

Excellence
Collaboration
Innovation
Global Influence
Humanity

2011 | IEEE ANNUAL REPORT

Innovative Solutions Through Global Collaboration

Sustainability
Communication
Solutions
Leadership
Advancement
Interdisciplinary
Technology
Research
Development
One Voice

While the world benefits from
what is new, IEEE is focused
on what is next.

IEEE Annual Report



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Brazil team named IEEE Student Humanitarian Supreme with real-time e-health solution.

2011 Highlights

January

- › EngineeringforChange.org debuted with the launch of an online platform designed to enable technical professionals to collaborate on solutions for humanitarian and developmental challenges.

February

- › Interactive IEEE exhibit opened at B.M. Birla Science Centre in Hyderabad, India.
- › Three IEEE Milestones in Electrical Engineering and Computing dedicated—First Mercury Spacecraft, SPICE Circuit Simulation Program, Eel River High Voltage Direct Current Converter Station.

March

- › Leaders of the Indian technology sector participated in IEEE Industry Day, a two-day summit aimed at encouraging collaboration on humanitarian and technical projects. The event was held in Bangalore, India.

April

- › IEEE was named one of the Best Places to Work in New Jersey by *NJBIZ*, a weekly New Jersey business journal.
- › The IEEE Cloud Computing Initiative is launched. It is designed to serve as a catalyst for innovation in cloud computing with a focus on interoperability.

May

- › IEEE launched the IEEE Life Sciences Web portal to further its commitment to promoting engineering's role in cross-disciplinary solutions in life sciences.

June

- › IEEE and the Sirona Cares Foundation, with financial support from the IEEE Foundation, deployed battery-charging stations that supplied electricity to six regions of Haiti.

July

- › *IEEE Signal Processing Magazine*® was named the number one journal in the category of Electrical and Electronic Engineering by Thomson Reuters' Journal Citation Reports.

August

- › IEEE *Xplore*® digital library reached 3 million documents.
- › 1,100+ volunteer leaders gather in San Francisco, Calif., for IEEE Sections Congress.

September

- › IEEE and the Korean Agency for Technology and Standards (KATS) signed a Memorandum of Understanding to work cooperatively on standards development and distribution.
- › Attendees from 30 countries traveled to Beijing, China, for the second annual Smart Grid World Forum.
- › IEEE Insights blog debuted on Forbes.com.

October

- › More than 160 events worldwide commemorated IEEE Day.

November

- › *IEEE Spectrum*® published a special report on "Fukushima and the Future of Nuclear Power," including a detailed account of the worst nuclear disaster since Chernobyl. The multimedia report won the 2011 Jesse H. Neal Award for Best News Coverage.
- › IEEE and the Royal Society of Edinburgh signed a Memorandum of Understanding outlining future collaboration opportunities, including a project in life sciences.

December

- › IEEE membership exceeded 415,000 with approximately 50 percent of all members residing outside of North America.

Messages from the IEEE President and the Executive Director

IEEE entered 2011 as a strong and vigorous association, with more than 400,000 members around the world. We serve society and the profession energetically and indefatigably in several key technical and social areas. Among them are dissemination of knowledge in key technologies, development and distribution of major standards, and technical education. We give voice to the engineering, computing, and technology professions. We promote civic duty and engagement of professionals in improving human welfare and expanding educational opportunities. We help protect the environment. We convene major educational and planning forums worldwide. These forums connect and invigorate decision makers, innovators, inventors, developers, practitioners, students, and educators.

From this position of influence and professional authority, we strive to guarantee IEEE's future leadership role in all major fields of technology and key emerging areas. In 2011, we launched new initiatives at the intersection of electrical engineering, computer engineering, computer science, and the life sciences. We intensified our already-growing activities in all aspects of energy generation, development, and use—promoting and facilitating new ideas on sustainability, green energy, smart grids, and new energy sources. We instigated new initiatives on cloud computing and smart vehicles. Groups within IEEE put effort and collaborative thinking into new and emerging (or re-emerging) areas ranging from quantum communications to wireless transmission of electricity and from personalized medicine to crowdsourcing. Never have the three-million-document archives of IEEE—our journals, transactions, conference proceedings, standards, and online courses—been so comprehensive, accessible, exciting, and useful. Never have the legions of IEEE volunteers who support them—the authors, reviewers, editors, and developers of standards—been more involved, enthusiastic, and productive.

2011 was also a year of increased engagement of our members in the societal betterment of their communities. Our activities ranged from field projects in Haiti, India, Ghana, Uganda, Zimbabwe, Nicaragua, and Bangladesh to well-attended conferences with decision makers in major capital cities. We developed cooperative efforts with governments, United Nations agencies, and not-for-profit organizations from Philadelphia to Pretoria to Bangalore to Dubai. No less important, we have started an organizational effort to systematize and support these societally focused activities with proper budgeting and permanent organizational structure. As part of our community outreach efforts, in 2011 we have forayed into museums of

technology that serve large populations of pre-university students. We completed two large pilot museum projects in Montevideo, Uruguay, and Hyderabad, India, where IEEE volunteers created and installed new state-of-the-art exhibits for young visitors. These exhibits demonstrated the potential, usefulness, and beauty of new and emerging technologies. In addition to the benefit that the new displays provided to student audiences, they also fostered cooperation among volunteers from multiple countries and continents. Collaborative design and implementation of museum shows energized our volunteers and strengthened ties between members from different parts of the world.

In 2011, we continued our quest to make IEEE a major resource for members in their professional activities and career development. Our efforts include new continuing education opportunities, new subscription models in developing countries, and improved access to IEEE publication resources by all users. We developed better portals and user interfaces, conducted usability studies of existing assets, and adopted state-of-the-art support infrastructure. This is a never-ending improvement campaign in the service of our members and customers.

Finally, we continued to highlight past achievements of our community, honor leaders of our profession, and mark historical milestones. Among the individuals we recognized with major honors in 2011 were Morris Chang, Marcian Hoff, Ingrid Daubechies, and APJ Abdul Kalam. 2011 Milestones in Electrical Engineering and Computing commemorated the innovations of Thomas Alva Edison, Guglielmo Marconi, and Heike Kamerlingh Onnes. We also paid tribute to the engineers who developed the Mercury Spacecraft MA-6, the first broadcast satellite service, and the Apollo Guidance computer. Recognizing these discoveries, breakthroughs, and intellectual giants is done with the conviction that, as it has in its first 127 years, IEEE will continue to be the professional home of the brightest minds in technology—the Edisons, Marconis, Popovs, Kilbys, and Hoffs of the future.

Sincerely,



Moshe Kam

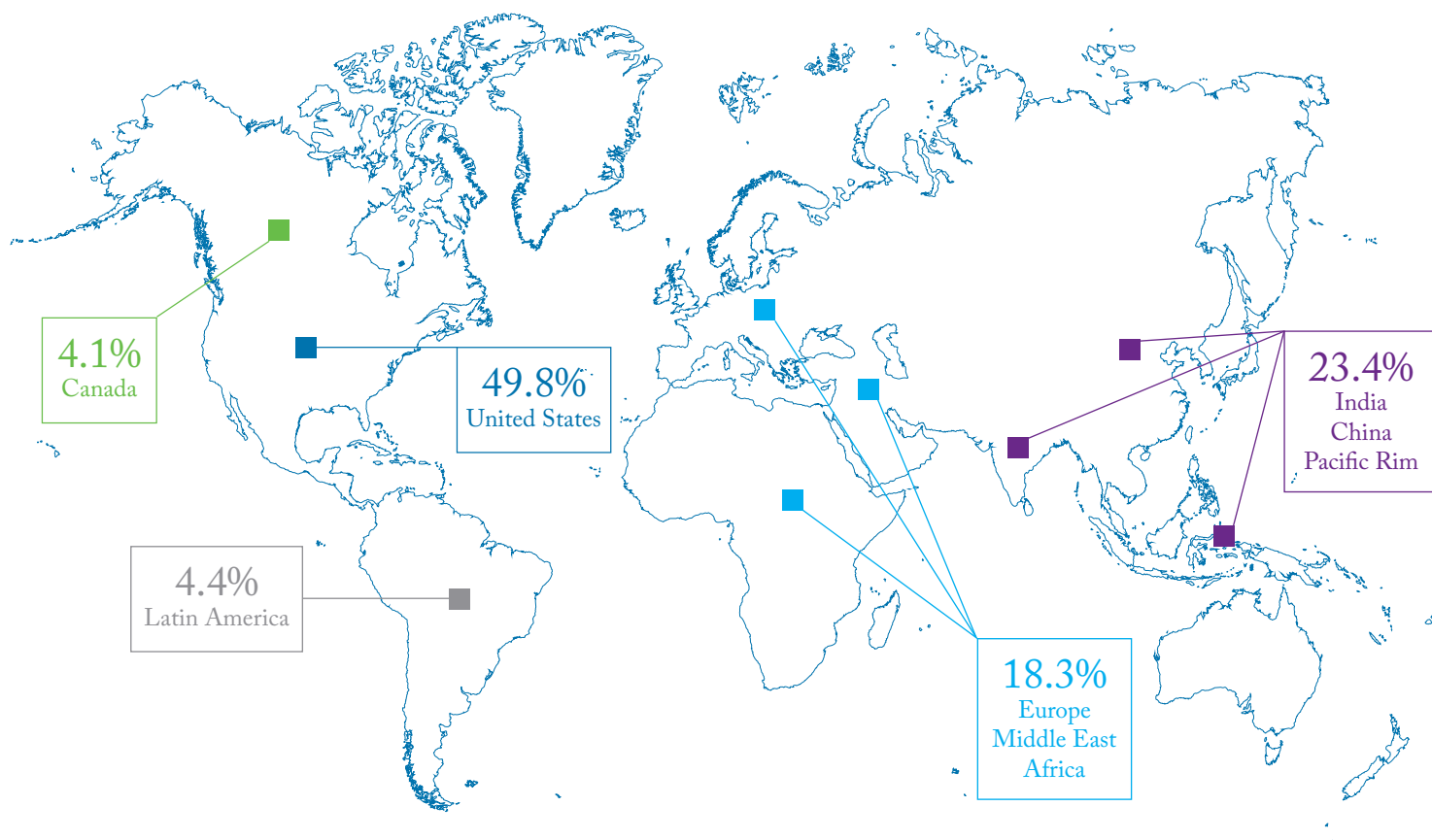
*2011 IEEE President
and CEO*



E. James Prendergast

*IEEE Executive Director
and COO*

Who We Are



IEEE Society Memberships

5,123 IEEE Aerospace and Electronic Systems Society	9,378 IEEE Engineering in Medicine and Biology Society	29,410 IEEE Power & Energy Society
8,450 IEEE Antennas and Propagation Society	3,519 IEEE Geoscience and Remote Sensing Society	7,634 IEEE Power Electronics Society
2,063 IEEE Broadcast Technology Society	5,667 IEEE Industrial Electronics Society	1,158 IEEE Professional Communication Society
71,895 IEEE Computer Society	10,184 IEEE Industry Applications Society	892 IEEE Product Safety Engineering Society
10,311 IEEE Circuits and Systems Society	3,623 IEEE Information Theory Society	9,627 IEEE Robotics and Automation Society
7,199 IEEE Computational Intelligence Society	4,450 IEEE Instrumentation and Measurement Society	1,964 IEEE Reliability Society
51,155 IEEE Communications Society	1,219 IEEE Intelligent Transportation Systems Society	16,371 IEEE Signal Processing Society
2,723 IEEE Components, Packaging, and Manufacturing Technology Society	3,158 IEEE Magnetics Society	1,737 IEEE Society on Social Implications of Technology
3,453 IEEE Consumer Electronics Society	12,129 IEEE Microwave Theory and Techniques Society	10,081 IEEE Solid-State Circuits Society
9,340 IEEE Control Systems Society	3,268 IEEE Nuclear and Plasma Sciences Society	4,955 IEEE Systems, Man, and Cybernetics Society
2,241 IEEE Dielectrics and Electrical Insulation Society	1,927 IEEE Oceanic Engineering Society	2,222 IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society
3,547 IEEE Education Society	6,603 IEEE Photonics Society	4,583 IEEE Vehicular Technology Society
4,172 IEEE Electromagnetic Compatibility Society		
10,929 IEEE Electron Devices Society		

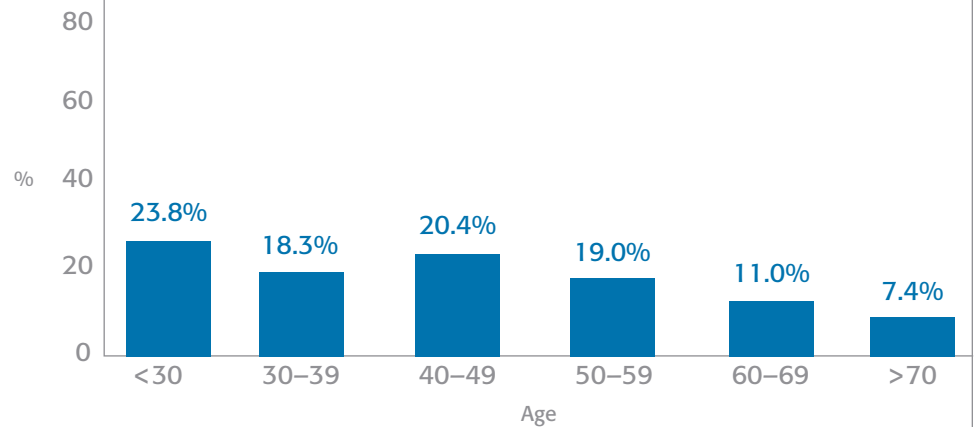
Total: 348,360 IEEE society members*

*Total number of IEEE society memberships includes affiliates who are not IEEE members.

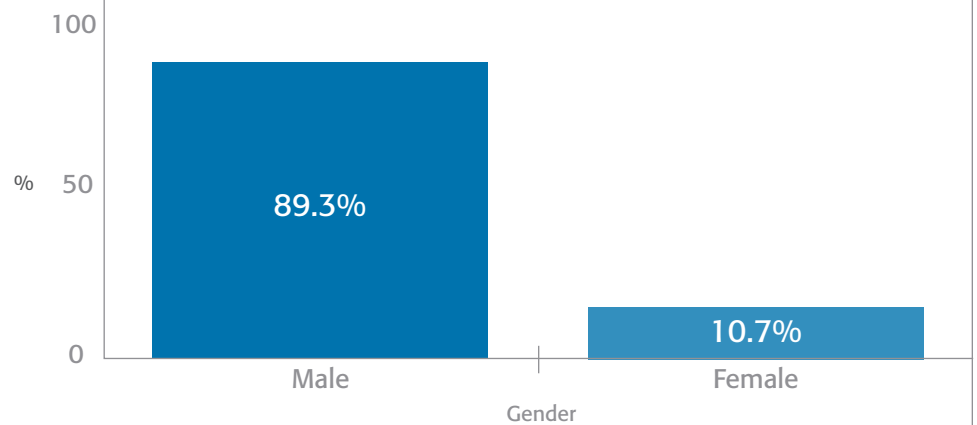
Membership Status

› Student Members	67,917
› Fellows	6,692
› Senior Members	33,749
› Members	251,842
› Associate Members	15,862
› Graduate School Members	39,895
› Honorary Members	32
› Total Membership	415,989

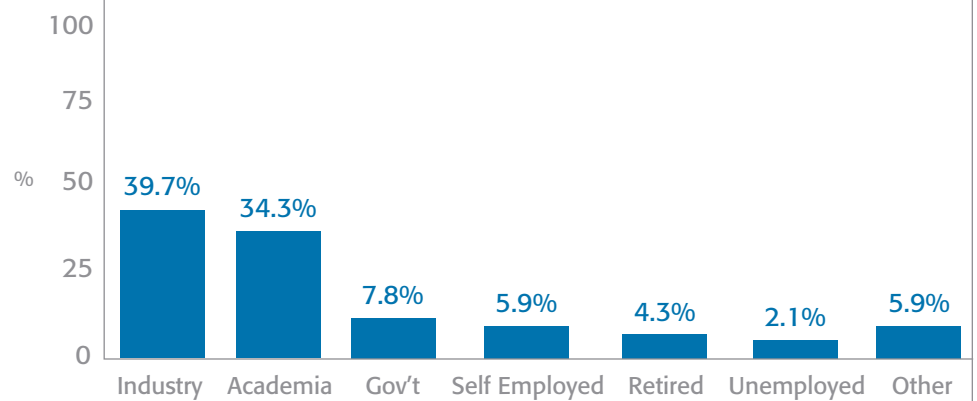
Age of Members



Gender



Members in Global Workforce







09

Serving Society

**IEEE fulfilled its mission of
advancing technology for
humanity throughout 2011.**

Around the world, IEEE and its members led projects that improved the quality of life in emerging economies through the application of new and existing technologies.

IEEE Expands Around the Globe

New collaborations bring numerous initiatives and solutions.

IEEE experienced exceptional global growth in 2011, opening doors to new market opportunities, advancing product innovation, and expanding IEEE programs to address local community needs. IEEE also formed new international partnerships with leading organizations to advance its position as a global catalyst for people who discover, develop, and deliver technology solutions.

On the Web, at conferences, and on the ground, IEEE made an impact and increased its visibility in some of today's fastest-growing technology fields.

IEEE: A Leader of Smart Grid Initiatives

As an organization with global reach and partnerships, IEEE continued to be a driving force in the movement to help nations achieve energy independence, a sustainable environment, and economic growth through the development of smart grid.

Leading the way was the IEEE Standards Association (IEEE-SA), which has developed nearly 100 standards relevant to smart grid, including IEEE 2030™, the first cross-discipline guideline for smart grid interoperability for the power engineering, communications, and information technology industries. In 2011, IEEE-SA launched the first long-term project on communications, which will explore smart grid beyond IEEE 2030.





