

November 2008 - ISSUE 17

The President's Perspective

I trust you will enjoy the new look of the *IEEE Foundation Focus*. Notice that the graphic elements used in the new design of this issue are the IEEE Founders Medal and the IEEE Medal of Honor. Both are prestigious awards sponsored by the IEEE Foundation presented to deserving honorees at the IEEE Annual Honors Ceremonies. This year's Honors Ceremony, *Innovating to Meet the World's Challenges*, was held during Sections Congress. See more about these events on pages 2 and 3. This issue also features articles about the humanitarian efforts supported by the IEEE Foundation.

Cultivating the relationships and resources that assist IEEE in fostering technological innovation and excellence for the benefit of humanity—this is the role of the IEEE Foundation. Recently, we have linked IEEE with foundations and corporations that are interested in using technology to improve life and positively impact the world we live in. The response by many members to this humanitarian challenge, particularly students and our GOLD members (Graduates of the Last Decade), is exceptional and extends the traditional outreach activities in our grants, awards, and history programs. IEEE and Engineers without Borders USA (EWB-USA) co-organized the 2008 Humanitarian Workshop in Boston. See the related article on page 4. There is a growing need for additional funding to support the enthusiastic interest in applying the technologies of the many IEEE fields of interest to make a difference in the future of people across the world.

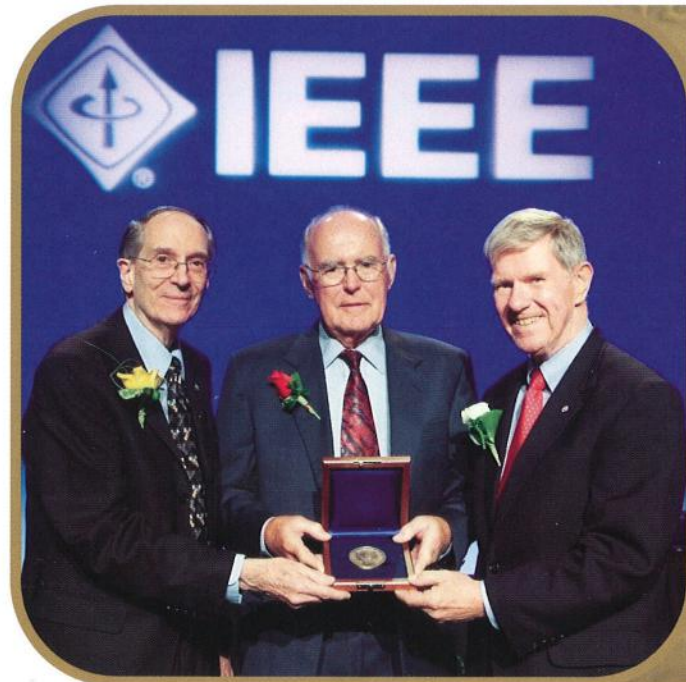
The IEEE Foundation General Fund supports a cross-section of programs that foster technological innovation and excellence for the benefit of humanity. More than US \$270,000 was awarded to 13 new project grants by the IEEE Foundation thus far in 2008. These grants support initiatives like The Solar Bug Tug project highlighted on page 5, which prepares students to become engineers and scientists. The grants also help develop museum exhibits featuring science and technology, help students in Turkey prepare a program for student members around the world to better utilize internship opportunities, and explore ways to increase public support for alternate sources of energy. To see the full list of grants awarded in 2008, please visit the "Grants Awarded in 2008" page on the IEEE Foundation Web site, www.ieeefoundation.org. The generous support made possible through donations from IEEE members, corporations and others enabled us to fund these and other deserving programs.

I hope you find that the IEEE Foundation supports what you find important. You can help us continue to support worthy projects in the upcoming years with a donation to the General Fund of the IEEE Foundation.

