, we envision a vibrant community of professional men and women collectively using their diverse talents to innovate for the benefit of humanity. And now, more than ever, when girls and young women explore educational and professional possibilities, they see role models in the sciences and in technology they can identify with. Yet women in science, technology, engineering, and math (STEM) fields are still underrepresented in academia, industry, and government.

Developing a strong engineering workforce requires a robust educational system that begins with primary school and continues through the transition of recent university graduates into the workforce. Can we really afford to squander the talents and abilities of half the population—simply because they are female? Of course we cannot.

We must ensure that the next generation of female students who want to become scientists and engineers is a priority in educational systems. They must have access to the same resources and opportunities as their male counterparts. That's why there is no such thing as too much support for STEM education and encouragement of participation by our young women and girls. And—most importantly—there is no such thing as too much support for women in leadership roles: in the classroom, the boardroom, and the corridors of government.

Women in the workforce continue to face particular professional challenges—not the least of which involves reconciling parenthood and career—and a playing field that is not yet entirely level. As a young engineer, one of my biggest disappointments was learning of the pay disparity between men and women, and that young men were usually offered a higher starting salary than young women. I ended up working harder and smarter than my male counterparts to catch up to them on the compensation level.

Today, we need to continue to strive for more transparency and fairness in compensation. These issues must be discussed and must be resolved, not for women's sake but for engineering's sake and, by extension, for the sake of humankind. And those in positions of power—both women and men—must be strong leaders who ensure that gender discrimination is not tolerated and not permitted to continue.

Those in positions of power must be strong leaders who ensure that gender discrimination is not tolerated or permitted to continue

In considering the importance of having more women in our chosen fields, we should consider what we as engineers—male and female—can do to make that happen.

IEEE Women in Engineering, for example, is dedicated to transforming the lives of young girls and women via preuniversity outreach, technical seminars, humanitarian projects, networking events, and educational programs—all focused on inspiring females around the world to follow their academic interests into a career in engineering.

We should all aspire to be part of such pioneering groups that strive to break through barriers to bridge the gender divide. And we should make a concerted effort, through IEEE's many awards, to recognize women who have made noteworthy contributions. This is an important means of showing young girls that they, too, can be successful in a STEM career.

For our future, IEEE must stay relevant in an ever-changing world, not only technologically but also socially, economically, and culturally. IEEE must recognize, embrace, and deploy change to provide ongoing value and service to our diverse membership. We can do this by reinventing our activities to fit the modern world and by diversifying our leadership by age, gender, and geography. Our relevance depends on providing an environment where each new generation of engineers and scientists—women and men—can contribute to a positive future for all of society.

Please share your thoughts with me at president@ieee.org ◆

TJ KLEIN

the institute

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Sparking Conversation

Several articles and blog entries on our website led to lively discussions in their comments sections. To join the debate, view the posts below by visiting http://theinstitute.ieee.org/dec17responses.

ARE YOU FOR OR AGAINST NET NEUTRALITY?

At press time, the U.S. Federal Communications Commission (FCC) was proposing getting rid of Net neutrality rules established under the Obama administration, which in 2015 reclassified the Internet as a public utility, similar to electricity and water. The rules prevent Internet service providers from blocking, slowing, or offering paid prioritization of websites.

Major technology companies are protesting the revocation plans, which could limit users' access to Web content. More than 14 million public comments have been filed both for and against the changes. Where do you stand?

Internet service providers already offer tiered service. Subscribers can pay more and theoretically get faster service. I generally favor less government regulation, but in this case, the ISPs have proven themselves untrustworthy.

—Chris

The Internet is not a commodity paid for by stockholders and provided for free to the public. The costs of Internet access are paid by the users. I have to pay my cellphone and Internet bill every month, and therefore I insist on getting full and unfettered access to whichever websites I choose to visit. The idea that someone wants to slow or limit my access because they want more money makes me angry.

—Bob Kruse

I think ISPs should have the freedom to experiment with various business models, including providing preferential treatment to some customers for a fee. However, there should be measures to ensure transparency, and ISPs should still provide full access to nonpreferred websites.

—Feng Ouyang

Because the Internet has become essential for many things, including applying for jobs, paying bills, banking, and other financial transactions—often with no choice of an alternative—it should be regulated as a public utility. That's why I favor Net neutrality.

—pjgeneva

Revoking Net neutrality is a step toward censorship by government and large corporations that want to control the thoughts of the general public.