The second annual Smart Grid World Forum sponsored by State Grid Corporation of China in partnership with IEEE created a unique opportunity for collaboration among industry executives, leaders in the academic and research community, policy makers, and government officials as they contribute to the evolution of Smart Grid.

Also in 2011, research groups were created to review power magnetic (solid-state transformers), wireless charging of electric vehicles, nano and molecular communications, and non-crashing vehicles. Their efforts will spur groundbreaking standardization and drive the future of electric power generation and distribution.

The IEEE Smart Grid™ Web portal grew significantly in 2011, providing expanded knowledge and tools to guide the understanding of smart grid challenges across industries and disciplines. During the year, more than 480,000 pages of information were viewed by visitors from more than 190 countries. The monthly IEEE Smart Grid Newsletter, available on the portal, offers exclusive content and sharp insight from experts actively involved

in the development and deployment of smart grid around the world.

Technologists Share Smart Grid Progress

The second annual Smart Grid World Forum was held in Beijing, China, in September 2011, attracting more than 400 attendees from 30 countries. Co-sponsored by IEEE and State Grid Corporation of China, the two-day event created a high-level platform for power sectors from around the world to exchange and share their progress and experiences in smart grid research and construction. The theme “Strong and Smart Grid—The Driving Force for Energy Development in the 21st Century,” guided delegations on a realistic and impartial assessment of the current state-of-the-art developments in smart grids.



IEEE Life Sciences: Pursuing Tomorrow's Solutions

In February 2011, the IEEE Board of Directors committed to establishing IEEE as a leader in the field of life sciences. Three primary goals were set: coordinate life sciences activities across IEEE, raise IEEE's public profile in the field, and boost IEEE membership in the life sciences community.

To support these goals, the IEEE Life Sciences Web portal was launched in June 2011. The portal is positioned as the premier global resource for life science technologies, information, and activities, as well as a forum for cross-disciplinary collaboration and problem solving.

During the year, 30 IEEE societies, councils, and committees launched programs to engage the life sciences community. One hundred events dedicated to life sciences were held, including the 2011 International Conference of the IEEE Engineering in Medicine and Biology Society in Boston, Mass.

In November, IEEE and the Royal Society of Edinburgh signed a Memorandum of Understanding outlining future collaboration opportunities in life sciences.





IEEE showed its commitment to cloud computing through the development of standards and seminars as well as providing a voice for the technology in the media.

IEEE Cloud Computing Initiative: Rising to the Challenge

IEEE is committed to the evolution of cloud computing. In 2011, the IEEE Cloud Computing Initiative was launched to inform and inspire innovation in the field. It was the first broad-scope, forward-looking campaign focused on the cloud to be put forth by a global standards development organization.

Two new standards development projects were approved: IEEE P2301™, Draft Guide for Cloud Portability and Interoperability Profiles, and IEEE P2302™, Draft Standard for Intercloud

Interoperability and Federation. They are designed to help users develop and build standards-based cloud computing products and outline the governance required to ensure interoperability across the industry.

IEEE extended its leadership in the cloud computing field by organizing two successful seminars: the IEEE System of Systems Engineering Conference in New Mexico and IEEE Cloud 2011: The 4th International Conference on Cloud Computing in Washington, D.C.

Outreach & Development

IEEE's focus on local programs brings needed solutions to individuals and communities.

IEEE expanded activities aimed at helping underserved populations in 2011. These initiatives built partnerships that leveraged IEEE's expertise and global reach and addressed IEEE's commitment to advancing technology for humanity.

Students Work Together to Deliver Community Solutions

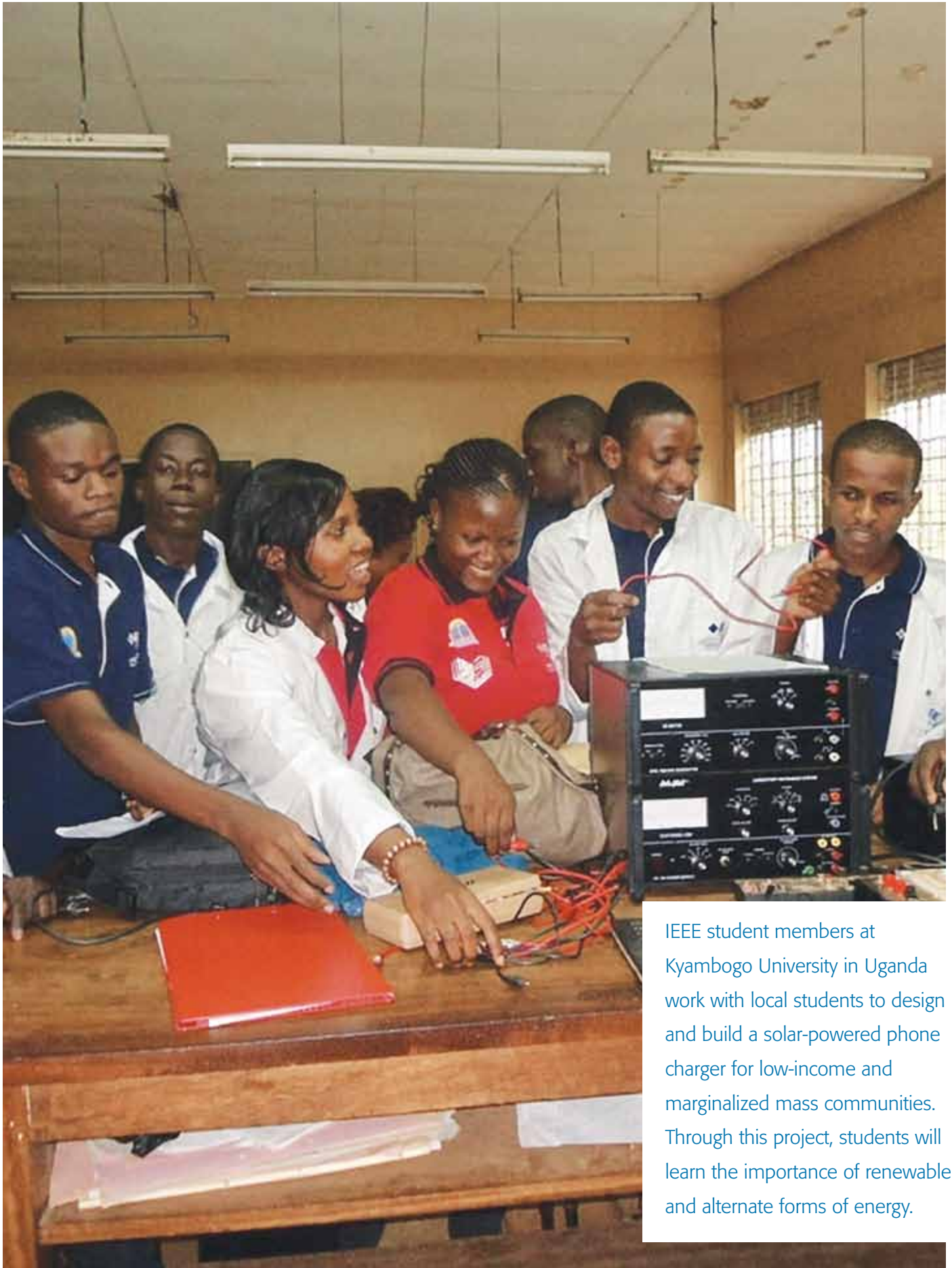
Engineering Projects in Community Service in IEEE (EPICS in IEEE), an on-the-ground program that connects IEEE student branches and secondary school students with nonprofit organizations, grew substantially in 2011. Working through EPICS in IEEE, students are able to provide their communities with much-needed solutions and hope for a self-sustaining future.

EPICS in IEEE focuses on 4 key categories:

- | |
|--------------------------|
| › Access and Abilities |
| › The Environment |
| › Education and Outreach |
| › Human Services |

2011 saw 26 projects initiated in 11 countries, including Argentina, Belgium, India, South Africa, and the U.S.





IEEE student members at Kyambogo University in Uganda work with local students to design and build a solar-powered phone charger for low-income and marginalized mass communities. Through this project, students will learn the importance of renewable and alternate forms of energy.

Creating Opportunities for Global Collaborations

Engineering for Change (E4C) was launched early in 2011 as a collaboration among IEEE, the American Society of Mechanical Engineers (ASME), and Engineers Without Borders USA. E4C's active Web presence provides a forum for a growing community of engineers, technologists, social scientists, non-governmental organizations, local governments, and community advocates dedicated to improving quality of life to work together, meet challenges, solve problems, and share knowledge. At the end of its first year, E4C had nearly 10,000 active members in over 160 countries.

Bringing Electricity to Rural Haiti

In 2011, the IEEE/Sirona Haiti Rural Electric Project, launched by the IEEE Community Solutions Initiative (CSI), began deployment of six SunBlazer solar-based battery-charging stations that supplied electricity to six regions of Haiti. The initial objectives were to demonstrate the viability of the technology and build a project model that pays for itself. The success of this first phase brought much-needed power to many Haitian villages.

The IEEE CSI, a volunteer group of the IEEE Power & Energy Society, is committed to the open-source design and delivery of energy solutions to power-deprived populations. Its work in Haiti is supported by an IEEE Foundation grant funded by IEEE member donations.

IEEE Sections Working Together Across the World

The IEEE Uruguay Section's successful 2010 opening of E-Scientia, an interactive exhibit for pre-university students at the Espacio Ciencia museum in Montevideo, spurred a collaborative effort to expand this project to other continents in 2011. The IEEE Uruguay Section helped the Hyderabad Section create a 5,000-square-foot interactive museum at the B.M. Birla Science Centre in Hyderabad, India. Made possible through a collaborative effort among IEEE section volunteers, science center staff, local industry, and pre-university teachers, the B.M. Birla Science Centre features a series of hands-on exhibits that demonstrate the fundamentals and applications of electrical and computer engineering. The impact of this effort was immediately visible: the museum is now visited by at least 1,000 students per week.



IEEE-USA Working Hand-in-Hand with U.S. Government Officials



IEEE-USA works to build the careers of engineers and shape public policy. In 2011, it formally opened conversations with U.S. government officials to develop new avenues for IEEE members to take advantage of programs that promote growing high-tech businesses.

IEEE-USA arranged a meeting between federal agencies responsible for promoting small business and entrepreneurship in the fast-changing tech sector, laying an important foundation for future collaborations between the agencies and small business owners.



2011 IEEE President Moshe Kam joined volunteers from the IEEE Hyderabad Section, local teachers, and students for a ribbon cutting ceremony commemorating the opening of an interactive museum at the B.M. Birla Science Centre.



IEEE Standards Association Marks 2011 with Innovative Product Offerings and Global Agreements

In addition to its highly visible contributions to smart grid and cloud computing standards and research in 2011, IEEE-SA worked to broaden the international understanding of the IEEE standards development process.

Meeting the Needs of Standards Users

In 2011, the work of IEEE-SA drove the functionality, capabilities, and interoperability of a wide range of products and services that transform the way people live, work, and communicate.

IEEE-SA launched a series of innovative products that respond to industry needs. The new IEEE Redline Versions of Standards provide a quick and easy way to compare changes between an active IEEE standard and its previous version. IEEE-SA also published the 2012 National Electrical Safety Code® (NESC®), which sets the ground rules for the safeguarding of persons during the installation, operation, or maintenance of electric supply and communication lines and associated equipment. IEEE-SA also extended its entry into mobile applications with the development and availability of the Android version of the IEEE Standards Wireless Dictionary.





IEEE focuses on delivering information for the researcher and the practitioner. IEEE Standards connect implementation of groundbreaking research in areas such as cloud computing, smart grid, and electrical safety to the hands-on developers and technology professionals.

IEEE-SA Advances Global Initiatives

In India, IEEE-SA engaged with individuals and industry through the IEEE India Standards Interest Group. In China, ongoing outreach and relationship building resulted in the renewal of agreements with two key standardization players in China, the China Electronics Standardization Institute (CESI) and China National Institute for Standardization (CNIS).

Significant progress was also achieved with Korea's national standards body, the Korean Agency for Technology and Standards (KATS), with the signing of a general cooperation agreement. Smart grid relationships were strengthened by a significant IEEE-SA presence at an international conference hosted by the Korea Electric Association, and by the signing of an agreement with the Korean Society of Automotive Engineers (KSAE).



IEEE Continues to Advance Engineering

Programs promote technology education around the world.

IEEE educational activities benefitted a wide range of people at every stage of their educational and professional lives.

IEEE Honor Society: First Chapters Established Outside U.S.

IEEE-Eta Kappa Nu (IEEE-HKN) is the official honor society of IEEE. It is composed of nearly 200 university chapters that recognize scholarship and academic excellence in student leaders, young professionals, and eminent scholars in IEEE's technical fields of interest. Since its founding, nearly 100,000 distinguished individuals have been inducted into IEEE-HKN. In 2011, IEEE-HKN established its first three chapters outside the U.S. in China, India, and Canada.

Young Women Introduced to Engineering

IEEE remains committed to closing the existing gender gap between the amount of male and female engineers in the workforce. Sponsored by the IEEE Control Systems Society and co-sponsored by the California Space Grant Consortium and Columbia Memorial Space Center, the "My Daughter is an Engineer" program brought mothers, daughters, and their teachers together for a three-day summer residential program. The activities were developed by the Mechanical and Aerospace Engineering Department in collaboration with the College of Engineering of California State University, Long Beach. The program was designed to inspire young girls to consider careers in technology by introducing them to robotics and controls via hands-on, engineering-based workshops.





The “My Daughter is an Engineer” program was held for the first time at the California Space Grant Consortium in July 2011. The IEEE Control Systems Society was one of the program sponsors where mother-and-daughter teams learned about different engineering careers.

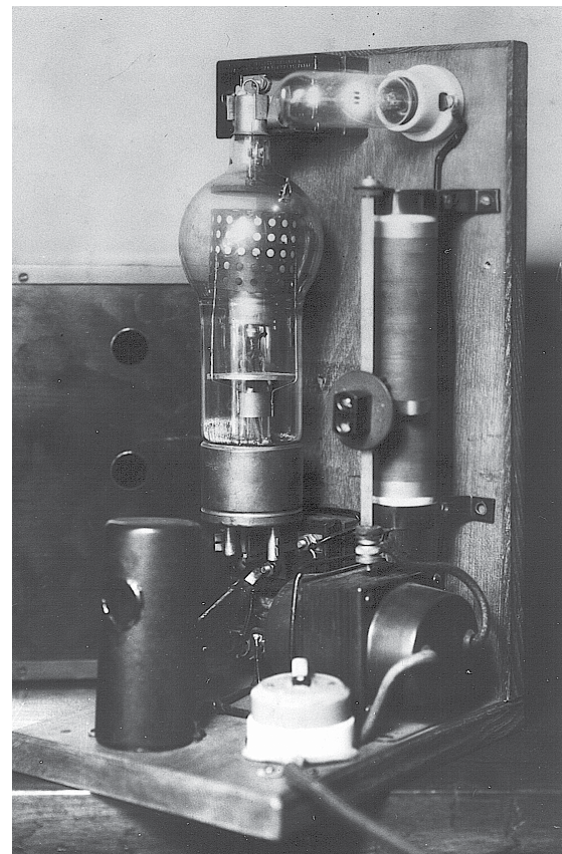
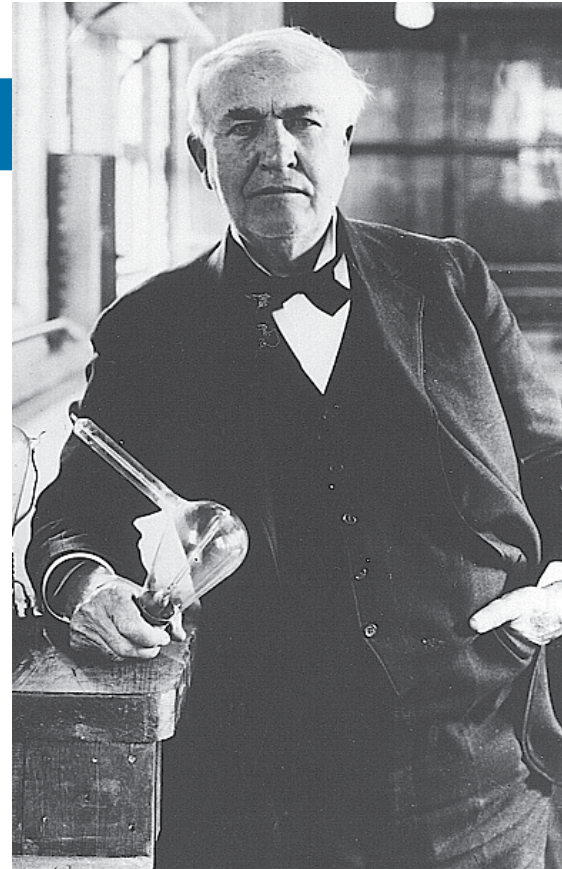
IEEE Milestones

In 2011, IEEE dedicated 10 IEEE Milestones in Electrical Engineering and Computing.

Each year, the IEEE Milestones in Electrical Engineering and Computing program recognizes significant technical achievements that occurred at least 25 years ago in fields of technology associated with IEEE. More than 100 IEEE Milestones have been dedicated to date. All the milestones are described in detail at the IEEE Global History Network Web site, www.ieeeeghn.org.

Other IEEE Milestones dedicated in 2011 include:

- › Edison's Pearl Street Generating Station, 1882 (New York, N.Y.)
- › SPICE Circuit Simulation Program, 1971 (Berkeley, Calif.)
- › Eel River High Voltage Direct Current Converter Station, 1972 (New Brunswick, Canada)
- › Grumman Lunar Module, 1962-1972 (Bethpage, N.Y.)