Thanking you in advance,



Richard J. Gowen
2008 President, IEEE Foundation



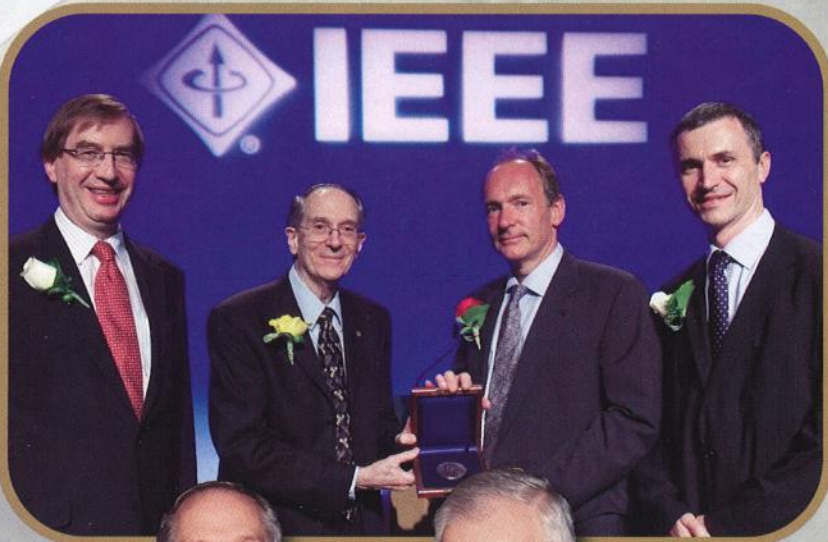
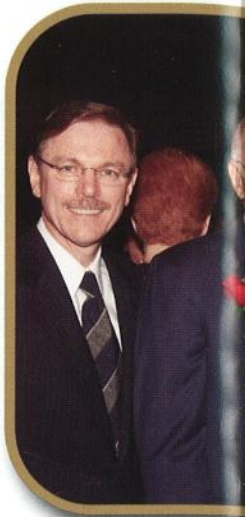
IEEE President **Lewis M. Terman** (left) and IEEE Foundation President **Richard J. Gowen** (right) proudly present **Gordon E. Moore** with the 2008 IEEE Medal of Honor, sponsored by the IEEE Foundation. Moore received the Medal for pioneering technical roles in integrated-circuit processing, and leadership in the development of MOS memory, the microprocessor computer, and the semiconductor industry.



2008 IEEE Honors Ceremony – Innovating to

Saturday evening's IEEE Honors Ceremony was the best-attended Honors Ceremony in history. IEEE President Lewis M. Terman presented 22 awards, including the IEEE Medal of Honor, to Gordon E. Moore, co-founder and chairman of the board emeritus, of Intel Corporation. For more information about the recipients and the work for which they were awarded honors, please visit www.ieee.org/web/membership/IEEETv/about.html where you can watch the entire ceremony.

The IEEE Foundation and IEEE's Awards and Corporate Administration group hosted more than 1,300 guests. Approximately 150 staff members supported the event in some capacity, both on site and during preparation at the Operations Center in New Jersey.



Lewis M. Terman (second from left) presents **Timothy Berners-Lee** with the James Clerk Maxwell Award for conceiving and further developing the World Wide Web. They are flanked by **William Duncan** (left) from the Royal Society of Edinburgh and **Jean-Louis Cois** (right) from award sponsor Wolfson Microelectronics, plc.

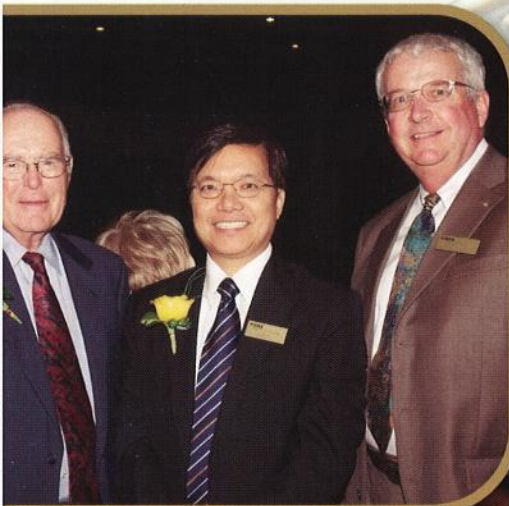


Bobbie Terman, Lewis M. Terman, and John Vig, IEEE President-elect (standing left to right) were present as **Gordon E. Moore** (seated center) graciously greeted Honors Ceremony dinner guests and provided autographs to fans who waited in a receiving line to meet him for more than an hour.