—Matt

The article conjures up a bogeyman: the notion that ISPs might censor websites. But in fact, no ISP has ever censored legal third-party content.

The so-called *neutrality* regulations are not at all neutral. They tie the hands and strip the profits of ISPs to benefit large, monopolistic "edge providers" such as Google and Facebook. They make Internet service slower and more expensive and discourage innovation and investment. (No new ISPs have formed since the FCC passed its most recent regulations because investors have been scared away.)

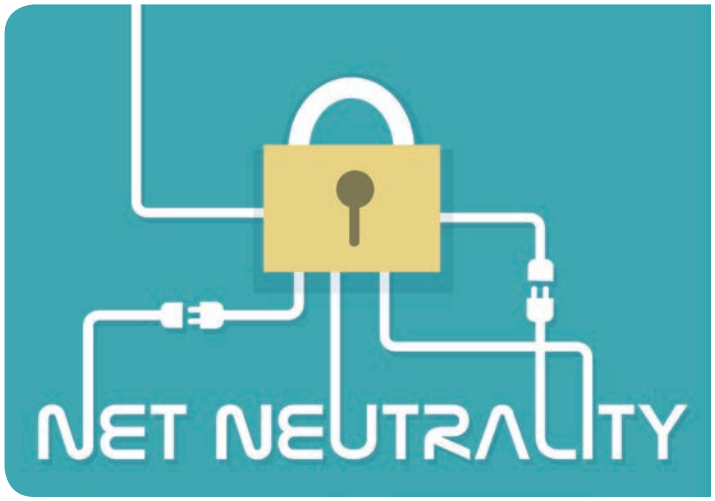
Government regulation of *any* communications medium is dangerous because it paves the way for invasion of privacy and censorship.

—Brett Glass

Google and Facebook are constantly fighting to avoid losing their place in the market. Remember MySpace? When Facebook started, it was a given that MySpace owned the social media market. And then there's the new company that you haven't even heard of yet. This is exactly the kind of competition that markets should have.

The capital investment required to form an ISP is so significant and the government relationships you must develop are so significant that it's just not something very many companies are going to do.

Meanwhile, if websites had to pay ISPs for access to customers, the next great startup would never get started unless some rich venture capitalist bought into them and paid off the right ISP. That's how you stifle innovation. To protect free markets, you need to avoid collusion between



BAKHTIAR ZEIN/ALAMY

those who bring the customers and those who provide services to these customers. ***—BVE***

WOULD YOU LET YOUR EMPLOYER IMPLANT A MICROCHIP IN YOUR HAND?

More than half the 80 employees at Three Square Market, a technology company in River Falls, Wis., said yes when asked if they wanted the company to implant a microchip in their hand, to be used in place of a swipe badge. In August, the company held a "chip party," where employees let the company insert a US $300 microchip, the size of a grain of rice, into their hand between the thumb and forefinger.

The chip can be used for such things as entering the office building and paying for meals in the cafeteria. It is free to employees and can be removed.

This practice raises a number of questions. What are the possible health ramifications with this device or future employers' devices? Who is authorized to insert these chips, and how are they trained and certified? How can the chips be removed, and at whose expense? Will this lead the government to impose a similar requirement for everyone?

Crime-prevention and crime-solving applications would be great. But the potential for abuse of this technology is huge. Governments and policies change over time, and it will be too late for those who have already given up their freedom to say no to such intrusion.

—Joe

I suspect implantable RFID chips will become commonplace, just like cellphones have. Early on, cellphone detractors pointed out the information being transmitted by the devices could be collected and used against the user, but it made no difference. Anyone insisting there was an issue to be discussed was dismissed as a conspiracy theorist. Today, thanks to Edward Snowden, we know that that the U.S. government had not only been collecting call information but recording all our phone calls "just in case."

—Jeff

SHOULD CHILDREN BE TAUGHT TO THINK LIKE COMPUTERS?

In a kindergarten classroom at the Eliot-Pearson Children's School, in Medford, Mass., pupils arrange wooden blocks imprinted with bar codes into a sequence that instructs a robot to spin, shake, or perform another action. The blocks snap together to complete a sequence for the child to scan and the robot to act out.

The children are engaging in more than basic programming. They are being taught to think like a computer, according to an article in The New York Times. *Do you think it's important for children to be taught to think like computers? Might there be unintended consequences?*

I would argue that we are not teaching children to think like computers but rather to think logically. Simple logic is sadly lacking in far too many young folks these days—not to mention some of us old dinosaurs.