**Marconi's First Wireless Experiments
1894-1895 (Pontecchio, Italy)**

Marconi began experimenting in 1894 in the attic of his family home. Marconi connected a grounded antenna to a transmitter, and with this apparatus transmitted radiotelegraphic signals over a physical obstacle, the Celestini Hill, at a distance of two kilometers. The successful experiment marked the birth of wireless communication.



**Mercury Spacecraft, 1962
(St. Louis, Mo.)**

Engineers at McDonnell Douglas Aircraft (later a Boeing heritage company) provided a huge boost to the U.S. space program by developing, designing, and building the Mercury spacecraft. The first U.S. manned space vehicle was equipped with electrical systems that would evolve in future U.S. space flights.



**First Satellite Broadcast to the Public,
1984 (Tokyo, Japan)**

The R&D team of NHK, Japan's public broadcasting organization, developed the technology used in the world's first direct-broadcast satellite service—which laid the groundwork for today's satellite television. The broadcast took place at NHK Science and Technology Research Laboratories.



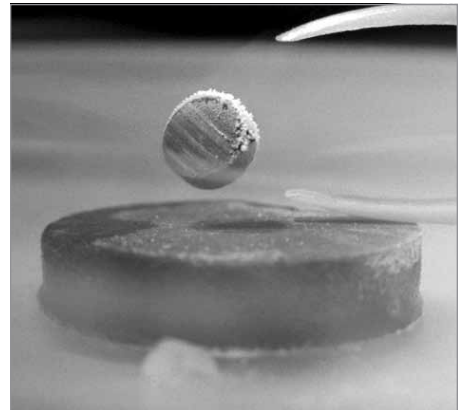
**Apollo Guidance Computer,
1962-1972 (Cambridge, Mass.)**

The Apollo Guidance Computer provided spacecraft guidance, navigation, and control during all of NASA's Apollo Moon missions. It was developed under the leadership of Dr. Charles Stark Draper at the Massachusetts Institute of Technology Instrumentation Lab, now Draper Laboratory.



**First Real-Time Speech Communication
on Packet Networks, 1974-1982
(Lexington, Mass.)**

In 1974, the first real-time speech communication over a packet-switched network was demonstrated via ARPANET at MIT Lincoln Laboratory. By 1982, these technologies enabled Internet packet speech and conferencing on terrestrial, packet radio, and satellite networks.



**Discovery of Superconductivity,
1911 (Leiden, Netherlands)**

In April 1911, Professor Heike Kamerlingh Onnes and his collaborators, Cornelis Dorsman, Gerrit Jan Flim, and Gilles Holst discovered superconductivity by observing that the resistance of mercury approached "practically zero" when its temperature was lowered to three kelvins.





25 Serving Members

IEEE surpasses 415,000 members and continues to expand globally.

IEEE membership expanded around the world in 2011, as membership development efforts succeeded in maintaining the strong growth seen over the last decade. IEEE now has more than 415,000 members, who are supported by the organization with resources to help them in their work and to reach their career goals.

IEEE Celebrates Spirit of Cooperation

IEEE events in 2011 excited and inspired members across the globe.

In the office, in the field, on the Internet, and in person, IEEE encourages communication and collaboration. Two events in 2011 demonstrated the organization's commitment to these goals.

A Global Assembly of Leaders

More than 1,100 IEEE volunteers traveled to San Francisco, Calif., to take part in IEEE Sections Congress 2011 (SC2011), the latest edition of the highly lauded triennial leadership workshop.

IEEE SC2011 was the largest gathering to date, welcoming delegates from 92 countries, 294 IEEE sections, and 41 IEEE technical societies and councils. The IEEE SC2011 program, themed "Empowering Members to Create the Future," offered IEEE leaders the opportunity to share experiences and knowledge with one another and learn more about the many resources available to members. The program included over 30 breakout sessions featuring more than 80 speakers, as well as exhibits in which IEEE employees provided information about new programs and materials to help IEEE volunteers in their local efforts.





IEEE Life Fellow Raj Mittra (second from r.), recipient of the 2011 James H. Mulligan, Jr. Education Medal, is congratulated by (l. to r.) 2011 IEEE President-Elect Gordon Day; Tom Robbins, National Instruments Foundation, sponsor of the James H. Mulligan, Jr. Education Medal; and Moshe Kam, 2011 IEEE President.

Empowering Members to Create the Future

IEEE members displayed their pride in IEEE on 6 October 2011, during the second annual IEEE Day, a global commemoration of the first time that the soon-to-be founders of IEEE gathered in 1884.

More than 160 IEEE Day events took place in over 50 countries. Activities included educational forums, robotics competitions, visits to high schools, and public seminars—all encouraging professionals and students to pursue new opportunities in engineering and other technical fields.

Through Web sites, Facebook, Twitter, and other social media channels, the worldwide membership of IEEE came together virtually and in person to share knowledge and recognize historic milestones in engineering.



IEEE Member Engagement

IEEE is powered to greater strength by the participation of its members.

Throughout the year, IEEE members elevated and strengthened the organization, using new and improved resources launched to support their efforts.

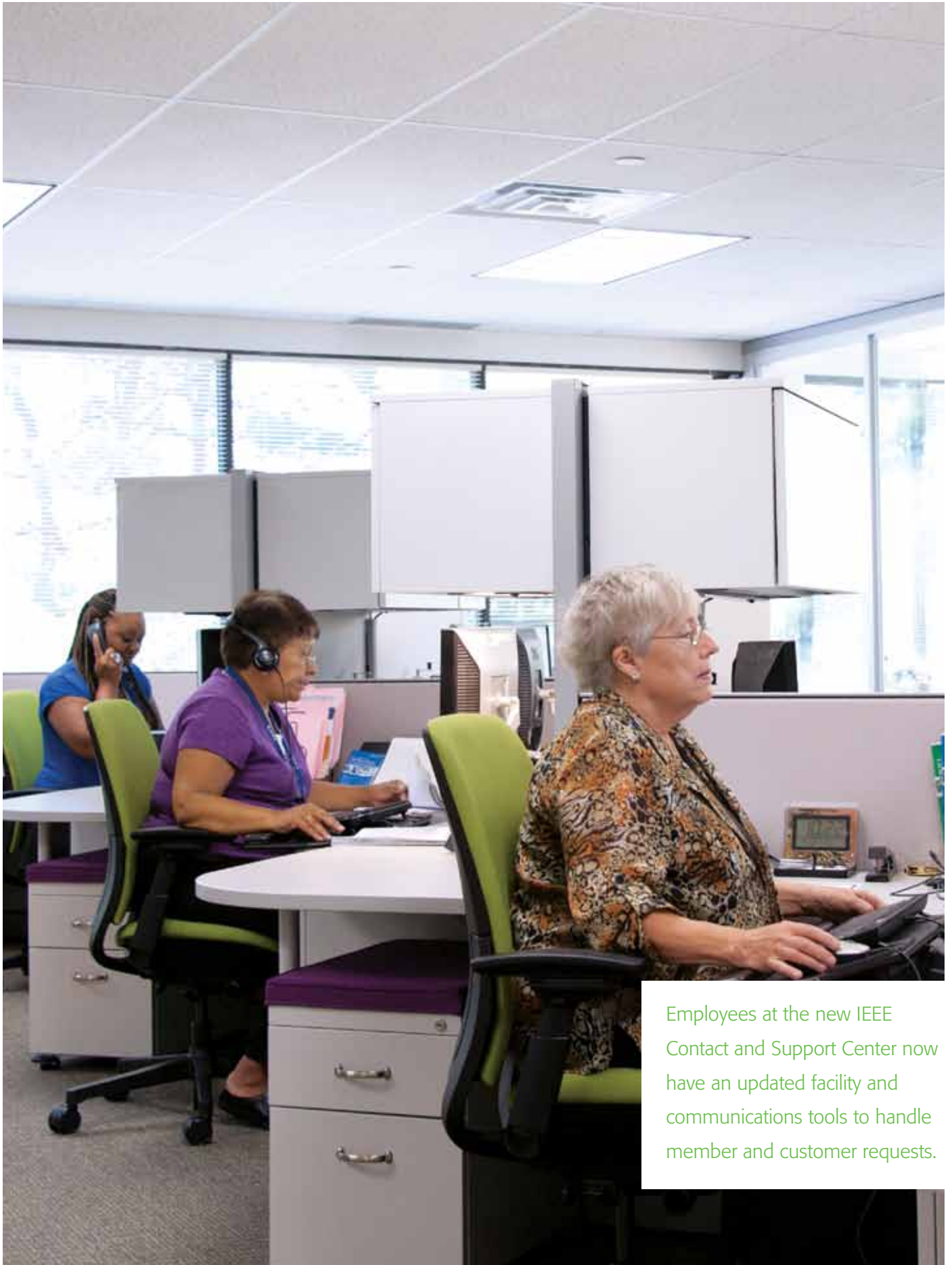
Improving Member Communications

To better serve its worldwide membership, IEEE invested in a state-of-the-art Contact and Support Center in Piscataway, N.J. The center offers enhanced communications tools, global hours, virtual chat, and an easy-to-navigate Web site that provides answers to frequently asked questions. During the year, IEEE Contact and Support Center employees managed over 220,000 member and customer inquiries.

The membership section of the IEEE Web site was also enhanced. The IEEE Member Global Benefits Finder was developed to help members easily see what benefits are offered in their region. In addition, the “Get Started with Your IEEE Membership” page was launched, designed so members can quickly find resources to make the most of their IEEE membership.

myIEEE, the personalized IEEE member Web portal, added resources for volunteers such as the new focused desktop and links to IEEE vTools, a portfolio of Web-based software that enables volunteers to manage local meetings, run elections, surveys, provide reporting, and more.





Employees at the new IEEE Contact and Support Center now have an updated facility and communications tools to handle member and customer requests.

Public Visibility Initiative Elevates IEEE Brand Education

In 2011, IEEE focused on sharing IEEE member expertise with the media.

Throughout the year, the IEEE Public Visibility Initiative continued its global communications program to elevate IEEE's visibility, value, and brand awareness, to position the organization as a thought leader and source of technology information.

"Hot Topic" Storytelling

IEEE member experts appeared in hundreds of articles in top-tier media outlets in seven countries. Media interest in IEEE was strengthened by the participation of technical experts in interviews that showcased their talents, expertise, and viewpoints. Key coverage highlights:

- ▶ IEEE Insights, a blog that regularly discusses pressing global issues in the areas of innovation, education, and technology at Forbes.com.
- ▶ IEEE Women in Engineering stories appeared in the U.S., U.K., India, and China.
- ▶ IEEE seminar in Japan on the use of robots in the Fukushima disaster attracted multiple media mentions.
- ▶ IEEE Member viewpoints on cloud computing were featured in prominent outlets in the U.S., U.K., and Brazil.
- ▶ CIO.com featured IEEE mobile predictions in 2012.
- ▶ AOL Energy featured IEEE in its story "Nanotechnology Goes Macro."





IEEE Solutionists are trained and skilled in the art or science of making practical application of the knowledge of pure sciences to solve a problem. IEEE Solutionists include: (l. to r.) Vint Cerf, IEEE Fellow, Vice President and Chief Internet Evangelist at Google; Sophie Vandebroek, IEEE Fellow, Chief Technology Officer at Xerox; and Norm Augustine, Life Fellow & Retired CEO Lockheed Martin, U.S. Human Space Flight Committee.

Partnering Across Societies and Organizational Units

A collaboration with multiple IEEE societies and organizational units identified and positioned members as subject matter experts with the media. This led to a raised visibility of IEEE, engineering, computing, and technology.

The IEEE Solutionists campaign, "Icons of the Digital World: Perspectives on Tomorrow's Solutionists," profiled IEEE members who are leaders in the technology sector. Videos, interviews, and articles detailed the many significant contributions they made to society in 2011.

Students Showcase Their Skills

IEEE scholarships and competitions around the world provide students with valuable opportunities to display their technical, leadership, and managerial skills.

Power and Energy Scholarships Awarded

Ninety-three electrical engineering undergraduates from 51 U.S. universities won IEEE Power & Energy Society (PES) Scholarship Plus awards for the 2011-12 academic year. The goal of the scholarships is to increase the number of well-qualified, entry-level engineers in the power and energy industry. The scholarships are distributed through the IEEE Power & Energy Scholarship Fund and provide up to three years of financial support. To qualify, students must be U.S. electrical engineering undergraduates and meet a range of other criteria. Over 700 students from 107 U.S. universities applied via the scholarship Web site, launched in April 2011.

Smart Grid Video Addressing Social Media Wins First Place

At the IEEE International Conference on Smart Grid Communications in Brussels, Belgium, students entered videos as part of the IEEE student engineering competition for innovating the smart grid. Videos were made in two categories, explaining innovative smart grid concepts and showing the benefits of smart grid. Austin Montgomery of the University of Waterloo, Ontario, Canada, won the Student Video Competition for his video, "Making the Smart Grid Smarter with Social Media."





2011 IEEE President-Elect Gordon Day (l.) and 2011 President Moshe Kam (r.) present Alecio Binotto (c.) from the Institute of Informatics Brazil with the top prize in the IEEE Presidents' Change the World Competition. Binotto accepted the prize on behalf of this team for their PoaS@ude Telemedicine Project.



Christopher N. Larson, a 2011 IEEE Power & Energy Scholarship Plus recipient, with Eugene Stuffle, Dr. Hossein Mousavinezhad, and Dr. Subbaram Naidu

Students Provide Solution for Remote Health Care

A team of students from Brazil earned the top prize in the IEEE Presidents' Change the World Competition for their PoaS@ude Telemedicine Project, which enables doctors to perform remote prenatal ultrasounds. The project provides real-time e-health solutions and promotes prevention programs for people living in remote areas with limited access to medical care. The Brazil team members received top honors and the title of "IEEE Student Humanitarian Supreme."

IEEE Outstanding Paper Award Announced

Postgraduate student Kahesh Dhuness and Professor Sunil Maharaj of the Department of Electrical, Electronic, and Computer Engineering at the University of Pretoria in South Africa won the IEEE Outstanding Paper Award at the IEEE Africon 2011 Conference, where a total of 307 papers were received and reviewed by 449 peers from around the world. (*cont. pg 36*)



Microsoft Research Asia (MSRA) and IEEE China Operations initiated the “IEEE-MSRA Joint Program” in talent development in 2011. MSRA paid the student membership fees of its 300 interns in China, enabling them to join IEEE. In a collaborative exchange, IEEE China Operations personnel arranged for IEEE student branch representatives to visit and tour MSRA.

Their paper, “A Cognitive Radio Application of OM-OFDM for Implementation in DVB-T2,” proposed using offset modulation (OM-OFDM) for cognitive radio applications.

IEEE Africon 2011 was themed “Sustainable Energy and Communications Development for Africa” and held in Zambia from 13-15 September 2011. It was the largest in the event’s 10-year history, with over 300 delegates attending, more than 40 percent of them from outside Africa.

Student’s Project Deters Car Accidents

Jessica Richeri thought a smarter transportation system could be a solution to the unsafe, crowded highways of the future. After three years of work—beginning at age 14—and 20,000 lines of code, she developed an autonomous vehicle able to recognize and avoid obstacles and, hopefully, prevent accidents. Unlike previous driverless robotic vehicles, Richeri’s car can

adapt to its environment without first knowing the details of the landscape through which it is traveling.

Richeri’s project, “Autonomous Robotic Vehicle: Saving Lives, Preventing Accidents One at a Time,” earned her the 2011 IEEE Presidents’ Scholarship. She has since graduated from Centennial High School in Corona, Calif., and enrolled in the electrical engineering program at Carnegie Mellon University in Pittsburgh, Pa.

IEEEExtreme Competition Exceeds Expectations

The cuSAT team from Chulalongkorn University, Thailand, won the Grand Prize in the IEEEExtreme Programming Competition 5.0. The global competition challenged teams of IEEE Student Branch members to compete over a 24-hour span to solve a set of programming problems. The 2011 event attracted 1,161 student teams, a 53 percent increase over 2010, and included a total of 3,183 students from 65 countries and 253



2011 marked the fifth annual Formula Hybrid Competition. Jointly sponsored by IEEE and the Society of Automotive Engineers (SAE), the Thayer School of Engineering at Dartmouth hosted event features high-performance hybrid and electric race cars built by teams of undergraduate and graduate engineering students.

universities with IEEE student branches. The winners received an all-expenses paid trip to an IEEE conference of their choice, anywhere in the world.

Students Compete by Building High-Performance Race Cars

Dartmouth University's fifth annual Formula Hybrid Competition saw 21 teams compete over four days, with students from Texas A&M University winning first prize. The competition, sponsored by IEEE and SAE, was founded by the Thayer School of Engineering at Dartmouth. It features high-performance hybrid and electric race cars built by teams of undergraduate and graduate engineering students. Each day was dedicated to specific tasks: electrical and mechanical inspection, acceleration, design and marketing presentation, and finally a 22 kilometer endurance event with a limited allotment of energy.





2011 IEEE President-Elect Gordon Day and Hong Kong Financial Secretary John Tsang dot the eyes of a lion to bring it to life at the Opening Ceremony of the IEEE Technology Time Machine Symposium that took place in Hong Kong, 1-3 June 2011.



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Products & Services

IEEE made significant strides in 2011 to expand its role as the leading global source of high-quality and most-trusted technical publications and international conferences.

The year brought new partnerships, increased use of content in the IEEE *Xplore*® digital library, and continued leadership in journal and conference rankings.

