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The President's Perspective

To express gratitude and recognize those donors who have distinguished themselves through generous donations, ongoing support or planned gifts, the IEEE Foundation Donor Recognition Program was enhanced to recognize our Leadership Association, Honored Philanthropists and those who are Forever Generous. You can read more about who recently joined the IEEE Goldsmith Legacy League on page ###..?

A testimony to the loyalty of our donors, the generosity of individuals, corporations and organizations committed to the support of Education, Innovation and Historical Preservation are the grants we have been able to provide and the Funds we have established. We are not just imagining – we are accomplishing.

Because of our donors' willingness to give, and responsiveness to important initiatives, the IEEE Foundation ramped up its Donor Recognition Program to be sure that we are not just saying: "Thank You", but appropriately expressing the impact your support makes and providing an opportunity for our donors to have a permanent place in IEEE Foundation History. Your support will give you formal recognition in the Leadership Association, IEEE Heritage Circle or IEEE Goldsmith Legacy League. Contact the Development Office for more information on these programs.

Recently other Board members and I have formally welcomed ###? IEEE Goldsmith Legacy League members and ###? IEEE Heritage Circle members. As an IEEE Heritage Circle supporter myself, I enjoy welcoming others into that elite group of Honored Philanthropists. A residual benefit of this program, for me personally; is that I have been able to meet, reconnect, visit and thank donors to express my personal gratitude. Together we are making a difference.



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Thank you for your dedication and support,

Richard J. Gowen
2010 President, IEEE Foundation



2010 IEEE Honors Ceremony – Expect the EXTRAORDINARY



Award recipients and their sponsors pose for a group photo.

The “fathers” of DSL and the Internet were among the pioneers celebrated at the 2010 IEEE Honors Ceremony. The prestigious event recognizes individuals and companies from the engineering community for their outstanding accomplishments. This year, 21 medals and recognitions were presented to 27 innovative individuals, including the pioneers of many of today's most important technologies. The ceremony, held on 26 June at the Le Windsor banquet hall in Montreal, was broadcast live on IEEE.tv, where you can still view it in its entirety. IEEE president and CEO **Pedro A. Ray** and IEEE president-elect **Moshe Kam** were the event's hosts.

IEEE Foundation is proud to sponsor the following awards which were presented at the 2010 IEEE Honors Ceremony:

• IEEE Medal of Honor

Andrew J. Viterbi, developer of the Viterbi algorithm and other breakthroughs that play key roles in operating computer disk drives, satellite communications and mobile telephones, received the IEEE Medal of Honor. The medal, sponsored by the IEEE Frank A. Cowan Fund and the IEEE Foundation and representing IEEE's highest award, recognizes Viterbi for seminal contributions to communications technology and theory.



At the Honors Ceremony, from left are Moshe Kam, IEEE Medal of Honor recipient Andrew J. Viterbi, Richard J. Gowen and Pedro Ray.

• IEEE Founders Medal



Paul Edward Gray, an engineer, award-winning teacher and expert in semiconductor electronics whose vision and leadership have advanced engineering education and practice around the world, was honored with the IEEE Founders Medal. The medal, sponsored by the IEEE Foundation, recognizes Gray for an exemplary career of leadership in education, research and public policy.

• IEEE Haraden Pratt Award

Raymond David Findlay, a professional engineer whose volunteer leadership and service have enhanced the technical prestige of IEEE and benefitted its members, received the 2010 IEEE Haraden Pratt Award to recognize outstanding service to IEEE. The award, sponsored by the IEEE Foundation, recognizes Findlay for sustained leadership at IEEE and regional levels in effecting positive change for IEEE and its members.



Raymond David Findlay, second from left, receives the IEEE Haraden Pratt Award

His Passion for Teaching has Produced Great Results

Randy Howard Katz, World-Class Engineering Professor, received the **IEEE James H. Mulligan Jr. Education Medal**. The medal, sponsored by The Mathworks, Inc.; Pearson Education, Inc.; National Instruments Foundation and the IEEE Life Members Fund of the IEEE Foundation, recognizes Katz for contributions to engineering education through influential textbooks, innovative curricular development, exceptional mentorship and inspired graduate and undergraduate teaching. Katz, a University of California, Berkeley, professor, is considered a world-class educator and research advisor by his former students. Katz has made a profound impact on engineering education.