—Mark Johnson

When you meet adults who can't think like computers, note how much harder it is to show them how to use one. Failing to teach children to think logically gives them a lifelong handicap.

—Michael LaRocca

FIVE WAYS TO ENGAGE STUDENT MEMBERS

With the start of the school year at many universities, leaders of IEEE student branches and chapters of IEEE's honor society, IEEE–Eta Kappa Nu, were looking to recruit new members and get current ones more involved. There are several ways to accomplish those goals, as well as IEEE resources that can help. They include engaging with industry, helping students with grant and scholarship applications, and organizing humanitarian activities, hackathons, and social events.

I encourage university students to get involved with STEM (science, technology, engineering, and math) programs for kids in kindergarten through high school. However, university students and young engineers often say they're too busy to get involved or they don't think IEEE can really benefit them that much in their education or career. Students often miss the message that IEEE is a professional and personal development organization.

Whether we realize it or not, our future is in their hands, and we must do better than leave it to chance.

—Qusi Alqaraz

An IEEE member who wishes to remain anonymous wrote the following blog post.

WORKPLACE HARASSMENT IS NOT JUST A WOMEN'S ISSUE

I worked as an engineer for 30 years, moving up the career ladder. That was until I trusted people from my employer's human resources department. I went to them with allegations about misconduct by a high-powered executive who made lewd and inappropriate comments. I believe I lost my job because I reported him to HR. That was in 2015, and my world turned upside down.

My story was covered by CBS News and other media outlets, and people took notice. Engineers wrote open letters—more than 80 percent of whom were men—expressing their sorrow and deep concern about what happened. Many of them knew of me and my work.

An online grassroots petition, Women in STEM Matter, launched afterward, requested the president of my former organization to handle my situation fairly. About 2,500 people signed it, with hundreds of comments added expressing opinions in hopes of encouraging the top leader to do what was right.

Although there was no response from my company, the engineering community stepped up on my behalf. I am deeply grateful for that and want to express my sincere thanks. If you see abuse of power, whether it's in the form of bullying or sexual misconduct, continue to speak up and do so as a team, because there is power (and job security) in numbers.

I agree entirely. Bullying is practiced by both sexes and on both sexes. A bully will seize on any perceived vulnerability and, unfortunately, there are individuals who view women as vulnerable. It is possible to ignore bullying by a manager only for a limited time, and it is almost impossible to deal with unless the organization is set up to handle it properly. There are problems even then unless the bullying is witnessed by a third party.

A partial solution would be to institute blameless transfers when harassment can't be proven, and offer both parties appropriate counseling.

—Stromer

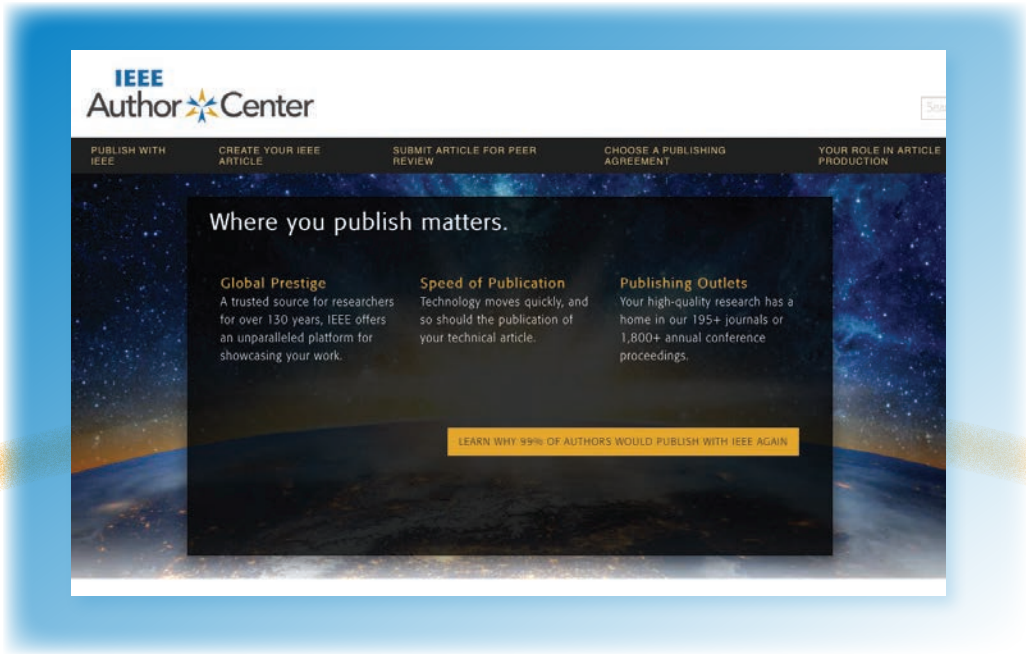
This problem may have a technical solution: a smartphone app that can be discreetly turned on to record conversations in the workplace. An audio recording of an event would make it hard to fire the person who reported it. And the app might make offenders more conscious of how they treat others.