IEEE Publications Remain Most Cited

IEEE continued to lead in technical journal citations, confirming the value and confidence researchers have in IEEE publications.

IEEE Journals Cited Three Times More Often

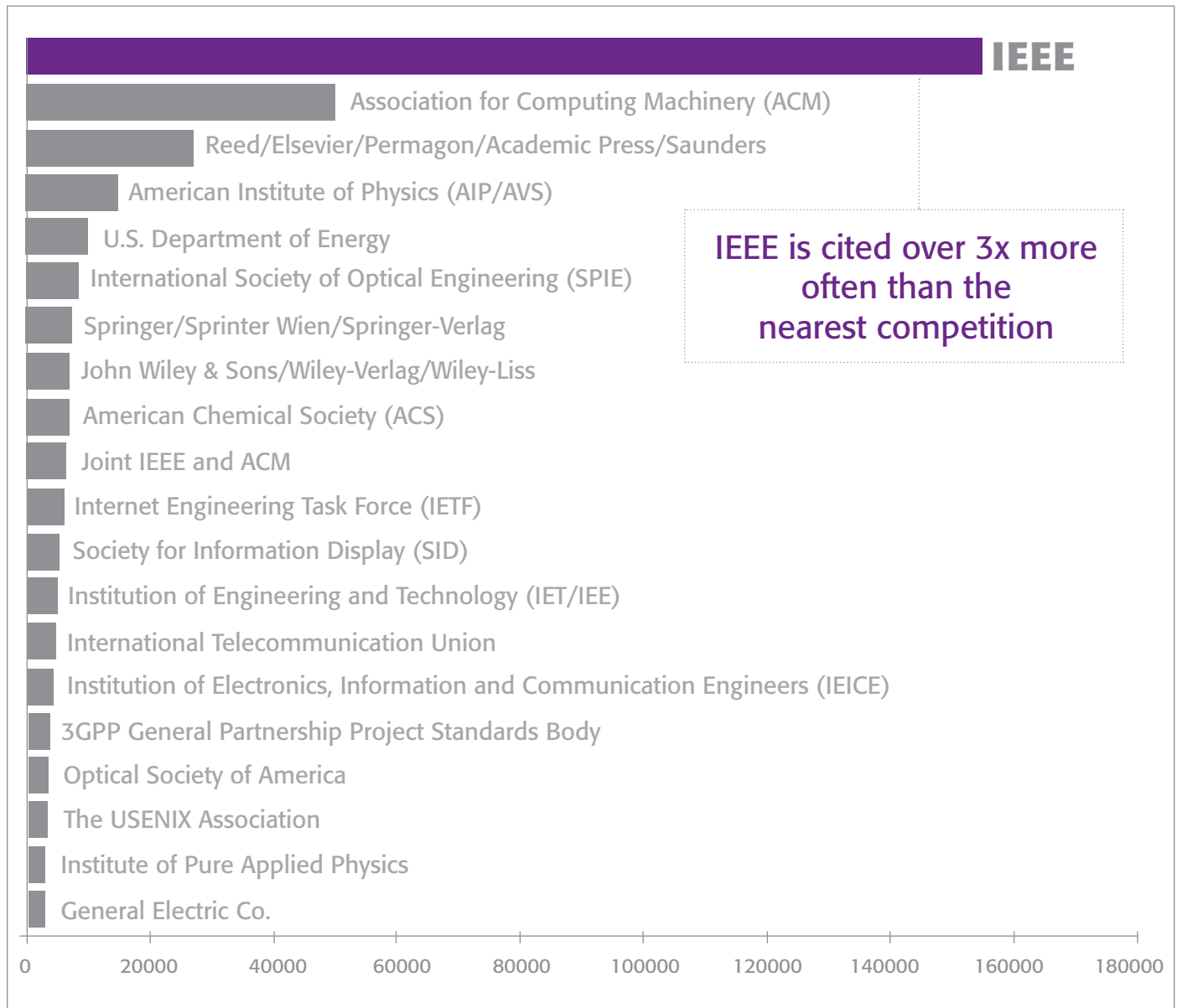
IEEE published seven number one technical journals in the categories of Electrical and Electronic Engineering, Telecommunications, Automation and Control Systems, Computer Science (Software, Hardware, and Artificial Intelligence), and Manufacturing Engineering, according to the 2010 Thomson Reuters Journal Citation Reports (JCR), released June 2011.

IEEE was among nearly 2,500 publishers from 84 countries included in the JCR report, the largest to date. The JCR, which ranks the frequency of journal citations in research, also reported that IEEE published 16 of the top 20 journals in electrical and electronic engineering, 8 of the top 10 journals in telecommunications, and 6 of the top 10 journals in computer science, hardware, and architecture.

Patents build on earlier scientific findings – and the foundation for patents comes from scientific literature. 1790 Analytics LLC, a market research firm specializing in patent analysis and intellectual property, reported that the leading 25 organizations granted the highest number of patents between 1997 and 2011 cited IEEE journals and conference proceedings three times more often than any of the other top 20 publishers. The report revealed that IEEE journals and conference proceedings received over 154,000



Patent Citation Chart



patent citations. It also showed that referencing to IEEE papers in patents has increased 546% since 1997. For example, in telecommunications technology, over 201,000 references to IEEE articles and conferences represent just about half of all science references from telecommunications patents since 1997. To help put this in perspective, consider: telecommunications is a

very technology-driven industry and that technology is often built upon scientific discoveries published in journal and conference papers. If we consider this set of papers as the science base of telecommunications, then roughly half of that science base is published in IEEE journals or presented at IEEE sponsored conferences.

(Source: 1790 Analytics LLC, Copyright 2012)

IEEE *Xplore*[®] Digital Library Expands

IEEE *Xplore* grew in content, subscribers, and partnerships in 2011, creating a more robust digital platform and efficient user experience. The range of technical disciplines represented and the number of documents published in IEEE *Xplore* has grown significantly over the past several years. In 2011, IEEE *Xplore* surpassed 3 million documents.

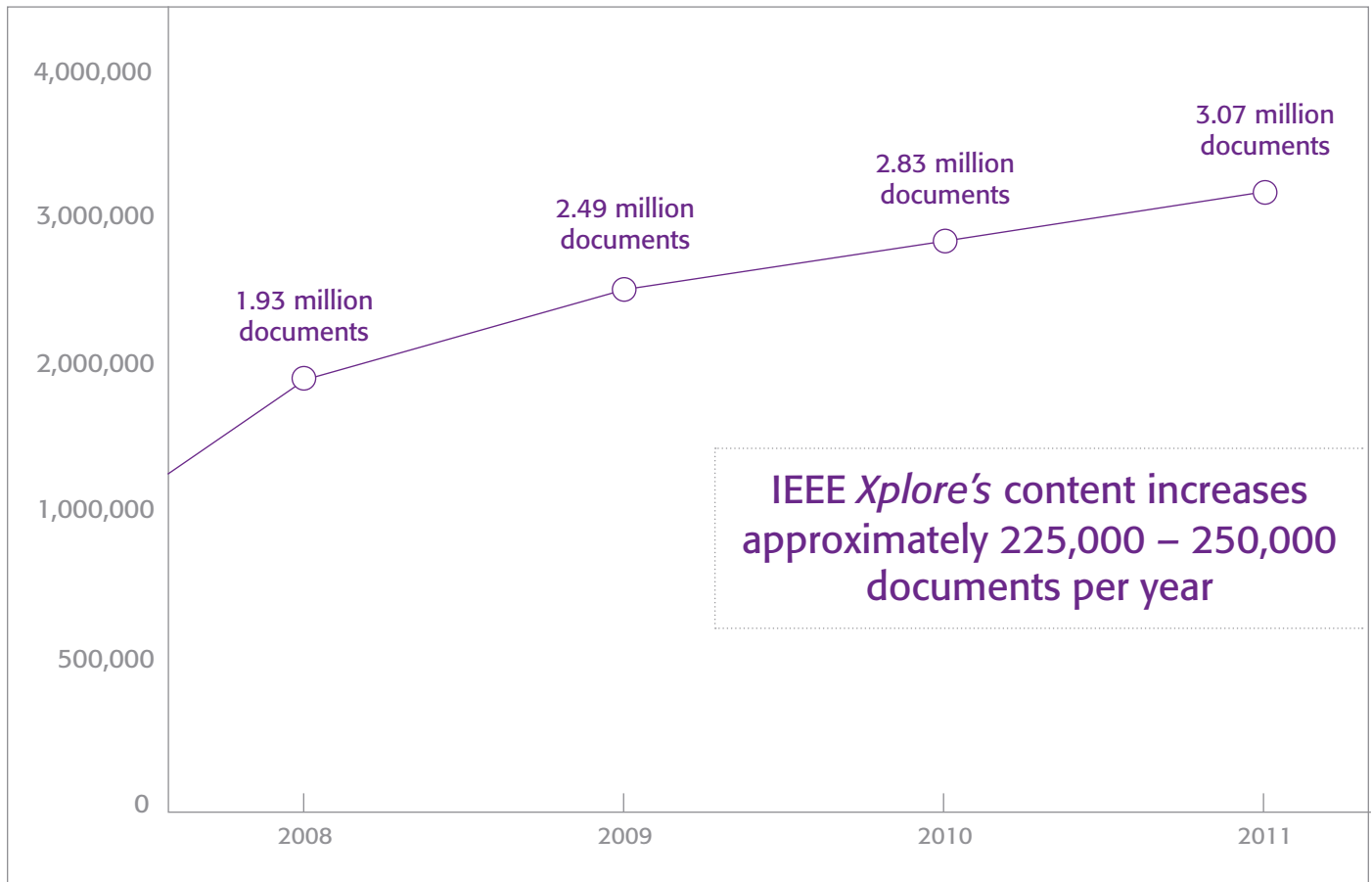
Other accomplishments included the launch of the IEEE Corporate Workgroups product, specifically designed for smaller companies, which expanded the customer base of IEEE *Xplore*. Additional enhancements that improved the user experience include a prototype for next-generation interactive research articles (XML content), the IEEE Standards Dictionary Online, the IEEE Redline Version of Standards, IET Enterprise Suite, and a mobile platform for the National Electrical Safety Code[®].

New International Partnerships Provide Access to Renowned Journals

To further enhance its value to the global research community, IEEE reached agreements with Tsinghua University Press and the Beijing Institute of Aerospace Information. These agreements make IEEE the exclusive worldwide distributor of English language versions of the notable journals *Tsinghua Science and Technology* and the *Journal of Systems Engineering and Electronics*.



IEEE *Xplore*® Content Growth



In addition, IEEE expanded its Shibboleth® coverage by joining the China Education and Research Network (CERNET) federation. Shibboleth is standards-based, open source software that enables single Web sign-on across or within organizational boundaries, simplifying the management of identity and permissions for organizations. The CERNET federation is part of the CERNET Authentication and Resource Sharing Infrastructure (CARSI) project, an inter-institutional authentication and authorization project initiated by China's Peking University. Membership in CERNET gives users secure access to IEEE *Xplore* without requiring them to be present at their institution. Peking University, Shenzhen University, and Tsinghua University are now using this software in China.



A 2011 agreement with the German Electrical Engineering Society (VDE) gives IEEE *Xplore* subscribers access to more than 3,000 English language papers from more than 20 VDE annual conferences. About 1,000 new papers will be added to the library each year.

eBooks: New Titles Added, Classics Remain Popular

The IEEE-Wiley eBooks Library continued to expand its offerings in 2011, with the addition of 40 new eBooks from Wiley-IEEE Press, 13 IEEE Standards Information Network titles, and 25 IEEE Computer Society Press titles.

IEEE eLearning Library Joins iTunes® U

Late in the year, the IEEE eLearning Library made its debut on iTunes U, Apple's online resource for learning materials published by leaders in education. Visitors can now find several hundred video and audio files from IEEE societies and the IEEE Global History Network. The IEEE eLearning Library is a series of online learning tutorials based on IEEE educational content from IEEE conferences around the world. In 2011, it surpassed 300 tutorials, with the launch of several new series, including "Engineering Ethics" and "Dual Port SRAM Design."

Three New Publications Launched

IEEE Journal on Emerging and Selected Topics in Circuits and Systems is a quarterly publication aimed at research in green systems, ambient intelligence, sensor networks, nanotechnology, smart power, bio-inspired electronics and bioinformatics, security, and other areas. The publication is sponsored by the IEEE Circuits and Systems Society.

IEEE Journal of Photovoltaics (PV) is a quarterly publication covering fundamentals and new concepts, PV systems, thin-film solar cells, concentrator solar cells, organic PV, and advances in PV characterization. The IEEE Electron Devices and the IEEE Power & Energy Societies are sponsoring the journal.





Access to information remained a priority for IEEE in 2011. With new partnerships, products, and improved user experience, IEEE increased the opportunity to impact intellectual property and technology development in the future.

IEEE Transactions on Terahertz Science and Technology

is dedicated to research on devices and systems operating in the terahertz (THz) frequency range. The biannual publication covers basic science and applications of the THz spectrum in biology, medicine, imaging, atmospheric and environmental science, remote sensing, radio astronomy, spectroscopy, telecommunications, and security. The IEEE Microwave Theory and Techniques Society is the journal's sponsor.

IEEE Expands Open Access

IEEE carried out key elements of the action plan for open-access publishing in 2011, extending the program begun the previous year. All IEEE journals produced by IEEE Publishing Operations, the IEEE Computer Society, and the IEEE Communications Society offer the open-access option, giving authors the opportunity to make their articles available at no cost to readers in the IEEE *Xplore*® digital library.

Morris Chang receives the IEEE Medal of Honor at the IEEE Honors Ceremony on Saturday, 20 August 2011, in front of an audience of more than 1,200 guests in San Francisco, Calif. The IEEE Medal of Honor is sponsored by the IEEE Foundation.





45 Awards & Honors

Morris Chang Presented with IEEE Medal of Honor

**Semiconductor industry leader
honored for life's work.**

Morris Chang, an engineer whose visionary leadership shaped the technology policy for an entire nation and revolutionized how the semiconductor industry does business around the world, received the highest medal bestowed by IEEE. An IEEE Life Member, Chang is the chairman and chief executive officer of the Taiwan Semiconductor Manufacturing Company, Ltd., in Hsinchu, Taiwan.

Listing of Awards & Honors

A Mark of Significant Accomplishments

In 2011, 321 IEEE Senior Members were elevated to the grade of IEEE Fellow. This honor is the highest membership grade IEEE members can achieve and is presented annually to no more than one-tenth of one percent of the voting membership as of December 31 the preceding year. The IEEE Fellow grade recognizes outstanding members for their significant accomplishments in advancing engineering, science, and technology, and for their contributions to the IEEE mission.

IEEE Medals

In addition to the IEEE Medal of Honor, 15 medals, two service awards, two corporate recognitions, and two honorary memberships were presented at the 2011 IEEE Honors Ceremony.



2011 IEEE Edison Medal recipient Isamu Akasaki (top) arrives at the 2011 Honors Ceremony recipient cocktail reception.

APJ Abdul Kalam (bottom), the first scientist to be elected president of India, received the 2011 IEEE Honorary Membership for outstanding contributions toward transforming society through technology and for inspiring millions of school children to harness science and technology for human welfare and national development.

IEEE Recognitions

IEEE Alexander Graham Bell Medal

Arogyaswami J. Paulraj – Stanford University (Professor Emeritus)
Palo Alto, Calif., U.S.

Broadcom Corporation
Irvine, Calif., U.S.

Sponsor: Bell Labs

IEEE Edison Medal

Isamu Akasaki – Meijo University and Nagoya University
Nagoya, Japan

Sponsor: Samsung Electronics Company, Ltd.

IEEE Medal for Environmental and Safety Technologies

Shoichi Sasaki – Keio University Graduate School of System Design and Management
Yokohama, Japan

Sponsor: Toyota Motor Corporation

IEEE Founders Medal

James F. Gibbons – Stanford University
Palo Alto, Calif., U.S.

Sponsor: IEEE Foundation

IEEE Richard W. Hamming Medal

Toby Berger – Cornell University
Ithaca, N.Y., U.S.

University of Virginia
Charlottesville, Va., U.S.

Sponsor: QUALCOMM, Inc.

IEEE Medal for Innovations in Healthcare Technology

Harrison H. Barrett – University of Arizona
Tucson, Ariz.

Sponsor: IEEE Engineering in Medicine and Biology Society

IEEE Jack S. Kilby Signal Processing Medal

Ingrid Daubechies – Duke University
Durham, N.C., U.S.

Sponsor: Texas Instruments, Inc.

IEEE/RSE Wolfson James Clerk Maxwell Award

Marcian E. Hoff – Teklicon, Inc. (retired)

San Jose, Calif, U.S.

Sponsor: Wolfson Microelectronics plc

IEEE James H. Mulligan Jr. Education Medal

Raj Mittra – Pennsylvania State University

University Park, Pa., U.S.

King Fahd University of Petroleum and Minerals

Dammam, Saudi Arabia

Sponsors: Mathworks, Pearson Education, Inc., National Instruments Foundation,
IEEE Life Members Committee

IEEE Jun-ichi Nishizawa Medal

Bernard J. Lechner

Princeton, N.J., U.S.

T. Peter Brody – Advantech US Inc.

Pittsburgh, Pa., U.S.

Fang-Chen Luo – AU Optronics Corporation

Hsinchu, Taiwan

Sponsor: The Federation of Electric Power Companies, Japan and the Semiconductor
Research Foundation

IEEE Robert N. Noyce Medal

Pasquale Pistorio – STMicroelectronics

Geneva, Switzerland

Sponsor: Intel Foundation

IEEE Dennis J. Picard Medal for Radar Technologies and Applications

James M. Headrick – U.S. Naval Research Laboratory (retired)

Stanfield, Ore., U.S.