Dr. Karen Panetta

“Ask Dr. Karen” is not just for Nerd Girls

By Karen Johnson

Do you know a girl with questions about college, careers, courses and how to turn her “inner nerd” into an exciting future? Soon she’ll have some place to turn for answers. The IEEE Foundation has awarded preliminary grant funding support to the development of the new Web series

“Ask Dr. Karen”. The Web series will feature Dr. Karen Panetta, Professor of Engineering at Tufts University, Editor-in-Chief of Women in Engineering Magazine, and founder of the Nerd Girls. Dr. Panetta has been mentoring girls and young women who are interested in engineering and technical studies for over a decade.

She founded the Nerd Girls program to encourage more girls to pursue engineering studies and careers. The goal of the “Ask Dr.

Karen” Web series is to share Dr. Panetta’s knowledge with a broad audience of up-and-coming nerd girls via the internet at www.nerdgirls.com. “Ask Dr. Karen” will address both academic and personal questions, as long as they relate to girls’ interests in science, technology, engineering and math. As the series progresses, Dr. Panetta will meet with girls around the world to spread the word that all types of girls can pursue studies in engineering, math and science and that those careers will allow them to make innovative and beneficial contributions to the world around them. By answering their questions, busting the myths, and removing the mystery, she hopes to encourage more interest among girls. Dr. Panetta recently joined forces with Emmy-nominated Hollywood producers at MPH Entertainment to develop a Nerd Girls reality show. Casting for that program is currently underway at www.nerdgirls.com.

BUG Challenge in Chile Motivates Youth

By Pablo W. Krause, Universidad de Chile

What an Engineer really does in his work is a dark mystery for most high school students, particularly in Chile; and that’s what the BUG Challenge seeks to change. Supported by an IEEE Foundation grant, this new event is expected to establish a milestone in engineer education.

The main goal is to immerse high school into a complete “engineering innovation process”, using a wireless and portable prototyping platform, BugLabs BUG platform. The experience includes identifying a real life problem, brainstorming the solution, creating prototypes, benchmarking with existing solutions and finally, implementing a functional pilot device or service based on the BUG.

Volunteer undergraduate engineering students will share their time and knowledge, teaching participants engineering design practices, computer programming and basic skills on the BUG platform. The learning process will go on from September 2010 until the very competition. During this time, students will also be working on their particular solutions, polishing their initial ideas and doing heavy field testing of their prototypes. Finally, they will implement and present their final solution in June 2011.

Schools will be selected to participate based on their interests and area of expertise. They will present three to five member teams,

who will work along with an engineering student “tutor” throughout the Challenge.

Although the interests in innovation and equality of opportunities in education have become increasingly important in Chile over the past few years, there are no current events that address motivating youths into engineering related careers through the creation of real world solutions. The introduction of a portable, fast prototyping technology will permit the students to turn ideas with great potential into real world devices/services in a timely manner. The great hope is that the event will change the perceptions of engineering, motivate participants into making their own every-day-life solutions and to seek aid in technology. This could be a life-changing experience for the students and a great demonstration of what engineering and innovation really are.



From left, are (standing) President of the IEEE Universidad de Chile Student Branch **David Fuentealba**, (sitting) Technical Adviser and Organizer, **Mauricio Contreras**, Vice President **Paola Lepileo**, Organizer **Pablo Krause**, Treasurer **Bernardo Carrillo**, and Secretary **Tomás Guajardo**.

Call for Grant Applications

The IEEE Foundation accepts grant applications for new and innovative projects three times per year. Grant applications can be submitted using a simple-to-use online form, which can be accessed at ieeefoundation.org.

2011 Grant Application Deadlines
3 Jan 2011 22 Apr 2011 12 Sep 2011

The IEEE Foundation considers projects that:

- Use technology for humanitarian causes
- Improve math, science and technology education from pre-college through continuing education

- Introduce pre-college students to engineering and science
- Support professional development and conference participation for university students
- Preserve and promote the history of IEEE associated technologies
- Recognize major contributions to IEEE associated technologies.

Before submitting an application, please review the IEEE Foundation's grant guidelines, which can be found at www.ieeefoundation.org. Direct your questions to foundation-office@ieee.org.