—H. Keith Henson

ISTOCKPHOTO (2)

Resource Makes It Easier for Authors to Publish With IEEE

Author Center offers checklists, tools, and educational resources BY KATHY PRETZ



THE ONLINE IEEE AUTHOR Center, which helps those who write articles for IEEE journals and magazines understand the publication process, provides step-by-step instructions and a suite of tools.

The new website breaks down the article life cycle into sections. The Create Your IEEE Article tab provides authoring tools and templates; guidance on the use of abstracts, equations, and other text; instructions for using graphics, such as file formats and display resolutions; and ways to prepare supplemental material such as multimedia.

Once you've finished writing your paper, you'll want to refer to the checklist in the Submit Article for Peer Review section. It covers IEEE's requirements for article submission and peer review as well as how the editor determines whether to publish your article and how you'll be notified.

If your article is accepted, you'll be asked to complete a publishing agreement. The options are explained in the Choose a Publishing Agreement section.

The Your Role in Article Production section explains what happens after an article is accepted.

Suggestions for increasing the visibility of your article can be found under the When Your Article Is Published tab.

RESOURCES GALORE

Even before you've written a single word, you can find tools that help authors prepare an article for submission. The Author Center keeps them on a menu that appears on every page. The five tools are the IEEE Publication Recommender, which can help you find the best publication for your article; templates that can help you format manuscripts; the Graphics Analyzer, which checks your images; the PDF Checker for uploading attachments; and the Reference Preparation Assistant, which verifies links to other articles.

The Author Center also links to additional resources such as IEEE Collabratec. This scholarly collaboration network integrates authoring and productivity tools. Its IEEE AuthorLab, a forum on publishing in IEEE journals, has nearly 10,000 participants who share ideas related to publishing articles.

There are also educational resources such as video tutorials and live educational events.

Also from the website, you can subscribe to the monthly *Authors@IEEE* newsletter, which includes publishing tips and insights. ◆

This article originally appeared on our website in July. Visit the Author Center at http://ieeeauthorcenter.ieee.org.

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Professional Development Is Key

Most young professionals who join IEEE are looking to move up the ladder BY MONICA ROZENFELD

ISTOCKPHOTO

THERE ARE MANY reasons to join IEEE, including access to technical research and conferences; networking and volunteer opportunities; and benefits. But for young professionals just starting their journey in the workplace, career development is number one.

That's according to a study conducted last year for IEEE Young Professionals in which members were asked what they were looking for from the organization. The results were clear: Young professionals want resources to help them land a job and move up the career ladder once they're in the workforce. The findings validated that the Young Professionals business plan [see p. 6] is on track to better serve members.

"IEEE is listening to what young professionals want so we can improve their membership experience," says Lisa Delventhal, manager of the IEEE Young Professionals program, in Piscataway, N.J. "We want to make the Young Professionals program something members cannot step away from—one that is invaluable to their career."

HEAR THEM OUT

One key finding of the study is that graduates entering the workforce might not understand what career planning and development is. Recent grads rated their career planning efforts at 35 or lower out of a possible score of 100. They used words such as *uncertain* and *cloudy* to describe their plans.

Moreover, young professionals want to hear personal stories about how others navigated their career paths and the choices they made along the way. "They want a personal connection with members, not a commercial about why being part of IEEE is so great," says Kristen Mahan, program specialist of IEEE Young Professionals.

Respondents said they want to build their professional reputation—not just in their workplace but also in the engineering field.

They also have a number of career concerns including difficulty in finding a job out of college, paying off student debt, and starting a family. As one study participant said: "Have a dream but also a Plan B."

AVAILABLE RESOURCES

To help its members do well in their careers, the Young Professionals program is making a concerted effort to connect members to one another, both locally in person and virtually, and to increase awareness of available resources.