Sponsor: Raytheon Company

IEEE Medal in Power Engineering

William F. Tinney – Consultant

Portland, Ore., U.S.

Sponsor: IEEE Industry Applications and the Industrial Electronics, Power Electronics,
and Power & Energy Societies

IEEE Simon Ramo Medal

Neil G. Siegel – Northrop Grumman Corporation
Dominguez Hills, Calif., U.S.

Sponsor: Northrop Grumman Corporation

IEEE John von Neumann Medal

Tony Hoare – Microsoft Research Ltd.
Cambridge, U.K.

Sponsor: IBM Corporation

IEEE Recognitions

IEEE Corporate Innovation Recognition

imec – Leuven, Belgium

Sponsor: IEEE

IEEE Ernst Weber Engineering Leadership Recognition

Tze-Chiang Chen – IBM Research
Yorktown Heights, N.Y., U.S.

Sponsor: IEEE

IEEE Honorary Membership

APJ Abdul Kalam – Indian Institute of Space Science and Technology
Trivandrum, India

Wang Jianzhou – China Mobile Communications Corporation
Beijing, China

Sponsor: IEEE

IEEE Donald G. Fink Prize Paper Award

Andreas L. Molisch – University of Southern California
Los Angeles, Calif. U.S.

Larry J. Greenstein – Rutgers University WINLAB
North Brunswick, N.J., U.S.

Mansoor Shafi – Telecom New Zealand
Wellington, New Zealand

For their paper entitled *"Propagation Issues for Cognitive Radio,"* Proceedings of the IEEE, Volume 97, Issue 5, May 2009, pp. 787–804.

Sponsor: IEEE Life Members Committee

IEEE Haraden Pratt Award

Levent Onural – Bilkent University

Ankara, Turkey

Sponsor: IEEE Foundation

IEEE Richard M. Emberson Award

Donald C. Loughry – Hewlett-Packard Company (retired)

Palo Alto, Calif., U.S.

Sponsor: IEEE Technical Activities Board

IEEE Technical Field Awards

At ceremonies around the world in 2011, eminent engineers and other outstanding technical professionals were presented with 28 Technical Field Awards, two IEEE Teaching Awards, and one Prize Paper Award.

IEEE Clelio Brunetti Award

Massimo V. Fischetti – University of Texas

Dallas, Texas, U.S.

David J. Frank – IBM T.J. Watson Research Center

Yorktown Heights, N.Y., U.S.

Steven E. Laux – IBM T.J. Watson Research Center

Yorktown Heights, N.Y., U.S.

Sponsor: Brunetti Bequest and Taiwan Semiconductor Manufacturing Company Limited

IEEE Components, Packaging, and Manufacturing Technology Award

Rao R. Tummala – Georgia Institute of Technology

Atlanta, Ga., U.S.

Sponsor: IEEE Components, Packaging, and Manufacturing Technology Society

IEEE Control Systems Award

Eduardo D. Sontag – Rutgers University

Piscataway, N.J., U.S.

Sponsor: IEEE Control Systems Society

IEEE Electromagnetics Award

Yahya Rahmat-Samii – University of California, Los Angeles

Los Angeles, Calif., U.S.

Sponsor: IEEE Antennas and Propagation, Electromagnetic Compatibility, Microwave Theory and Techniques, and Geoscience and Remote Sensing Societies

IEEE James L. Flanagan Speech and Audio Processing Award

Julia Hirschberg – Columbia University
New York, N.Y., U.S.

Sponsor: IEEE Signal Processing Society

IEEE Andrew S. Grove Award

Judy L. Hoyt – Massachusetts Institute of Technology
Cambridge, Mass., U.S.

Eugene A. Fitzgerald – Massachusetts Institute of Technology
Cambridge, Mass., U.S.

Sponsor: IEEE Electron Devices Society

IEEE Herman Halperin Electric Transmission and Distribution Award

John H. Brunke – Consultant
Freeland, Wash., U.S.

Sponsor: The Robert and Ruth Halperin Foundation, in memory of Herman and Edna Halperin, and the IEEE Power & Energy Society

IEEE Masaru Ibuka Consumer Electronics Award

Joan L. Mitchell – InfoPrint Solutions Company (retired)
Boulder, Colo., U.S.

Sponsor: Sony Corporation

IEEE Internet Award

Jun Murai – Keio University
Kanagawa, Japan

Sponsor: Nokia Corporation

IEEE Richard Harold Kaufmann Award

David D. Shipp – Eaton Electrical
Warrendale, Pa., U.S.

Sponsor: IEEE Industry Applications Society

IEEE Joseph F. Keithley Award in Instrumentation and Measurement

Reza Zoughi – Missouri University of Science and Technology
Rolla, Mo., U.S.

Sponsor: Keithley Instruments, Inc.

IEEE Gustav Robert Kirchhoff Award

Charles A. Desoer – University of California, Berkeley (retired)
Berkeley, Calif., U.S.

Sponsor: IEEE Circuits and Systems Society

IEEE Leon K. Kirchmayer Graduate Teaching Award

John D. Cressler – Georgia Institute of Technology
Atlanta, Ga., U.S.

Sponsor: Leon K. Kirchmayer Memorial Fund

IEEE Koji Kobayashi Computers and Communications Award

Thomas J. Richardson – QUALCOMM, Inc.
Bridgewater, N.J., U.S.

Rüdiger Urbanke – École Polytechnique Fédérale de Lausanne
Lausanne, Switzerland

Sponsor: NEC Corporation

IEEE William E. Newell Power Electronics Award

Praveen K. Jain – Queen's University
Kingston, Ontario, Canada

Sponsor: IEEE Power Electronics Society

IEEE Daniel E. Noble Award for Emerging Technologies

Mark L. Burgener – Peregrine Semiconductor Corporation
San Diego, Calif., U.S.

Ronald E. Reedy – Peregrine Semiconductor Corporation
San Diego, Calif., U.S.

Sponsor: Motorola Foundation

IEEE Donald O. Pederson Award in Solid-State Circuits

Willy Sansen – Katholieke Universiteit Leuven (professor emeritus)
Leuven, Belgium

Sponsor: IEEE Solid-State Circuits Society

IEEE Frederik Philips Award

Dim-Lee Kwong – Institute of Microelectronics, Singapore
National University of Singapore

Sponsor: Philips Electronics NV

IEEE Photonics Award

Amnon Yariv – California Institute of Technology
Pasadena, Calif., U.S.

Sponsor: IEEE Photonics Society

IEEE Emanuel R. Piore Award

Shafi Goldwasser – Massachusetts Institute of Technology
Cambridge, Mass., U.S.

Weizmann Institute of Science
Rehovot, Israel

Sponsor: IEEE Emanuel R. Piore Award Fund

IEEE Judith A. Resnik Award

Kamal Sarabandi – University of Michigan
Ann Arbor, Mich., U.S.

Sponsor: IEEE Aerospace and Electronic Systems, Control Systems, and Engineering in Medicine and Biology Societies

IEEE Robotics and Automation Award

Hirochika Inoue – University of Tokyo (professor emeritus)
National Institute of Advanced Industrial Science and Technology
Tokyo, Japan

Sponsor: IEEE Robotics and Automation Society

IEEE Frank Rosenblatt Award

Hans-Paul Schwefel – Technical University of Dortmund (professor emeritus)
Dortmund, Germany

Sponsor: IEEE Computational Intelligence Society

IEEE David Sarnoff Award

C.J. Chang-Hasnain – University of California, Berkeley
Berkeley, Calif., U.S.

Sponsor: SRI International Sarnoff

IEEE Marie Skłodowska-Curie Award

Charles K. (Ned) Birdsall – University of California, Berkeley (professor emeritus)
Berkeley, Calif., U.S.

Sponsor: IEEE Nuclear and Plasma Sciences Society

IEEE Charles Proteus Steinmetz Award

James W. Moore – The MITRE Corporation
McLean, Va., U.S.

Sponsor: IEEE Standards Association

IEEE Eric E. Sumner Award

H. Vincent Poor – Princeton University
Princeton, N.J., U.S.

Sponsor: Bell Labs

IEEE Nikola Tesla Award

Nady Boules – General Motors Global Research & Development
Warren, Mich., U.S.

Sponsor: The Grainger Foundation and the IEEE Power & Energy Society

IEEE Kiyo Tomiyasu Award

Moe Z. Win – Massachusetts Institute of Technology
Cambridge, Mass., U.S.

Sponsor: Dr. Kiyo Tomiyasu, IEEE Geoscience & Remote Sensing Society, Microwave Theory and Techniques Society, and KDDI R&D Laboratories, Inc.

IEEE Undergraduate Teaching Award

Raghunath K. Shevgaonkar – ITT
Bombay, India
University of Pune
Mumbai, India

Sponsor: IEEE Education Society



The Duke of Edinburgh presented IEEE Life Fellow Marcian E. Hoff (above) with the 2011 IEEE/RSE Wolfson James Clerk Maxwell Award in recognition of his work as one of the inventors of the microprocessor.

Achievement Recognition for IEEE

IEEE received several accolades for its accomplishments, ranging from its publication industry awards to its recognition as one of the top workplaces.

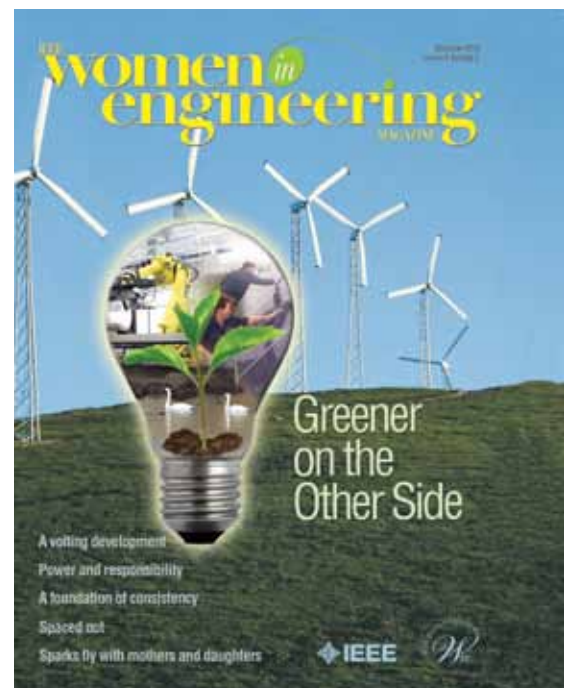
IEEE Operations Center Named Among Top 25 Places to Work in New Jersey

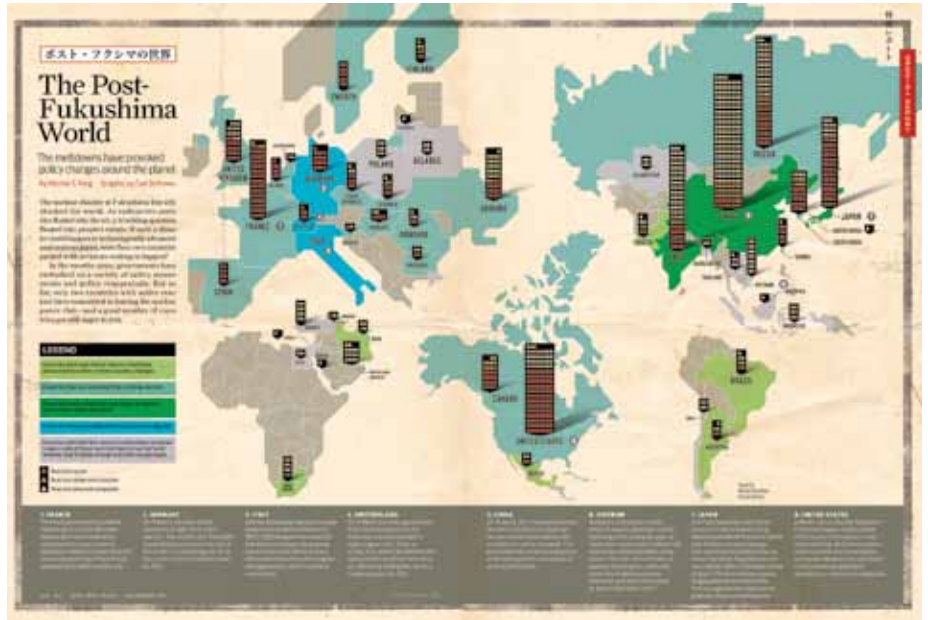
Each year, *NJBIZ* business magazine honors the top places of employment in New Jersey that benefit the state's economy, workforce, and businesses. IEEE was ranked number 25 in 2011, based on specific workplace data and the results of a random survey of employees.

IEEE Spectrum® Recognized for Excellence in Science Reporting

IEEE members know *IEEE Spectrum* as their monthly window on technology. The publication is also one of the few of its kind to report science news via award-winning blogs, podcasts, webinars, and multimedia experiences. Many stories in the magazine are expanded online with videos and links to related information, all of which makes the magazine relevant to a wider audience and promotes IEEE's mission to advance technology for humanity.

IEEE Spectrum received two prestigious Jesse H. Neal Awards for editorial excellence from America Business Media. The awards have been called "the Pulitzer Prize of business media" and are the business publishing industry's most prestigious honors.





The award-winning November 2011 issue of *IEEE Spectrum* included an investigative report about the nuclear disaster at Fukushima and how it affected energy policy changes around the world.

Senior News Editor Sam Moore and Associate Editor Eliza Strickland were honored with the Best News Coverage award for their report "Fukushima Dai-Ichi Nuclear Disaster." The report examined the nuclear emergency that followed the earthquake and tsunami in Japan in March 2011.

Senior Associate Editor and Automaton blog editor Erico Guizzo received the award for Best Blog. The Automaton blog features news, articles, and videos on robots, humanoids, automation, and artificial intelligence, among other topics, and generates 250,000 page views per month.

IEEE Spectrum also won the following EXCEL Awards, sponsored by Association Meeting and Publishing:

- › Gold Award—Magazines: Single-Topic Issue category for the July 2010 issue
- › Gold Award—Media Innovation: Podcasts category for "Greetings from the South Pole"
- › Silver Award—Media Innovation: Blogs category for Automaton
- › Bronze Award—Magazines: General Excellence category
- › Bronze Award—Magazines: Cover Photography for the June 2010 issue

IEEE Women in Engineering Magazine Won Three APEX Awards

IEEE Women in Engineering Magazine received three APEX Awards for Communications Excellence, sponsored by the *Writing That Works* newsletter:

- › Magazines and Journals: Print Over 32 Pages category for the June 2010 issue
- › Interviews and Personal Profiles: Article category for "Ready for Takeoff"
- › One of a Kind Green Publications: Article category for "Greener on the Other Side"

IEEE Board of Directors



Back Row, Left to Right

Michael R. Williams, Sandra L. Robinson, Alfred O. Hero, Nim K. Cheung, Jeffrey M. Voas, Charles P. Rubenstein, Steven M. Mills, Vincenzo Piuri, Enrique A. Tejera, Wai-Choong Wong, Peter N. Clout

Middle Row, Left to Right

David A. Hodges, J. Keith Nelson, Edward G. Perkins, Om P. Malik, Susan K. Land, Ronald G. Jensen, Tania L. Quiel, Marko Delimar, Ralph M. Ford, Theodore W. Hissey, Clarence L. Stogner, Harold L. Flescher

Front Row, Left to Right

James N. Riess, Eric Herz, Howard E. Michel, Donna L. Hudson, Pedro A. Ray, Moshe Kam, Gordon W. Day, Tariq S. Durrani, E. James Prendergast, Roger D. Pollard, Hiroshi Iwai

IEEE Management Council



Back Row, Left to Right Cecelia Jankowski, Alexander Pasik, Matthew S. Loeb

Middle Row, Left to Right Anthony Durniak, Mary Ward-Callan, Judith Gorman, Patrick D. Mahoney

Front Row, Left to Right Douglas Gorham, Elizabeth Davis, E. James Prendergast, Eileen M. Lach, Chris Brantley, Thomas R. Siegert

Message from the IEEE Treasurer

The IEEE Statement of Financial Position reflects total assets of US\$436.2 million and US\$438.4 million at 31 December 2011 and 2010, respectively. The slight decrease of US\$2.2 million is primarily due to the investment loss offset by an increase in capitalized equipment related to IEEE Business Platform (IBP). While IEEE total liabilities were US\$190.7 million and US\$176.1 million at 31 December 2011 and 2010 respectively, the increase of US\$14.6 million was primarily due to deferred income (subscriptions, dues, and assessments) and accrued pension, and other. Overall, IEEE Net Assets decreased to US\$245.5 million from the 2010 year-end balance of US\$262.4 million.

In 2011, IEEE had total revenues of US\$383.8 million, a decrease of US\$9.1 million from 2010, as shown on the Statement of Activities. The decrease in revenue was primarily due to the following:

1. Net investment revenue decreased US\$28.5 million vs. 2010. The net investment loss in 2011 is being shown as a net expense in lieu of a reduction of revenue.
2. Intellectual property (IP) revenue, including society non-member subscriptions, increased US\$8.5 million or 5.0%, primarily due to sales of the IEEE/IET Electronic Library (IEL), which represented US\$9.7 million of the increase, partially offset by a decrease in other IP of US\$1.2 million.
3. IEEE Standards Association revenue, exclusive of IP revenue from IEL and IEEE Standards Online Library included above, increased US\$2.4 million.
4. IEEE Society Operations revenue increased US\$2.2 million over 2010.
5. Conference event revenue increased US\$1.9 million, exclusive of IP revenue from conference proceedings included above.

Report of Independent Auditors

The Board of Directors – The Institute of Electrical and Electronics Engineers, Inc.