Donors Recognized in Elite Groups

To express gratitude and appreciation, the IEEE Foundation has always distinguished individuals, corporations and friends who contribute \$100 or more during the calendar year. These donors are listed in our annual Honor Roll of Donors in member categories based on the amount of the annual donation. The **Advocates Association** has four member categories to recognize gifts of US\$100-\$999. The **Leadership Association** has seven member categories to recognize gifts of US\$1000-\$100,000 and up.

To specifically recognize those donors who have given consistently throughout their career and lifetime, we have created the cumulative giving donor recognition group, The **IEEE Heritage Circle**. To acknowledge those who plan ahead and decided to leave a legacy gift to the IEEE Foundation in their Will, we have created the **IEEE Goldsmith Legacy League**.

IEEE Goldsmith Legacy League Members are *Forever Generous*

By Karen Galuchie, IEEE Development Office

About the IEEE Goldsmith Legacy League

Named for Alfred N. and Gertrude Goldsmith in recognition of their extraordinary commitment to the IEEE, the *IEEE Goldsmith Legacy League* is the planned giving donor recognition group of IEEE and IEEE Foundation. Members of the *IEEE Goldsmith Legacy League* are Forever Generous. They are powering the discoveries of tomorrow by leaving planned gifts to benefit future generations of engineers.

Planned gifts come in all shapes and sizes. Most *League* members include a bequest to the IEEE Foundation in their will or trust document. While some name the IEEE Foundation as beneficiary of a life insurance policy, retirement plan or charitable remainder trust. Regardless of the amount or type, all planned gifts are critical to sustaining and expanding the IEEE Foundation's support IEEE's ability to advance technology for humanity.

League Members attend 2010 IEEE Honors Ceremony

In recognition of their special commitment, the IEEE Foundation invites the members of the *IEEE Goldsmith Legacy League* to attend the IEEE Honors Ceremony as their special guests. Four *League* members were able to join us for the Ceremony held on Saturday, 26 June 2010 in Montreal, Canada.



From left: **Russell and Carole Lefevre, Karen Kaufman, and Lyle and Dorothy Feisel**



From left: **Lillian and Arthur Winston, James Thomas Cain and Karen Galuchie**



League Members receive their Certificate and Keepsake Coin

When individuals share the good news that they have included IEEE or the IEEE Foundation, they are added to the League's roster and presented with binder to display their certificate of appreciation and a keepsake coin. Both the certificate and coin were recently finalized. Here different members receiving their recognitions.



Theodore Saad admiring his IEEE Goldsmith Legacy League certificate



President, IEEE Foundation **Richard J. Gowen** (right) presents (from left) **Karen Kaufman**, **Arthur Winston**, and **Lyle Feisel** with IEEE Goldsmith Legacy League certificate and keepsake coin during the June 2010 IEEE Foundation Board Meeting.



President, IEEE Foundation **Richard J. Gowen** (left) and his wife, **Nancy**, receive their recognition as Honored Philanthropists when IEEE Executive Director **E. James (Jim) Prendergast** presented them with their IEEE Heritage Circle certificate and coin binder at a recent IEEE Foundation Board meeting.

Honored Philanthropists join the IEEE Heritage Circle

The philanthropic spirit among IEEE Foundation donors reflects a strong desire and willingness to support the IEEE throughout their career and lifetime. For these donors who give consistently and generously we have created the **IEEE Heritage Circle**.

All long-standing supporters whose donations to IEEE Foundation total US\$10,000 since 1 January 1995 are recognized as *Honored Philanthropists* and members of the **IEEE Heritage Circle**.

IEEE Heritage Circle contains five named giving levels

Nikola Tesla	\$10,000 - \$49,999
Alexander Graham Bell	\$50,000 - \$99,999
Thomas Alva Edison	\$100,000 - \$249,999
James Clerk Maxwell	\$250,000 - \$499,999
Michael Faraday	\$500,000+



IEEE Heritage Circle recognition is based on individual donor giving-level and members receive:

- Keepsake Coin and Certificate of Membership in a custom presentation binder
- Recognition in the annual Honor Roll of Donors and on the "Wall of Honor"
- IEEE Foundation Focus newsletter
- Additional recognition, with donor approval may be provided through an IEEE event scheduled in the donor's vicinity

Contact the IEEE Development Office to learn more about the **IEEE Heritage Circle**. The IEEE Development Office can provide confidential information regarding the status of your cumulative giving and alert you to when milestones are reached in the hierarchy of the **IEEE Heritage Circle**.