The resources include the IEEE Job Site, which lists open positions, and the IEEE ResumeLab, which can help members write better résumés and cover letters. Both can be found on IEEE Collabratec, where members can join its IEEE Young Professionals community, which now includes more than 12,000 people. There they can learn about professional development opportunities, IEEE products and services, and upcoming conferences.

Members can use IEEE Collabratec to join technical forums, co-author articles with researchers from around the world, and get involved in projects that offer exposure in the engineering community.

Young professionals want to hear about how other members navigated their career paths

IEEE Collabratec also offers mentoring services. Members can search for a potential mentor based on a technical specialty and the language spoken. A mentor can help with career planning and offer advice on continuing-education courses. Young professionals can sign up to be a mentor—which not only looks good on their résumé but also can help them grow their personal network and gain valuable experience.

As one member said in the study, "Having this kind of support provides peace of mind." ◆

IEEE N3XT Stars Program Helps Tech Startups Emerge

Initiative connects founders with expertise and funding BY MONICA ROZENFELD

IEEE THIS YEAR LAUNCHED N3XT Stars, a program that seeks out ventures with engineering-driven innovation at their core and that align with IEEE's mission to advance technology for humanity. The program aims to help founders take their ventures to the next level by connecting them with technical experts, funding sources, strategic partners, and news media exposure.

The entrepreneurs don't have to be IEEE members, but if selected for the program they receive free IEEE membership and access to the organization's products and services.

IEEE members with experience in entrepreneurship serve as judges and decide which startups to tap for the program.

To seek out IEEE's first group of N3XT Stars, IEEE volunteers and staff members met with hundreds of entrepreneurs at two of this year's largest startup events: the Launch Festival in April in San Francisco and Collision in May in New Orleans. Ten startups were selected.

MEET THE ENTREPRENEURS

Aclima, a startup in San Francisco, deploys large-scale sensor networks to map the environment in real time. The technology is integrated with Google's Street View cars in certain cities to monitor air quality. The data, which includes carbon-dioxide and pollutant levels, is streamed from the vehicles to Aclima's custom-built visualization tools and maps. That lets people see the air quality in their neighborhood at that moment, as well as track how it changed during the course of days or months.

The technology is "a Fitbit for the planet," Kim Hunter, the company's spokeswoman, said in an IEEE.tv video. The hope is that the pollution maps the service provides will encourage cities to improve their air quality.

In another video, Lakshmeesh Sridharan, who launched Cattleya Technosys, an Internet-of-Things startup in Bangalore, India, discusses how his company provides security surveillance and other services. Clients include banks, government agencies, and retailers.

Other startups include DroneSeed, a Seattle company whose drones spray herbicides on forests' invasive species and might one day plant seeds for reforestation. Another, MCThings, connects items to the Internet with tracking sensors to help monitor them in real time. The sensors can be embedded on individual food and retail shipment packages, on machinery, and even on livestock. Located in Cochrane, Alta., Canada, the startup uses its technology to monitor for factors such as temperature, location, and theft.

Beyond startups that align with IEEE's mission, IEEE Member Allan Tear says judges looked for traits that make a company successful. These include a solid team that has business knowledge and can clearly demonstrate that a need exists for its product or service. Tear is chair of the IEEE Entrepreneurship committee, which oversees N3XT Stars. He helped found Betaspring, an early-stage investment firm in Providence, R.I., focused on technology ventures.

IEEE Member Samantha Snabes, who helped found re:3D of Austin, Texas, was a judge. Her company makes Gigabot, an industrial-strength printer that produces objects about 30 times larger than leading desktop 3D printers. IEEE Member Sasha Hoffman, another judge, is cofounder and CEO of Fuzzy Compass, a startup in Boston that connects people with travel bloggers who, for a fee, can help them plan their trips.

MOVING ON UP

IEEE N3XT Stars is aiding the entrepreneurs in several ways. For example, it helped a venture in India bring its product to the U.S. market. The program has also connected founders with IEEE experts from academia and industry to assist with R&D and help them incorporate technical standards. Experts can also help founders understand government regulations that might impact their business.

N3XT Stars is working on organizing in-person and virtual events to help founders expand their businesses by finding investors and growing their team. It's also working on getting them more visibility. IEEE.tv captured the founders' stories about how they launched and grew their ventures. Those tales have been shared on IEEE social media networks and websites to promote the ventures and provide examples for other entrepreneurs, Tear says.