We have audited the accompanying consolidated statements of financial position of The Institute of Electrical and Electronics Engineers, Inc. (the Institute) as of December 31, 2011 and 2010, and the related consolidated statements of activities and cash flows for the years then ended. These consolidated financial statements are the responsibility of the Institute's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. We were not engaged to perform an audit of the Institute's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion

The operating surplus in 2011 was US\$12.5 million. The operating surplus was offset by pension and related benefit expense adjustment and investment loss of US\$16.5 million; the asset write-off of US\$5.8 million related to the IBP project, and other net expense items of US\$7.0 million that resulted in an overall net deficit of US\$16.8 million.

IEEE received an unqualified opinion from Mitchell & Titus, LLP in the Report of Independent Auditors. The independent auditors met with the IEEE Audit Committee to discuss the scope and results of their audit, their review on the adequacy of internal accounting controls, and the quality of financial reporting prior to issuing their opinion.

IEEE is tax exempt under Section 501(c)(3) of the Internal Revenue Code. The IEEE Foundation is a separately incorporated related organization of IEEE; accordingly, its audited financial statements are not included in the accompanying documents.

I submit these reports with confidence that IEEE continues to be a financially sound organization.



Harold L. Flescher
2011 IEEE Treasurer

on the effectiveness of the Institute's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of The Institute of Electrical and Electronics Engineers, Inc. at December 31, 2011 and 2010, and the changes in its net assets and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.



June 22, 2012

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

As of December 31, 2011 and 2010

	2011	2010
ASSETS		
<i>Current assets</i>		
Cash and cash equivalents	\$ 12,366,100	\$ 10,298,200
Accounts receivable, less allowance for doubtful accounts of \$449,400 in 2011 and \$455,500 in 2010	15,765,000	17,236,300
Inventories, prepaid expenses, and other assets	9,811,800	10,587,700
Investments	337,280,100	346,531,300
Total current assets	375,223,000	384,653,500
Long-term investments	191,400	191,400
Land, buildings, and equipment, net of accumulated depreciation and amortization	60,823,000	53,582,200
Total assets	\$ 436,237,400	\$ 438,427,100
LIABILITIES AND NET ASSETS		
<i>Current liabilities</i>		
Accounts payable and accrued expenses	\$ 43,746,200	\$ 42,683,500
Current portion of accrued pension and other benefits expense	223,000	209,200
Deposits by IEEE Foundation, Incorporated	26,959,600	27,371,900
Trading liabilities	811,300	611,500
Debt obligations	-	4,889,800
Current portion of capital lease obligations	1,627,800	1,351,700
<i>Deferred income</i>		
Dues and assessments	35,110,900	37,455,500
Subscriptions and other	60,653,000	51,725,600
Total current liabilities	169,131,800	166,298,700
<i>Long-term liabilities</i>		
Capital lease obligations, less current portion	3,083,200	2,513,600
Accrued pension and other benefits expense, less current portion	18,476,400	7,244,900
Total liabilities	190,691,400	176,057,200
Commitments		
<i>Net assets</i>		
Unrestricted	242,749,200	259,180,700
Temporarily restricted	2,605,400	2,997,800
Permanently restricted	191,400	191,400
Total net assets	245,546,000	262,369,900
Total liabilities and net assets	\$ 436,237,400	\$ 438,427,100

*The accompanying notes are an integral part of these financial statements.***CONSOLIDATED STATEMENT OF ACTIVITIES**

For the year ended December 31, 2011

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
REVENUE				
Membership and public imperatives	\$ 70,280,800	\$ 355,400	\$ -	\$ 70,636,200
Periodicals	141,572,300	-	-	141,572,300
Conferences	140,709,200	-	-	140,709,200
Standards	28,683,300	226,000	-	28,909,300
Other income	1,956,400	-	-	1,956,400
Net assets released from restrictions	971,100	(971,100)	-	-
Total revenue	384,173,100	(389,700)	-	383,783,400
EXPENSES				
<i>Program services</i>				
Membership and public imperatives	102,794,200	-	-	102,794,200
Periodicals	131,623,800	-	-	131,623,800
Conferences	117,154,100	-	-	117,154,100
Standards	24,969,600	-	-	24,969,600
Total program services	376,541,700	-	-	376,541,700
<i>Supporting services</i>				
General and administrative	7,597,000	-	-	7,597,000
Total expenses	384,138,700	-	-	384,138,700
Investment loss, net	2,671,500	2,700	-	2,674,200
Pension and related benefits expense other than net periodic pension cost	13,794,400	-	-	13,794,400
Change in net assets	(16,431,500)	(392,400)	-	(16,823,900)
Net assets, beginning of year	259,180,700	2,997,800	191,400	262,369,900
Net assets, end of year	\$ 242,749,200	\$ 2,605,400	\$ 191,400	\$ 245,546,000

The accompanying notes are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF ACTIVITIES

For the year ended December 31, 2010

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
REVENUE				
Membership and public imperatives	\$ 66,330,200	\$ 471,100	\$ -	\$ 66,801,300
Periodicals	134,648,400	-	-	134,648,400
Conferences	138,317,300	-	-	138,317,300
Standards	25,319,800	515,500	-	25,835,300
Investment income, net	25,794,700	28,700	-	25,823,400
Other income	1,489,800	-	-	1,489,800
Net assets released from restrictions	603,500	(603,500)	-	-
Total revenue	392,503,700	411,800	-	392,915,500
EXPENSES				
<i>Program services</i>				
Membership and public imperatives	95,223,300	-	-	95,223,300
Periodicals	120,633,000	-	-	120,633,000
Conferences	112,604,200	-	-	112,604,200
Standards	20,134,700	-	-	20,134,700
Total program services	348,595,200	-	-	348,595,200
<i>Supporting services</i>				
General and administrative	8,267,700	-	-	8,267,700
Total expenses	356,862,900	-	-	356,862,900
Pension and related benefits expense other than net periodic pension cost	2,840,100	-	-	2,840,100
Change in net assets	32,800,700	411,800	-	33,212,500
Net assets, beginning of year	226,380,000	2,586,000	191,400	229,157,400
Net assets, end of year	\$ 259,180,700	\$ 2,997,800	\$ 191,400	\$ 262,369,900

*The accompanying notes are an integral part of these financial statements.***CONSOLIDATED STATEMENTS OF CASH FLOWS**

For the years ended December 31, 2011 and 2010

YEAR ENDED DECEMBER 31

2011 2010

OPERATING ACTIVITIES		
Change in net assets	\$ (16,823,900)	\$ 33,212,500
<i>Adjustments to reconcile change in net assets to net cash provided by operating activities</i>		
Depreciation and amortization expense	11,740,500	10,046,400
Write off of previously capitalized assets	5,784,500	-
Net assets from Eta Kappa Nu (HKN) acquisition	-	(79,400)
Net realized and unrealized losses (gains) from investments	10,301,600	(20,893,000)
Change in fair value of interest rate swaps	-	(77,000)
<i>Change in assets and liabilities</i>		
Accounts receivable, net	1,471,300	(1,880,300)
Inventories, prepaid expenses, and other assets	775,900	4,155,700
Accounts payable and accrued expenses	386,000	22,422,100
Accrued pension and other benefits expense	11,245,300	(6,925,500)
Deposits by IEEE Foundation, Incorporated	(412,300)	25,768,300
Deferred income	6,582,800	(16,872,300)
Net cash provided by operating activities	31,051,700	48,877,500
INVESTING ACTIVITIES		
Proceeds from sale of investments	240,730,300	478,440,000
Proceeds from sale of land, buildings, and equipment	13,800	1,000
Proceeds from HKN acquisition	-	483,400
Purchase of land, buildings and equipment	(22,223,700)	(14,955,500)
Purchases of investments	(241,580,900)	(510,581,600)
Net cash used in investing activities	(23,060,500)	(46,612,700)
FINANCING ACTIVITIES		
Change in cash overdraft	676,700	263,600
Payment of debt obligations	(4,889,800)	(1,020,000)
Payment of capital lease obligations	(1,710,200)	(1,432,100)
Net cash used in financing activities	(5,923,300)	(2,188,500)
Net increase in cash and cash equivalents	2,067,900	76,300
Cash and cash equivalents, beginning of year	10,298,200	10,221,900
Cash and cash equivalents, end of year	\$12,366,100	\$10,298,200

SUPPLEMENTAL DATA

Interest paid	\$ 603,800	\$ 713,700
<i>Noncash items</i>		
Acquisition of equipment through capital lease obligations	\$ 2,555,900	\$ 2,166,300

The accompanying notes are an integral part of these financial statements.

NOTE 1 ORGANIZATION AND NATURE OF OPERATIONS

The objectives of The Institute of Electrical and Electronics Engineers, Inc. (the Institute, or IEEE) are (a) scientific and educational, directed toward the advancement of the theory and practice of electrical engineering, electronics engineering, computer engineering, computer sciences, and the allied branches of engineering and related arts and sciences and (b) professional, directed toward the advancement of the standing of the members of the profession it serves.

Implementation of the Institute's objectives is performed primarily through regions, sections, societies, and councils and their financial results are incorporated in the Institute's accompanying consolidated financial statements. These units were formed to serve the specialized technical interests of members and to coordinate these with the local activities of the sections and the broader activities of the Institute. The societies and councils promote the technical interests of their members through symposia, conferences, and various publications.

NOTE 2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**Basis of Presentation**

The Institute's consolidated financial statements are presented in conformity with U.S. generally accepted accounting principles and have been prepared on the accrual basis of accounting. The consolidated financial statements include the accounts of the societies, councils, regions, sections, IEEE, Inc., Global IEEE Institute for Engineers Private Limited, IEEE Global LLC and IEEE LLC.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles requires that management make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Consolidated Financial Statements

Resources are reported for accounting purposes into separate classes of net assets based on the existence or absence of donor-imposed restrictions. In the accompanying consolidated financial statements, net assets with similar characteristics have been combined into similar categories as follows:

Permanently restricted: Net assets subject to donor-imposed stipulations that are maintained permanently by the Institute. Such assets primarily include the Institute's permanent endowment funds. The principal of these endowments cannot be expended. The income earned can only be used as designated by the donor, and is then recorded as temporarily restricted.

Temporarily restricted: Net assets used by the Institute and subject to donor-imposed stipulations that can be fulfilled by actions of the Institute pursuant to those stipulations or that expire by the passage of time. These temporarily restricted net assets are designated principally for awards, medals, and specific projects.

Unrestricted: Net assets that are not subject to donor-imposed stipulations. Unrestricted net assets may be designated for specific purposes by action on behalf of the Board of Directors or may otherwise be limited by contractual agreements with outside parties. Unrestricted net assets can be utilized to carry out any of the purposes of the Institute.

The Institute's endowment consists of individual funds established for a variety of purposes and includes donor-restricted endowment funds. As required by U.S. generally accepted accounting principles, net assets associated with endowment funds are classified and reported based on the existence or absence of donor-imposed restrictions.

The Institute held \$191,400 in permanently restricted assets at December 31, 2011 and December 31, 2010 respectively.

On September 17, 2010, the State of New York enacted the New York Prudent Management of Institutional Funds Act (NYPMIFA), a modified version of the Uniform Prudent Management of Institutional Funds Act, which superseded the State of New York Uniform Management of Institutional Funds Act (the prior law). The Institute has evaluated the effect of NYPMIFA on the investment, appropriation, and management of its institutional funds and established procedures to comply with its provisions.

Expenses are generally reported as decreases in unrestricted net assets. Expiration of donor-imposed stipulations that simultaneously increase unrestricted net assets and decrease temporarily restricted net assets are reported as net assets released from restrictions. Temporarily restricted revenues received and expended during the same fiscal year are recorded as unrestricted revenues and expenses in the consolidated statements of activities.

The consolidated financial statements of the Institute should be read in conjunction with the financial statements of IEEE Foundation, Incorporated, a related organization (*see Note 14*).

Revenue Recognition

Revenue from membership dues and yearly periodical subscriptions is recognized on a straight-line basis over the period to which it pertains. Amounts received in advance are included in deferred income.

Revenue and expense from conferences are recorded on the accrual basis in the year the conferences are held. Amounts received in advance are included in deferred income.

Revenue from contributions is recorded at its fair value in the period received, including unconditional promises to give, and is classified based upon the existence or absence of donor-imposed restrictions.

Contributions received by the Institute are primarily private and governmental grants and contain donor-imposed restrictions as to their use. These restrictions are usually fulfilled within a two-year period by satisfying the respective restrictions. Standards revenue primarily includes revenue from periodical subscriptions, publications, and standards development groups, which are similar to conferences.

Cash and Cash Equivalents

Cash and cash equivalents include highly liquid, short-term investments purchased with maturities of three months or less from the date of acquisition.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded at the invoiced amount and do not bear interest. Management reviews a customer's credit history before extending credit. The Institute maintains allowances for doubtful accounts against certain billed receivables based upon the latest information available regarding whether receivables are ultimately collectible. Assessing the collectability of customer receivables requires management's judgment. The Institute determines its allowance for doubtful accounts by specifically analyzing individual accounts receivable, historical bad debts, customer creditworthiness, current economic conditions, and accounts receivable aging trends. Valuation reserves are periodically re-evaluated and adjusted as more information about the ultimate collectability of accounts receivable becomes available. Upon determination that a receivable is uncollectible, the receivable balance and any associated reserve are written off.

Investments

Investments, except special funds, are carried at fair value, which is generally determined on the basis of quoted market prices (*see Note 3*). Special funds are managed by an investment adviser and management group of companies (the Investment Manager) and invested in trusts, which, in turn, are invested primarily in marketable U.S. equity and debt securities. The special funds investments are carried at the unit price computed by the Investment Manager based on the fair value of the respective funds' net assets. There are no sale restrictions on the redemption of these funds. These funds require approximately one week after the trade date for cash to be wired back to the Institute. The Institute invests in these funds to diversify its investment portfolio. (*See Note 12 for more information regarding the fair value measurement of these investments.*)

Realized gains and losses on sales of investments are determined on an average cost basis. Purchases and sales of securities are recorded on a trade date basis.

Land, Buildings, and Equipment

Land, buildings, and equipment are stated at cost, including interest expense capitalized during the period of construction of the asset, or period of development until the time that it is ready for intended use, in the case of internal-use software. Depreciation is provided on a straight-line basis over the estimated useful life of the asset. Buildings, furniture, and equipment are depreciated or amortized over periods ranging from three

NOTE 2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(continued)

to 35 years. Assets under capital leases are depreciated over the term of the lease. Building improvements are amortized over 20 years. Software development costs are amortized over five years.

Upon retirement or other disposition of fixed assets, the cost and related accumulated depreciation or amortization are removed from the accounts and the resulting gains or losses, if any, are reflected in the consolidated statements of activities. Long-lived assets are reviewed for impairment when circumstances indicate that their carrying value may not be recoverable.

Accounts Payable and Accrued Expenses

Cash overdrafts are included in accounts payable and accrued expenses.

At December 31, 2011 and 2010, cash overdrafts amounted to \$2,824,400 and \$2,147,700, respectively.

Risks and Uncertainties

The Institute invests in several investment securities, which are exposed to various risks, such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of investment securities will occur in the near term. Such changes could materially affect the amounts reported in the consolidated statements of financial position.

Reclassification

Certain amounts in the 2010 consolidated financial statements have been reclassified to be consistent with the 2011 presentation.

NOTE 3 INVESTMENTS

Investments and trading liabilities at December 31, 2011 and 2010 consisted of the following:

	2011		2010	
	Cost	Fair Value	Cost	Fair Value
Investments				
<i>Short-term investments</i>				
Due from brokers and accrued interest	\$ -	\$ -	\$ 14,000	\$ 14,000
Term deposits	2,501,900	2,501,900	1,956,300	1,956,300
Money market funds	61,202,600	61,202,600	63,075,400	63,075,400
	63,704,500	63,704,500	65,045,700	65,045,700
<i>Equity investments</i>				
Equity securities	105,679,100	117,478,600	101,647,700	120,089,700
Mutual funds	55,585,300	41,489,200	54,167,700	49,831,900
Overnight investments	2,912,900	2,912,900	4,139,500	4,139,500
Due from brokers and accrued interest and fees	213,200	213,200	279,900	279,900
	164,390,500	162,093,900	160,234,800	174,341,000
<i>Fixed-income investments</i>				
U.S. Government obligations	14,369,000	14,807,100	13,664,000	13,573,300
Term deposits	735,700	735,700	808,100	808,100
Overnight investments	48,600	48,600	37,500	37,500
Mutual funds	84,026,100	85,808,100	81,096,300	82,487,200
Due from brokers and accrued interest and fees	115,900	115,900	107,500	107,500
	99,295,300	101,515,400	95,713,400	97,013,600
<i>Special funds</i>				
Investment in commingled	8,238,300	10,157,700	8,208,500	10,322,400
	8,238,300	10,157,700	8,208,500	10,322,400
Total investments	335,628,600	337,471,500	329,202,400	346,722,700
Trading liabilities				
<i>Short-term investments</i>				
Due to brokers and accrued fees	(4,800)	(4,800)	(5,200)	(5,200)
<i>Equity investments</i>				
Due to brokers and accrued fees	(774,300)	(774,300)	(597,900)	(597,900)
<i>Fixed-income investments</i>				
Due to brokers and accrued fees	(32,200)	(32,200)	(8,400)	(8,400)
Total trading liabilities	(811,300)	(811,300)	(611,500)	(611,500)
Net investments	\$ 334,817,300	\$ 336,660,200	\$ 328,590,900	\$ 346,111,200

NOTE 4 INVESTMENT (LOSS) INCOME

Net investment (loss) income for the years ended December 31, 2011 and 2010 consisted of the following:

	2011	2010
Interest and dividends	\$ 7,627,400	\$ 4,930,400
Realized gains, net	5,375,800	2,348,400
Change in net unrealized (losses) gains	(15,677,400)	18,544,600
	\$ (2,674,200)	\$ 25,823,400

Investment expense amounted to \$830,000 and \$626,400 in 2011 and 2010, respectively, and is netted against investment income.