Smarter Fire Detection System Earns Teen Scholarship

James Popper, recipient of this year's IEEE Presidents' Scholarship invented a smarter fire alarm for kitchens, where conventional smoke detectors tend to go off when there is smoke but no fire. He received the recognition for CookerSmart at the Intel International Science and Engineering Fair (ISEF), held in May in San Jose, Calif. US. The 18-year-old Popper is a senior at Marlborough College in Marlborough, England.

Administered by IEEE Educational Activities, the US\$10 000 scholarship from the IEEE Foundation is awarded annually to a high school student who creates a project that demonstrates understanding of an IEEE area of interest. The amount is payable over four years of undergraduate study, and the scholarship includes complimentary IEEE student and society memberships during the four years. Popper also received a framed certificate and an engraved plaque.

RESPONDING TO A NEED

Popper set out to create CookerSmart after an elderly family friend survived a devastating kitchen fire. "I wanted to devise a fire-detection system for the kitchen that would help the elderly and those with disabilities, who overwhelmingly are the groups most at risk from this recurrent danger," he said.

Conventional smoke detectors do not provide adequate protection in kitchens, because they're susceptible to what Popper calls "nuisance tripping"—they're set off by cooking fumes, high heat, steam, and other non-fire-related sources. The CookerSmart reacts not to smoke but to an actual fire, first by identifying the infrared flicker of a flame, then analyzing it and responding to the flicker's specific frequency bands. The device

has both a visual and varying tone alarm, making it more likely to be recognized and heeded. By relying on its innovative IR-detection method, the system is not accidentally triggered greatly reducing false alarms.

To build his detector, Popper first needed to learn about complex analog and digital circuitry, as well as the C programming language. He incorporated a combination of operational amplifier signal modification stages and a microcontroller unit, and he designed the accompanying software to identify the presence of fire. It took him a year to develop, test, and build a prototype. In 30 trials, the prototype was triggered on every occasion, responding to real fire in less than five seconds.

Popper says he intends to take a year off from his studies to concentrate on marketing and selling CookerSmart and then return to school to study electrical engineering.

Help ensure the IEEE Presidents' Scholarship continues to support the next generation of engineers – donate to the **IEEE Presidents' Scholarship Fund** at <http://www.ieee.org/donate>.

The IEEE Presidents' Scholarship Fund is one of the 130+ funds administered by the IEEE Foundation. It supports the annual awarding of the IEEE Presidents' Scholarship to a deserving student for an outstanding project in a field of interest of the IEEE. It is presented during the annual Intel International Science and Engineering Fair.



IEEE President Elect **Moshe Kam** congratulates winner of the IEEE Presidents' Scholarship **James Popper**.

Senese Memorial Scholarship Awarded

Steven Geuther is the fourth annual recipient of the **IEEE Daniel J. Senese Memorial Scholarship**, made possible by donations from IEEE staff and volunteers. Each year IEEE awards this scholarship to a senior graduating from Piscataway High School who plans to major in a field of interest of IEEE. The \$1,000 scholarship was presented to Geuther during the school's Senior Awards Assembly on Wednesday, 2 June. Geuther plans to study mechanical engineering at Lehigh University.

The Daniel J. Senese Memorial Scholarship was established as a tribute to former IEEE Executive Director Daniel J. Senese in honor of his interest in encouraging the study of science and technology. Staff members are invited to make a tax-deductible donation to the Scholarship Fund. Checks should be made payable to the IEEE Foundation - IEEE Daniel J Senese Memorial Scholarship Fund and sent to the IEEE Development Office. Donations may also be made by credit card online.

IEEE-Eta Kappa Nu Fund Established

The IEEE Foundation established and manages the IEEE-Eta Kappa Nu Restricted Fund that will provide resources to IEEE-Eta Kappa Nu (HKN) in support of its core purpose: to recognize students who have achieved excellence in the IEEE technical fields of interest.

HKN, formerly a non-profit, public-service organization comprised of nearly 200 university chapters, is now IEEE's official honor society and an organizational unit of IEEE.