"The next wave of innovation, whether in artificial intelligence, blockchain, drones, or robotics, will be coming to us courtesy of startups," Tear says. "It's important for IEEE to be in the startup space. This is where our future members will come from." ◆

Volunteers and staff members from the IEEE Entrepreneurship committee serve as judges to select startups for IEEE N3XT Stars.

This article appeared on our website in August.

IEEE ENTREPRENEURSHIP

FROM Digi-Key ELECTRONICS

Six Résumé-Building Tips for Entry-Level Engineers

Considerations for setting yourself apart as you pursue your next gig in the engineering field

BY JENNIFER BOSAVAGE

THE FIELD of engineering comprises the number one entry-level job, according to a recent study by WalletHub. This is certainly welcome news to those entering the workforce with an engineering degree. The availability of immediate opportunities—combined with excellent starting salaries and growth potential—makes engineering a wise career choice.

The future for engineers appears bright as well: The number of related jobs in the United States grew 0.1 percent in March from February to almost 2.6 million, according to the TechServe Alliance, an association of IT and engineering staffing companies. Further, the year-over-year increase was greater than 1 percent for the first time in two years.

However, while many excellent engineering jobs are available, plenty of qualified candidates are looking for positions as well. A thoughtfully written résumé should be enticing enough to land an interview as well as be a point of reference during the conversation. In addition, it's a physical reminder to the interviewer of your credentials and, hopefully, of your personality after you have left the building. Your résumé should be tailored every time it's submitted, showcasing your experiences and the skills most relevant for that particular position.

Here are six tips for creating the best résumé for your first engineering job.

1 AVOID OVERUSE OF INDUSTRY JARGON

Using acronyms and engineering terms doesn't make you sound smarter. Your course load and extracurricular activities will, however.

The first stop your résumé will make is likely at human resources, not with another engineer. To get the attention of that human resources expert, write your cover letter in a manner that everyone understands. Some engineering jargon in your résumé can show your level of understanding, but be sure to showcase your accomplishments rather than your knowledge of insider terminology.

2 DEMONSTRATE YOU ARE A TEAM PLAYER

Engineers often work on teams. Employers want to know that you can work with other people, express your ideas clearly, listen to others, and collaborate. Therefore, include any experience you have in being a part of a team, especially if you were a leader. Summer jobs, volunteer work, and personal projects that received public recognition are perfect for this purpose. It's acceptable to include work experience and other activities that aren't directly related to the position you're looking at because soft skills—such as team building, communication, and delegating—are transferrable. Start each description with an action verb, and do not use first person or pronouns. Include what you did, how you did it, and why, while remaining focused on the results.

3 NAME-DROPPING IS OKAY

Did you study under an engineer who works or used to work for the company you're applying to? If so, definitely mention that person in the description of the jobs you've performed or classes you've taken. If you did poorly in the class, however, you may want to omit that information.

4 INCLUDE A SECTION ON RELEVANT ACADEMIC PROJECTS

Because you've just graduated, you will have more experience in school than in the workplace. Employers are interested in your courses to understand certain skills that you acquired through your coursework, and to learn whether you have concentrated in an area of interest, such as energy, or business.

5 LEAVE HIGH SCHOOL BEHIND

You should have a wealth of college experiences from which to draw by the time graduation rolls around. Unless directly related to the position you are seeking, remove your high school experiences. One particular exception is when applying to an organization where alumni from your school work. In such a case, include the high school name, location, and your graduation date at the bottom of the résumé.

6 CONSIDER INCLUDING A CAREER OBJECTIVE

In some cases, applicants find that including a career objective section helps organize each résumé they send out. Remember, it's fine to craft and send individual, personalized résumés. An objective can be helpful for résumés that showcase work that may not be clearly aligned with your career goals. Or simply include your objective in your cover letter, which should always be customized. Be careful not to sound grandiose in the objective. Convey the information about the type of position you are seeking, but don't be too specific as that may limit your options.

Don't forget to have someone—a friend, teacher, or parent—review your résumé. It's a good way to find typographical or spelling errors, as well as to clarify an unclear entry. Then, with your new diploma and finely-tuned résumé, you'll be ready to apply to engineering positions, get a great job, and begin your new career. ◆

Content sponsored by Digi-Key Electronics, a supporter of IEEE Young Professionals.