NOTE 5 LAND, BUILDINGS, AND EQUIPMENT

Fixed assets, carried at cost, and the related accumulated depreciation and amortization at December 31, 2011 and 2010 consisted of the following:

	2011		2010	
	Cost	Accumulated Depreciation and Amortization	Cost	Accumulated Depreciation and Amortization
Buildings	\$ 17,956,300	\$ 11,502,800	\$ 17,956,300	\$ 11,048,700
Furniture and equipment	76,781,100	48,116,400	66,238,900	42,529,700
Building improvements	11,157,600	4,015,800	9,988,100	3,330,500
	105,895,000	63,635,000	94,183,300	56,908,900
Land	873,000	-	873,000	-
Information systems upgrade in process	17,690,000	-	15,434,800	-
Total	\$ 124,458,000	\$ 63,635,000	\$ 110,491,100	\$ 56,908,900

Furniture and equipment include assets under capital leases of \$8,452,700 and \$7,134,700 as of December 31, 2011 and 2010, respectively. Accumulated amortization of assets recorded under capital leases amounted to \$3,776,200 and \$3,287,900 at December 31, 2011 and 2010, respectively.

In 2011, \$5,784,500 of previously capitalized assets was deemed impaired and written off and has been reflected in general and administrative expenses on the consolidated statement of activities. These assets were software development costs related to the IEEE Business Platform (IBP) project and had not yet been placed in service. A new approach to the IBP project was approved and these assets are no longer usable under that approach.

NOTE 6 DEBT OBLIGATIONS

On April 1, 2011, the Institute fully redeemed the Series A and Series B bonds. The irrevocable letter of credit that collateralized this debt expired on May 1, 2011. The related Series A and Series B interest rate swap agreements were also terminated.

Debt obligations at December 31, 2010 consisted of loans from bond proceeds issued by the New Jersey Economic Development Authority (NJEDA), as follows:

NJEDA 2001 Series A Bonds, variable rate, annual principal and sinking fund payments through April 1, 2014 (the "Series A Bonds"); collateralized by irrevocable direct-pay letter of credit issued by Wachovia Bank, a Wells Fargo Bank, N.A. company.	\$ 3,145,000
NJEDA 2001 Series B Bonds, variable rate, annual principal and sinking fund payments through April 1, 2014 (the "Series B Bonds"); collateralized by irrevocable direct-pay letter of credit issued by Wachovia Bank, a Wells Fargo Bank, N.A. company.	1,435,000
	4,580,000
<i>Liability under swap agreements</i>	
Series A Bonds	214,300
Series B Bonds	95,500
	\$ 4,889,800

The Series A Bonds consisted of variable-rate bonds issued in the aggregate amount of \$7,065,000 on May 10, 2001 for the purpose of advance refunding a portion of the 1994 Bonds to take advantage of lower interest rates. The advance refunding resulted in the defeasance and legal extinguishment of the callable portion of the 1994 Bonds due from 2005 to 2014, which totaled \$6,390,000. In conjunction with the issuance of the Series A Bonds, the Institute entered into a swap agreement on April 24, 2001 with Wachovia Bank, a Wells Fargo Bank, N.A. company, whereby the Institute's interest rate obligation was fixed at 4.55% per year (the Series A Swap). The underlying notional amount of the Series A Swap was to be amortized through April 1, 2014 and matched the outstanding balance of the Series A Bonds, which amounted to \$3,145,000 as of December 31, 2010. The estimated fair value of the Series A Swap reflected a liability of approximately \$214,300 at December 31, 2010. The outstanding principal amount of the Series A Bonds at redemption on April 1, 2011 was \$3,145,800.

The Series B Bonds consisted of variable-rate bonds issued in the aggregate amount of \$3,810,000 on September 28, 2001 to permanently finance the renovation of a 15,000-square-foot warehouse facility into a new computer center and related equipment purchases and installations. In conjunction with the issuance of the Series B Bonds, the Institute entered into a swap agreement on August 22, 2001 with Wachovia Bank, whereby the Institute's interest rate obligation was fixed at 4.34% per year (the Series B Swap). The underlying notional amount of the Series B Swap was to be amortized through April 1, 2014 and matched the outstanding balance of the Series B Bonds, which amounted to \$1,435,000 as of December 31, 2010. The estimated fair value of the Series B Swap reflected a liability of approximately \$95,500 at December 31, 2010. The outstanding principal

amount of the Series B Bonds at redemption on April 1, 2011 was \$1,435,400.

An irrevocable standby Letter of Credit and Reimbursement Agreement with Wachovia Bank, dated May 1, 2001 and amended on September 1, 2001, collateralized both Series A and Series B Bonds. The letter of credit was available if any of the Series A or Series B Bonds were tendered and were unable to be remarketed. If the letter of credit was used, the Institute would have been required to reimburse Wachovia Bank on demand, including certain fees and charges. U.S. generally accepted accounting principles require that the current portion of long-term debt for bonds subject to such demand purchase option be calculated based on the letter of credit terms. Accordingly, at December 31, 2010, the entire amount outstanding on the Series A and Series B Bonds was classified as a current liability in the accompanying consolidated statements of financial position.

The letter of credit amounted to \$4,649,300 at December 31, 2010.

The Institute maintains a credit facility, which was increased from \$25,000,000 in 2010 to \$50,000,000 in 2011. The credit facility consists of \$20,000,000 with Wells Fargo Bank, N.A. (formerly Wachovia Bank), \$15,000,000 with JPMorgan Chase Bank, N.A. (previously The Bank of New York), and \$15,000,000 with HSBC Bank, N.A. USA, under a revolving credit agreement dated February 28, 2002, as amended. The Institute is charged commitment fees, which amounted to \$133,000 in 2011 and \$126,700 in 2010, on the unused portion of the credit facility. The credit facility was not utilized in 2011 and 2010; the Institute had no outstanding borrowings under the credit facility in either year. On September 27, 2011, the revolving credit agreement, as amended, was extended until September 1, 2013.

NOTE 6 DEBT OBLIGATIONS (continued)

As of December 31, 2011, the amount of the line of credit for issuing standby letters of credit was \$233,600 with HSBC Bank USA, N.A. The Institute is charged 1% of the face amount, upon issuance, of the standby letters of credit.

The Institute is required to maintain certain financial ratios under the revolving credit agreement with Wells Fargo Bank, N.A., JPMorgan Chase Bank, N.A., and HSBC Bank, N.A. USA. At December 31, 2011, the Institute

was in violation of certain financial ratios due to non-operational losses on investments and pension and related benefits. On June 8, 2012, the Institute obtained a waiver and amendment from Wells Fargo Bank, N.A., JPMorgan Chase Bank, N.A., and HSBC Bank, N.A. USA waiving violations at December 31, 2011 and amending the definitions of the financial ratios.

Interest expense, net of amounts capitalized of \$527,800 in 2011 and \$73,400 in 2010, amounted to \$76,000 for 2011 and \$640,300 for 2010.

NOTE 7 OBLIGATIONS UNDER CAPITAL LEASES

The approximate annual rental payments for obligations under capital leases are as follows:

Year	Amount
2012	\$ 1,843,300
2013	1,438,500
2014	1,147,500
2015	764,400
2016	204,700
Total	5,398,400
Less: Amount representing interest imputed at an average rate of 7.95%	687,400
Present value of minimum lease payments	\$ 4,711,000

Amortization of the assets under capital leases is included in depreciation and amortization expense.

NOTE 8 COMMITMENTS AND CONTINGENCIES

At December 31, 2011, minimum rental commitments under noncancelable operating leases for office space and computer equipment are as follows:

Year	Amount
2012	\$ 2,390,600
2013	2,432,900
2014	2,229,000
2015	1,997,200
2016	1,885,300
Thereafter	11,398,600
	\$ 22,333,600

The leases for the office space are subject to escalation. Total rent expense for noncancelable operating leases amounted to \$2,498,800 and \$2,810,700 in 2011 and 2010, respectively. At December 31, 2011, the Institute had an irrevocable standby letter of credit in the amount of \$583,000 with Wells Fargo Bank, N.A., which serves as a security deposit as required by the terms of its lease agreement with Three Park Avenue Building Company, LP.

The Institute is currently involved in certain litigation and claims arising in the ordinary course of business. Its management believes that the amount of any liability arising out of these actions that may be sustained, if any, beyond existing insurance liability coverages would not have a material impact on the accompanying consolidated financial statements.

NOTE 9 PENSION AND OTHER POST-RETIREMENT BENEFITS

The Institute sponsors two qualified pension plans and one nonqualified pension plan and other post-retirement benefit plans for its employees. In November 2006, the Board of Directors approved the freezing of the qualified employee benefit plans as of June 30, 2007 and the implementation of a defined contribution plan effective July 1, 2007.

The following tables provide a reconciliation of the changes in the plans' benefit obligations and fair value of assets over the two-year period ended December 31, 2011, and a statement of the funded status as of December 31 of both years:

	Pension Benefits		Other Benefits	
	2011	2010	2011	2010
<i>Reconciliation of benefit obligation</i>				
Obligation at January 1	\$ 73,354,300	\$ 68,180,000	\$ 3,943,100	\$ 3,515,200
Service cost	255,000	255,000	189,900	162,900
Interest cost	3,665,500	3,697,200	204,300	197,100
Actuarial loss	8,282,800	5,089,300	609,300	218,400
Benefit payments	(3,746,400)	(3,867,200)	(139,000)	(150,500)
Obligation at December 31	\$81,811,200	\$73,354,300	\$4,807,600	\$3,943,100
<i>Reconciliation of fair value of plan assets</i>				
Fair value of plan assets at January 1	\$ 69,843,300	\$ 57,315,600	\$ -	\$ -
Actual return on plan assets	(1,285,300)	6,477,200	-	-
Employer contributions	3,107,800	9,917,700	139,000	150,500
Benefit payments	(3,746,400)	(3,867,200)	(139,000)	(150,500)
Fair value of plan assets at December 31	\$67,919,400	\$69,843,300	\$ -	\$ -
<i>Funded status</i>				
Funded status at December 31	\$ (13,891,800)	\$ (3,511,000)	\$ (4,807,600)	\$ (3,943,100)

The accumulated benefit obligation for all defined benefit pension plans was \$81,811,200 at December 31, 2011 and \$73,354,300 at December 31, 2010.

NOTE 9 PENSION AND OTHER POST-RETIREMENT BENEFITS *(continued)*

At December 31, the funded status of the plans is reported in the consolidated statements of financial position as follows:

	Pension Benefits		Other Benefits	
	2011	2010	2011	2010
Current liabilities	\$ (17,700)	\$ (17,700)	\$ (205,300)	\$ (191,500)
Noncurrent liabilities	(13,874,100)	(3,493,300)	(4,602,300)	(3,751,600)
Net amount recognized	\$ (13,891,800)	\$ (3,511,000)	\$ (4,807,600)	\$ (3,943,100)

Amounts recognized in changes in unrestricted net assets for the year ended December 31 consisted of:

	Pension Benefits		Other Benefits	
	2011	2010	2011	2010
Net loss	\$ 13,296,300	\$ 2,678,100	\$ 577,300	\$ 241,300
Prior service cost	(200)	(300)	(33,200)	(33,200)
Net transition obligation	-	-	(45,800)	(45,800)
Total	\$ 13,296,100	\$ 2,677,800	\$ 498,300	\$ 162,300

Cumulative amounts recognized in changes in unrestricted net assets and not yet recognized in net periodic benefit cost as of December 31 consisted of:

	Pension Benefits		Other Benefits	
	2011	2010	2011	2010
Net loss	\$ 29,129,800	\$ 15,833,500	\$ 1,406,100	\$ 828,800
Prior service cost	-	200	22,900	56,200
Net transition obligation	-	-	137,300	183,000
Total	\$ 29,129,800	\$ 15,833,700	\$ 1,566,300	\$ 1,068,000

Information for benefit plans with an accumulated benefit obligation in excess of plan assets as of December 31 consisted of:

	Pension Benefits		Other Benefits	
	2011	2010	2011	2010
Projected benefit obligation	\$ 81,811,200	\$ 73,354,300	\$ 4,807,600	\$ 3,943,100
Accumulated benefit obligation	81,811,200	73,354,300	-	-
Fair value of plan assets	67,919,400	69,843,300	-	-

The following table provides the components of net periodic benefit cost for the plans for 2011 and 2010:

	Pension Benefits		Other Benefits	
	2011	2010	2011	2010
Service cost	\$ 255,000	\$ 255,000	\$ 189,900	\$ 162,900
Interest cost	3,665,500	3,697,200	204,400	197,100
Expected return on plan assets	(4,482,500)	(4,576,800)	-	-
Amortization of transition obligation	-	-	45,800	45,800
Amortization of prior service cost	200	300	33,200	33,200
Amortization of net loss	754,400	511,000	31,900	18,600
Net periodic (benefit) cost	\$ 192,600	\$ (113,300)	\$ 505,200	\$ 457,600

The estimated amount of net unrestricted assets to be recognized as net periodic benefit cost in the next fiscal year is as follows:

	Benefits	Other Benefits
Transition obligation	\$ -	\$ 45,800
Prior service cost	-	22,900
Net loss	2,119,000	61,600
Total	\$ 2,119,000	\$ 130,300

The prior service costs are amortized on a straight-line basis over the average remaining service period of active participants. Gains and losses in excess of 10% of the greater of the benefit obligation and the market-related value of assets are amortized over the average remaining service period of active participants.

The Institute has multiple noncontributory, nonpension post-retirement benefit plans.

The assumptions used in the measurement of the Institute's benefit obligation are shown in the following table:

	Pension Benefits		Other Benefits	
	2011	2010	2011	2010
Assumptions as of December 31				
Discount rate	4.25%	5.25%	4.25%	5.25%
Rate of compensation increase	N/A	N/A	N/A	N/A

NOTE 9 PENSION AND OTHER POST-RETIREMENT BENEFITS (continued)

The assumptions used in the measurement of the net periodic benefit cost are shown in the following table:

	Pension Benefits		Other Benefits	
	2011	2010	2011	2010
Weighted-average assumptions as of January 1				
Discount rate	5.25%	5.75%	5.25%	5.75%
Expected return on plan assets	6.75%	7.50%	N/A	N/A
Rate of compensation increase	N/A	N/A	N/A	N/A

The health care plan benefits are a flat dollar reimbursement to the retirees toward health care premiums. An increase in the reimbursement amount is not assumed.

Plan Assets

IEEE determines its assumptions for the expected rate of return on plan assets for its retirement plans based on ranges of anticipated rates of return for each asset class. A weighted range of nominal rates is then determined based on target allocations for each asset class. IEEE considers the expected rate of return to be a longer-term assessment of return expectations and does not anticipate changing this assumption annually unless economic conditions change significantly. The expected rate of return for each plan is based upon its expected asset allocation. Market performance over a number of earlier years is evaluated covering a wide range of economic conditions to determine whether there are reliable reasons for projecting forward any past trends.

IEEE's pension and post-retirement plan asset allocation for the U.S. plans at the end of 2011 and 2010, and the target allocation for 2011 by asset category based on asset fair values are as follows:

Asset Category	2011 Target Asset Allocation	Pension Assets at December 31		Post-Retirement Assets at December 31	
		2011	2010	2011	2010
Equity securities	10%	10%	68%	N/A	N/A
Debt securities	90%	90%	31%	N/A	N/A
Cash and cash equivalents	-	0%	1%	N/A	N/A
Total	100%	100%	100%	N/A	N/A

Third-party investment managers manage IEEE's pension plan assets, rebalancing assets as the Institute deems appropriate. IEEE's investment strategy with respect to its pension assets is to maintain a diversified investment portfolio across several asset classes targeting an annual rate of return of 6.75% in 2011 and 2010, while ensuring that the accumulated benefit obligation is fully funded. To develop the expected long-term rate of return on assets assumption, the Institute considered the historical returns and the future expectations for returns for each asset class, as well as the target asset allocation of the pension portfolio.

IEEE's pension and post-retirement funds' investment strategies are to invest in a prudent manner for the exclusive purpose of providing benefits to participants. The investment strategies are targeted to produce a total return that, when combined with IEEE's contributions to the funds, will maintain the funds' ability to meet all required benefit obligations. Risk is controlled through diversification of asset types and investments in debt securities, domestic and international equities, fixed income securities, and cash.

The Institute's investment objectives for the pension plans are to minimize the volatility of the pension assets relative to pension liabilities and to offset the required contributions. The prior target asset allocations were 65% equity securities and 35% debt securities. In 2011, as part of a pension de-risking strategy, the investment strategy was revised to increase the matching characteristics of the plans assets relative to the liabilities. The new target asset allocations, which were reached before the end of 2011, are 10% equity securities and 90% debt securities.

Investment strategies and policies for the pension plans reflect a balance of risk-reducing and return-seeking considerations. The objective of minimizing the volatility of assets relative to liabilities is addressed primarily through asset - liability matching. At December 31, 2011, approximately 90% of the plan assets were invested in corporate bonds and U.S. Government securities. These debt securities match the long-dated nature of the pension liabilities. At December 31, 2011, approximately 5% of the plan assets were held in common stock and 5% in mutual funds. These equity investments should provide asset growth to offset required contributions. The Institute's policy is to reconsider the plan asset allocation investments regularly to ensure actual allocations are in line with target allocations.