You can donate to the IEEE-HKN Restricted Fund through your 2011 dues renewal or visit www.ieee.org/donate.

Katronetsky's Dedicated Service Recognized

The Board of Directors of the IEEE Foundation, Inc. expresses its sincere appreciation to **Fern E. Katronetsky** for 17 years of dedicated service and unwavering leadership. Her relationship with the IEEE Foundation commenced in 1993 in the role of Recording Secretary, followed by a promotion in 1999 to Director, Awards, IEEE Foundation, & Corporate Administration, and in 2004 a further promotion to the role of Executive Director, IEEE Foundation & Awards. During this time, she was instrumental in the creation of legal contracts to govern IEEE Foundation business activities with IEEE and its operating units, and in the development of the IEEE Foundation Policy & Procedures and Operations manuals. She has continuously demonstrated an unparalleled commitment to advancing the mission of the IEEE Foundation, her breadth of knowledge is beyond compare, and her devoted service inspires all those who work with her. Fern has moved on from the IEEE Foundation to offer her expertise to the IEEE Educational Activities Department as Staff Director and Educational Activities Board Administrator. We wish her the best.



IEEE History Center Celebrates 30th Anniversary

On 11 Aug. 1980, at IEEE headquarters in New York, the Center for the History of Electrical Engineering was established with a single employee – Robert Friedel, director and historian of technology. Formed in preparation for IEEE's 1984 centennial milestone, the center focused on gathering biographical information on major contributors to electrical engineering and computing, and locating and documenting engineering papers.

The center's role expanded to include public outreach, pre-college education, and scholarly research into the history of technology, as well as the organizational history of IEEE. Its staff grew accordingly.

In 1990, the center relocated to the campus of Rutgers, the State University of New Jersey, in New Brunswick, NJ and its name was changed the IEEE History Center.

Today, the History Center has six full-time employees, six part-time Rutgers graduate-student researchers and a number of graduate and undergraduate interns. It is part of the IEEE Corporate Activities department and supported by donations to the **IEEE History Center Fund**.

The mission of the IEEE History Center is to preserve, research and promote the heritage of IEEE and technology with such programs as the IEEE Milestones and oral histories. Through the IEEE Global History Network www.ieeeahn.org, the History Center empowers IEEE members to contribute their experiences to the premier global Web site for the history of information and electrical technologies and sciences.



IEEE Foundation President **Richard J. Gowen** and his wife, **Nancy** donated US\$20,000 to the Humanitarian Technology Fund (HTF) during a recent IEEE Foundation Board of Director's Meeting. Staff Director, Global Business Development, **Peter Sobel** accepted the check and thanked the Gowen's for their support of the fund established during Gowen's presidency. The HTF of the IEEE Foundation supports initiatives about which the Gowen's are very passionate. The HTF awards grants to support the development and application of innovative uses of technology that improve the quality of human life, and to support the IEEE's activities in working to benefit humanity. You can contribute the HTF during at 2011 dues renewal or visit www.ieee.org/donate.

History Center Unveils STARS

The IEEE History Center launched a new online collection of invited peer-reviewed articles that explain the history of major developments in electrical and computer science and technology. Known as the Significant Technological Achievement Recognition Selections, or STARS, the articles feature developments at least 10 years old.

The articles are located in the STARS Portal, of the Global History Network(GHN) at www.ieeeahn.org. The GHN is a wiki-based site with articles covering the history of technology, firsthand experiences of IEEE members and others involved with the development of technology, descriptions of the historic breakthroughs known as IEEE Milestones, oral histories of engineers and scientists, as well as the new STARS articles.

The first three STARS articles posted deal with the development of underwater cables, motion pictures, and punched-card equipment. Anyone can suggest a technology for STARS recognition or author a STARS article provided they have a GHN account.



We Want Your News

Have you received a grant, scholarship or award from IEEE Foundation? Has the Foundation helped you fund a special project? Are you a supporter of the Foundation and want to share your reasons why? Please let us know. We welcome your submission <<mailto:k.m.kaufman@ieee.org>> of articles for this newsletter. All submissions may be edited for style and length.

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IEEE Foundation Staff Contacts

Peter Sobel, Staff Director,
Global Business Development +1 732 562 5538
Michael Deering, Development Director +1 732 562 3915
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