ISTOCKPHOTO

Helping Busy Members Get Involved With IEEE

Flavia Dinca spearheads an effort to promote flexible volunteering options

BY **AMANDA DAVIS**

TIME FOR MOST OF US is in short supply. And when you're just starting on your career and working long hours, there's practically no time to spare. But members who do have a few extra hours to volunteer often are unaware of which IEEE programs could use their help.

What if you could volunteer for just a few hours or for a weekend? And what if you could find all the opportunities listed on a single online platform, along with the amount of time and skills each endeavor requires?

That's the aim of the microvolunteering program proposed by the IEEE Young Professionals group. Members of IEEE Young Professionals are part of a pilot program; the goal is to expand it so that all IEEE members can benefit.

According to the 2016 IEEE member segmentation study, which gauged members' satisfaction with IEEE's products and services, 80 percent of young professionals—those who are 18 to 35 years old—say they want to be more engaged with the organization but can't find a way to do so. And no wonder. For existing volunteering roles, the average time commitment is between one and two years.

The microvolunteering effort is being spearheaded by IEEE Young Professionals' vice chair of communications, IEEE Member Flavia Dinca [left]. She is busy herself, and not just because she's pursuing a master's degree in information security from Stockholm University. Dinca is the group's representative for Regions 7, 8, 9, and 10, and she's on the IEEE ad hoc committee on engagement in Europe, which works to expand IEEE's connection with the continent's engineering community.

In this interview with *The Institute*, Dinca discusses how she hopes to make IEEE more appealing to younger members and how the organization has benefited her.

Tell us more about microvolunteering.

The idea is that IEEE should adapt its volunteering opportunities so busy members can get involved. So many young people are moving from university to the workplace, or raising children, and their lives can be really hectic. We want to welcome even small contributions. And we want to make it easier for members to know what volunteering opportunities are available.

The program will help them choose the right level of commitment based on their interests and skills, and the amount of time they're willing and able to spend. Such opportunities might include organizing a conference and developing a website for local IEEE groups.

IEEE Young Professionals will launch a microvolunteering online platform next year. IEEE groups will post descriptions of tasks that must be done, including details, like the skills needed. Each listing will include a contact person for more information.

What is IEEE doing for recent graduates?

IEEE Young Professionals is trying to add more benefits for them. Several new programs for doing this are in our business plan [see p. 6]. They include offering discounts on technical content, increasing the number of our networking events and meetings, and launching a program to recognize young professionals who volunteer.

Why did you get involved with IEEE?

I joined as a student member at the University of Southampton, England, in 2011, because some of my close friends belonged to its IEEE student branch. I wasn't in the engineering program at the time. The student branch was looking for a publicity officer, so I volunteered.

Once I graduated, I began to pursue a master's degree in information security. IEEE made the transition from sociology easier because it gave me an insider's view of the technical world.

How has IEEE benefited you the most?

A lot of my colleagues say that access to the latest technical information is the most important benefit. But for me, it's the chance to network and develop my soft skills. Volunteering with IEEE can give young professionals the chance to make mistakes and learn from others before they try things at their job.

At the end of the day, what really sets IEEE apart from other organizations is how incredibly diverse its members are. ◆

JOHAN LJUNGQVIST

Recognize an Innovator

Nominate a colleague for IEEE's highest awards BY **LYNN FRASSETTI**

EACH YEAR IEEE pays tribute to technical professionals whose outstanding contributions have made a lasting impact on technology, the engineering profession, or humanity. It does so through the IEEE Awards program, which seeks nominations annually for IEEE's top awards—medals, recognitions, and technical field awards—that are presented on behalf of the IEEE Board of Directors.

The Medals and Recognitions are presented at the annual IEEE Honors Ceremony. The 2018 event is scheduled for 11 May at the Palace Hotel in San Francisco, in conjunction with the IEEE Vision, Innovation, and Challenges Summit.

You don't have to be an IEEE member to receive an award or to nominate or endorse a candidate. Nominations for 2019 IEEE technical field awards are due by 15 January, and ones for medals and recognitions are due by 15 June. These are annual deadlines. For help with submitting a nomination, including award criteria, candidate eligibility, and submission guidelines, visit http://www.ieee.org/about/awards/awards_guidelines.html. For a list of all the top IEEE awards and to download nomination forms, visit http://www.ieee.org/awards.

The IEEE Awards Board has an ongoing initiative to increase diversity among candidates, including their technical discipline, geography, and gender. The board is also working to ensure a diverse group of volunteers on all the selection committees. You can help by nominating a colleague for one of the following awards.