All plan assets are externally managed. Investment managers are not permitted to invest outside of the asset class(es) or strategy for which they have been appointed. The Institute uses investment guidelines to ensure investment managers invest solely within the investment strategy for which they have been retained.

The investment guidelines allow the managers to keep up to 5% in cash and cash equivalents. Contributions made in the plan years ended December 31, 2011 and 2010 were approximately \$3,246,800 and \$9,917,700, respectively. In the first quarter of 2012, an additional \$4,500,000 contribution was made for the plan year ended December 31, 2011.

The fair value hierarchy of the pension and post-retirement funds' investments at December 31, 2011 is displayed in the table below. See Note 12 for an explanation of the fair value hierarchy levels and determination of fair value.

	Level 1	Level 2	Level 3	Total
Financial assets				
<i>Common stock</i>				
Industrials	\$ 191,800	\$ -	\$ -	\$ 191,800
Telecommunications	207,800	-	-	207,800
Consumer	525,500	-	-	525,500
Other	2,496,400	-	-	2,496,400
Total common stocks	3,421,500	-	-	3,421,500
<i>Mutual funds</i>				
Other funds	3,642,500	-	-	3,642,500
Total mutual funds	3,642,500	-	-	3,642,500
Corporate bonds	-	52,418,600	-	52,418,600
U.S. Government securities	6,928,100	-	-	6,928,100
Short-term investments	791,800	-	-	791,800
Total assets at fair value	14,783,900	52,418,600	-	67,202,500
Net receivables	716,900	-	-	716,900
Total assets	\$ 15,500,800	\$ 52,418,600	\$ -	\$ 67,919,400

The fair value hierarchy of the pension and post-retirement funds' investments at December 31, 2010 is displayed in the table below. See Note 12 for an explanation of the fair value hierarchy levels and determination of fair value.

NOTE 9 PENSION AND OTHER POST-RETIREMENT BENEFITS (continued)

	Level 1	Level 2	Level 3	Total
Financial assets				
<i>Common stock</i>				
Industrials	\$ 2,080,300	\$ -	\$ -	\$ 2,080,300
Telecommunications	1,809,300	-	-	1,809,300
Consumer	6,589,300	-	-	6,589,300
Other	25,331,200	-	-	25,331,200
Total common stocks	35,810,100	-	-	35,810,100
<i>Mutual funds</i>				
Growth funds	11,185,300	-	-	11,185,300
Fixed income funds	11,292,600	-	-	11,292,600
Total mutual funds	22,477,900	-	-	22,477,900
Corporate bonds	-	4,849,500	-	4,849,500
U.S. Government securities	624,900	4,967,600	-	5,592,500
Short-term investments	997,800	-	-	997,800
Total assets at fair value	59,910,700	9,817,100	-	69,727,800
Net receivables	115,500	-	-	115,500
Total assets	\$ 60,026,200	\$ 9,817,100	\$ -	\$ 69,843,300

Contributions

There are no required contributions due to the qualified pension plans during 2012 under the Internal Revenue Service's (IRS) minimum funding regulations.

IEEE expects to contribute approximately \$18,000 to its nonqualified pension plan and approximately \$205,000 to its other post-retirement benefit plans during 2012.

Expected Benefit Payments

	Pension Benefits	Other Benefits
2012	\$ 4,257,000	\$ 205,300
2013	3,593,700	206,400
2014	3,888,600	214,300
2015	3,506,700	218,900
2016	3,530,400	223,400
2017 to 2021	21,264,300	1,254,000

NOTE 10 401(K) SAVINGS AND INVESTMENT PLAN

The Institute has a defined contribution 401(k) Savings and Investment Plan (the Plan) for eligible employees, who are eligible to participate after the start of the next pay period following 30 days of employment. Under the Plan, employees may generally contribute from 2% to 16% of their salary; however, not in excess of IRS limitations. The Institute provides a 100% matching contribution up to 4% of each employee's salary. The Institute contributed \$2,970,900 and \$2,941,700 to the Plan in 2011 and 2010, respectively.

NOTE 11 TAX STATUS

The Institute is qualified under Section 501(c)(3) of the Internal Revenue Code as an organization exempt from federal income taxes.

Accounting principles generally accepted in the United States require management to evaluate uncertain tax positions taken by the Institute. The financial statement effects of a tax position are recognized when the position is more likely than not, based on the technical merits, to be sustained upon examination by the IRS. Management has analyzed the tax positions taken by the Institute, and has concluded that as of December 31, 2011, there are no uncertain positions taken or expected to be taken. The Institute has recognized no interest or penalties related to uncertain tax positions. The

Institute is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress. Management believes it is no longer subject to income tax examinations for years prior to 2007.

NOTE 12 FINANCIAL INSTRUMENTS AND RISK MANAGEMENT Cash

The Institute maintains cash balances which, at times, are in excess of the Federal Deposit Insurance Corporation insured amounts. The Institute mitigates this risk by placing its cash in high-quality financial institutions.

Debt Obligations

The fair value of the Institute's debt obligations (including current installments) was estimated based on quoted market prices for similar debt of the same remaining maturities. At December 31, 2010, the estimated fair value of the Institute's debt was \$5,231,000. The Institute utilized interest rate swap agreements to manage the risk on interest rates associated with its debt obligations. These swaps were terminated on April 1, 2011 with the redemption of the bonds.

Fair Value Measurements

The Institute values its investments in accordance with Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 820, *Fair Value Measurements and Disclosures*. ASC 820 does not require any new fair value measurements, but rather eliminates inconsistencies in guidance found in prior accounting pronouncements. ASC 820 defines fair value, requires expanded disclosures about fair value measurements and establishes a hierarchy for the inputs used to measure fair value based on the source of the input at the measurement date, which generally range from quoted prices for identical instruments in a principal trading market (Level 1) to estimates determined using related market data (Level 3). Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Multiple inputs may be used to measure fair value; however, the level of fair value for each financial asset or liability is based on the lowest significant input level within this fair value hierarchy. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

Details on the methods and assumptions used to determine the fair values of the financial assets and liabilities are as follows:

Fair value measurements based on Level 1 inputs: Measurements that are most observable are based on quoted prices of identical instruments obtained from the principal markets in which they are traded. Closing prices are both readily available and representative of fair value, and market transactions occur with sufficient frequency and volume to assure liquidity. Level 1 inputs utilize quoted prices (unadjusted) in active markets for identical assets that the Institute has the ability to access. Financial assets utilizing Level 1 inputs include certain common stock, U.S. mutual funds, most U.S. government securities, money market funds, and short-term investments.

Fair value measurements based on Level 2 inputs: Measurements derived indirectly from observable inputs or from quoted prices from markets that are less liquid and include over-the-counter derivative instruments that are priced on an exchange-traded curve, but have contractual terms that are not identical to exchange-traded contracts. Level 2 inputs utilize other than quoted prices included in Level 1 that are observable for the asset, either directly or indirectly, for substantially the full term of the asset.

The observable inputs are used in valuation models to calculate the fair value for the asset. Financial assets and liabilities utilizing Level 2 inputs include term deposits, short-term investments, certain U.S. government securities commingled funds, certain mortgage- and asset-backed securities, and collateralized debt obligation securities and interest rate swaps.

NOTE 12 FINANCIAL INSTRUMENTS AND RISK MANAGEMENT *(continued)*

Fair value measurements based on Level 3 inputs: Measurements that are least observable are estimated from related market data, determined from sources with little or no market activity for comparable contracts or are positions with longer durations. The Institute had no Level 3 assets or liabilities at December 31, 2011 or 2010.

The methods described above may produce a fair value calculation that may not indicate net realizable value or reflect future fair values. Furthermore, while the Institute believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

There were no changes in valuation techniques that resulted in a transfer in or out of an investment's assigned level within the hierarchy.

The Institute applies the methods described in ASC 820 to value its financial assets and liabilities. Fair value measurements are applied based on the unit of account from the reporting entity's perspective. Therefore, the unit of account determines what is being measured by reference to the level at which the asset or liability is aggregated (or disaggregated) for purposes of applying other accounting pronouncements.

The following table provides the fair value hierarchy of the Institute's financial assets and liabilities as of December 31, 2011:

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
Financial assets				
<i>Common stock</i>				
Industrials	\$ 7,103,900	\$ -	\$ -	\$ 7,103,900
Telecommunications	5,325,100	-	-	5,325,100
Consumer	20,549,400	-	-	20,549,400
Other	84,500,200	-	-	84,500,200
Total common stocks	117,478,600	-	-	117,478,600
<i>Mutual funds</i>				
Growth funds	21,471,800	-	-	21,471,800
Fixed income funds	85,808,100	-	-	85,808,100
Money market funds	64,164,100	-	-	64,164,100
Other funds	20,017,400	-	-	20,017,400
Total mutual funds	191,461,400	-	-	191,461,400
U.S. Government securities	14,807,100	-	-	14,807,100
Commingled funds	-	10,157,700	-	10,157,700
Term deposits	-	3,237,600	-	3,237,600
Total assets at fair value	323,747,100	13,395,300	-	337,142,400
Net receivables	329,100	-	-	329,100
Total assets	\$ 324,076,200	\$ 13,395,300	\$ -	\$ 337,471,500

The following table provides the fair value hierarchy of the Institute's financial assets and liabilities as of December 31, 2010:

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
Financial assets				
<i>Common stock</i>				
Industrials	\$ 7,519,700	\$ -	\$ -	\$ 7,519,700
Telecommunications	5,586,100	-	-	5,586,100
Consumer	21,629,200	-	-	21,629,200
Other	85,354,700	-	-	85,354,700
Total common stocks	120,089,700	-	-	120,089,700
<i>Mutual funds</i>				
Growth funds	24,853,700	-	-	24,853,700
Fixed income funds	82,487,100	-	-	82,487,100
Money market funds	62,479,800	-	-	62,479,800
Other funds	24,978,200	-	-	24,978,200
Total mutual funds	194,798,800	-	-	194,798,800
U.S. Government securities	13,573,300	-	-	13,573,300
Commingled funds	-	10,322,500	-	10,322,500
Term deposits	-	3,347,400	-	3,347,400
Short-term investments	4,177,000	12,600	-	4,189,600
Total assets at fair value	332,638,800	13,682,500	-	346,321,300
Net receivables	401,400	-	-	401,400
Total assets	\$ 333,040,200	\$ 13,682,500	\$ -	\$ 346,722,700
FINANCIAL LIABILITIES				
Swap Agreement – Series A Bonds	\$ -	\$ 214,300	\$ -	\$ 214,300
Swap Agreement – Series B Bonds	-	95,500	-	95,500
	\$ -	\$ 309,800	\$ -	\$ 309,800

NOTE 13 NET ASSETS

Temporarily and permanently restricted net assets consisted of the following:

	December 31	
	2011	2010
Temporarily restricted		
Grant funds held for specific purposes	\$ 2,061,100	\$ 2,383,900
Funds held for awards, medals and other specific purposes	544,300	613,900
	<u>\$ 2,605,400</u>	<u>\$ 2,997,800</u>
Permanently restricted		
Endowment principal for awards	\$ 191,400	\$ 191,400

Net assets that were released from donor restrictions by incurring expenses satisfying the restricted purposes during fiscal 2011 and 2010 were as follows:

	2011	2010
Grant funds held for specific purposes	\$ 904,100	\$ 571,500
Funds held for awards, medals and other specific purposes	67,000	32,000
	<u>\$ 971,100</u>	<u>\$ 603,500</u>

NOTE 14 RELATED PARTIES**Eta Kappa Nu (HKN)**

On September 1, 2010, the Institute acquired Eta Kappa Nu Association (HKN) for no consideration. The Institute received \$483,400 in cash and cash equivalents and assumed \$404,000 in liabilities for lifetime memberships in the acquisition. Upon completion of the acquisition, the cash and cash equivalent assets were transferred to the IEEE Foundation, and an additional \$1,200,000 contribution was made by the Institute to the IEEE Foundation for the purposes of the IEEE-Eta Kappa Nu Restricted Fund.

IEEE Foundation, Incorporated

The Institute has transactions with IEEE Foundation, Incorporated (the Foundation), a related organization, which performs activities in support of the scientific and educational functions and programs of the Institute. During 2010, the Directors of the Institute and the Foundation deemed that certain costs, previously allocated to the Foundation, were no longer considered to be those of the Foundation. The Institute made cash contributions of \$520,600 and \$524,000 in 2011 and 2010, respectively, to the Foundation. The Institute contributed an additional \$750,000 and \$1,683,400 to the IEEE-Eta Kappa Nu Restricted Fund during 2011 and 2010, respectively. In 2010, the Institute also contributed an additional \$1,000,000 as seed money for the Power and Energy Scholarship Fund. The Institute provides certain accounting and administrative services to the Foundation, and the Foundation paid \$495,000 in 2011 and \$479,000 in 2010 for these support services. The Institute provided fundraising administrative services (contributed services) valued at \$653,900 and \$709,000 during 2011 and 2010, respectively. The Institute also solicited contributions on behalf of the Foundation through its annual membership renewal process. Total contributions received were \$622,500 and \$687,200 in 2011 and 2010, respectively.

The Institute held on deposit \$26,959,600 and \$27,371,900 from the Foundation at December 31, 2011 and 2010, respectively. The Institute invested these amounts on behalf of the Foundation. The interest and dividends earned on these amounts were \$673,700 and \$248,000 in December 2011 and 2010, respectively. The Foundation had net realized and unrealized (losses) gains of approximately \$(1,049,100) and \$726,100 for 2011 and 2010, respectively, of which \$(1,069,500) and \$787,000 were related to investments held in the IEEE investment pool in 2011 and 2010, respectively.

Receivables due from the Foundation included grants receivable of \$209,500 and \$223,500 at December 31, 2011 and 2010, respectively, and other receivables of \$283,700 and \$124,600 at December 31, 2011 and 2010, respectively. Amounts due to the Foundation were \$872,600 and \$110,400 at December 31, 2011 and 2010, respectively.

Summarized financial data of the Foundation for 2011 and 2010 is as follows:

	December 31	
	2011	2010
Total assets	\$ 33,633,700	\$ 32,698,500
Total liabilities	1,720,500	1,310,500
Net assets	<u>\$ 31,913,200</u>	<u>\$ 31,388,000</u>
	Year Ended December 31	
	2011	2010
Contributions	\$ 5,764,100	\$ 6,018,900
Change in beneficial interest in trust	(85,500)	339,600
Investment income (loss)	(241,500)	1,449,500
Expenses	(4,911,900)	(3,700,500)
Change in net assets	<u>\$ 525,200</u>	<u>\$ 4,107,500</u>

IEEE-Industry Standards and Technology Organization

The Institute entered into transactions with the IEEE-Industry Standards and Technology Organization (IEEE-ISTO), a related organization. The IEEE-ISTO is an organization that operates for the development of industry standards. The Institute provides certain professional services and facilities that are reimbursed by the IEEE-ISTO. Total combined revenues from these transactions were \$173,500 and \$179,400 for 2011 and 2010, respectively.

Summarized financial data of the IEEE-ISTO for 2011 and 2010 is as follows:

	December 31	
	2011 (Unaudited)	2010 (Audited)
Total assets	\$ 20,419,000	\$ 22,477,900
Total liabilities	19,570,700	21,832,100
Net assets	<u>\$ 848,300</u>	<u>\$ 645,800</u>
	Year Ended December 31	
	2011 (Unaudited)	2010 (Audited)
Revenues	\$ 9,211,600	\$ 10,855,900
Expenses	9,013,700	9,697,100
Change in net assets before other income and provision for federal income taxes	<u>\$ 197,900</u>	<u>\$ 1,158,800</u>

NOTE 15 SUBSEQUENT EVENTS

The Institute evaluated events and transactions that occurred between January 1 and June 22, 2012, which is the date that the Institute's consolidated financial statements were available to be issued for disclosure and recognition. There were no events noted that would require disclosure in these consolidated financial statements.

IEEE Web Pages

The following IEEE Web pages or sites contain additional information about the IEEE products, services, and activities discussed in this annual report.

IEEE Main Site: www.ieee.org

The 2011 IEEE Annual Report is available online at: www.ieee.org/annualreport

IEEE Awards and Recognitions

IEEE China Office

cn.ieee.org/index.html

IEEE eLearning Library

www.ieee-elearning.org/

IEEE Engineering Projects in Community Service (EPICS)

www.ieee.org/education_careers/education/preuniversity/epics_high.html

IEEE English for Technical Professionals

www.ieee.org/education_careers/education/university_programs/technical_english/index.html

IEEE Xtreme Programming Competition

www.ieee.org/membership_services/membership/students/competitions/xtreme/index.html

IEEE Fellow Program

www.ieee.org/fellow

IEEE-HKN (Eta Kappa Nu)

www.hkn.org

IEEE Milestones in Electrical Engineering and Computing

www.ieee.milestones.org

IEEE Presidents' Change the World Competition

www.ieee.org/changetheworld

IEEE Presidents' Scholarship

www.ieee.org/education_careers/education/preuniversity/scholarship.html

IEEE Publications and Standards

www.ieee.org/publications_standards/index.html

IEEE Public Visibility Initiative

www.ieee.org/about/corporate/public_visibility/index.html

IEEE Smart Grid

smartgrid.ieee.org

IEEE Spectrum Online

www.spectrum.ieee.org

IEEE Standards Association

standards.ieee.org

IEEE.tv

www.IEEE.tv

IEEE-USA

www.ieeeusa.org

IEEE-Wiley eBooks Library

www.ieee.org/publications_standards/publications/subscriptions/prod/ieee_wiley_ebook.html

IEEE Women in Engineering

www.ieee.org/membership_services/membership/women/index.html

IEEE Xplore® Digital Library

ieeexplore.ieee.org/Xplore/guesthome.jsp

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