IEEE Medal of Honor
For an exceptional contribution or an extraordinary career in the IEEE fields of interest.
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IEEE Alexander Graham Bell Medal
For exceptional contributions to communications and networking sciences and engineering.
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IEEE Edison Medal
For a career of meritorious achievement in electrical science, electrical engineering, or the electrical arts.
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IEEE Medal for Environmental and Safety Technologies
For outstanding accomplishments in the application of technology in the fields of interest of IEEE that improve the environment and/or public safety.
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For outstanding contributions in the leadership, planning, and administration of affairs of great value to the electrical and electronics engineering profession.
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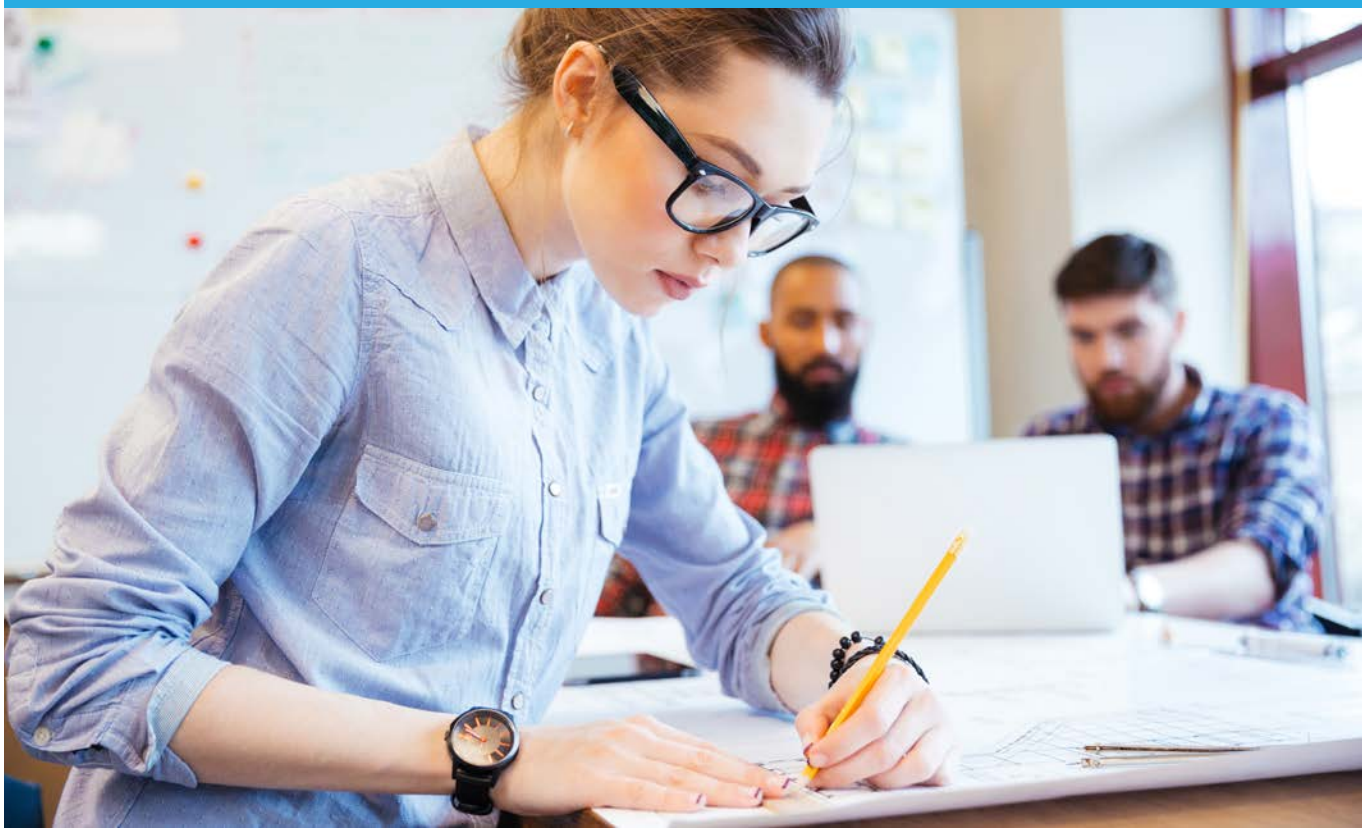

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