James T. (Tom) Cain, Professor of Electrical and Computer Penn, USA (left) received the IEEE Richard M. Emberson Award for his contributions to IEEE Institute's publications and for the advancement of electric engineering curricula. This IEEE Life Fellow and former IEEE President is flanked by **Matthew L. Gowen**, IEEE Foundation President (center) and **Matthew L.**

Meet the World's Challenges



Pictured here from the left are **Ian A. Young**, Senior Fellow, Intel Corp. and IEEE Fellow, **Gordon E. Moore**, IEEE Life Fellow, **Paul Y.S. Cheung**, IEEE Awards Board Chair, and **David A. Hodges**, IEEE Awards Board Vice-chair taking a moment to pose for a picture after the Honors Ceremony.



The front row of the Honors Ceremony was filled with distinguished guests—the awards recipients. Some of the recipients, from the left, are: **Yaakov Bar-Shalom**, who received the IEEE Dennis J. Picard Medal for Radar Technologies and Applications sponsored by Raytheon Company; **Chrysostomos L. (Max) Nikias**, who received the IEEE Simon Ramo Medal sponsored by Northrop Grumman Corporation; **Leslie Lamport**, who received the IEEE John Von Neumann Medal sponsored by IBM Corporation; **Maurice Papo**, who received the IEEE Haraden Pratt Award, sponsored by the IEEE Foundation; and **James T. (Tom) Cain**, who received the IEEE Richard M. Emberson Award sponsored by the IEEE Technical Activities Board.



Engineering, University of Pittsburgh, [unclear] for his contribution to the [unclear] and computer engineering in [unclear] [unclear] poses with **Richard J. [unclear]**, IEEE Staff Director.

Foundation Builds Support at Sections Congress 2008

The IEEE Member and Geographic Activities (MGA) Board partnered with Region 7 and the Quebec Section to host Sections Congress 2008 in Quebec City, Quebec, Canada, from 19-22 September. The best attended Sections Congress ever boasted 1,072 attendees from 89 countries representing 293 Sections.

Held every three years, IEEE Sections Congress unites the IEEE's grass roots volunteer leaders for training, networking, strategic planning and developing solutions to advance the future of the global IEEE. The Congress provides a forum for the Section Chairs to speak as the collective voice of IEEE and to share and discuss views for change. On-site activities included program management, registration, exhibits and speakers. The IEEE Foundation was among the 40 exhibitors at the event.

Thanks to the generosity of our donors who understand the importance of unrestricted giving, the IEEE Foundation General Fund supported IEEE Sections Congress 2008 with an US \$18,000 grant to the IEEE Member and Geographic Activities Board. This grant supports the "Core Training" sessions for the event including the production and distribution of the core training materials to the delegates.



Conference attendee **Albert G. Engelhardt** (left) is a Regional Life Member Coordinator for the IEEE Life Members Committee, Section Delegate for Region 6, Los Alamos/Northern New Mexico. He stopped by the IEEE Foundation booth at Sections Congress 2008 to discuss setting up a new charitable fund for his Section and creating an IEEE History Center Milestone. **Michael Deering** (center), Major Gifts Officer for the IEEE Foundation and **Carrie Loh**, Senior Administrator, IEEE Annual Election gave Dr. Engelhardt the information he needed.

Humanitarian Workshop Encourages Engineering for Good

By Uri Moszkowicz, Member IEEE MGA and GOLD Committee

IEEE and Engineers without Borders USA (EWB-USA) co-sponsored the 2008 Humanitarian Workshop at Boston University in Boston, MA on 18 October 2008. The objective of the workshop entitled "Understanding humanitarian works through the lens of engineering" was met by creating awareness among engineering students and young professionals and providing examples of how they can use their skills and knowledge to aid humanitarian work. At the same time, engineers were encouraged to become personally involved in humanitarian projects.

The full-day program included keynote speeches, a hands-on session, and booth visits. Speakers were selected from the UN Foundation, MIT, and LinkNet Zambia. Participants learned about all the planning stages of a humanitarian project during the hands-on session. The workshop attracted 80 mostly local attendees, primarily students and young professionals, but some travelled long distances to attend. After the workshop, the attendees were invited to apply for one of 10 IEEE GOLD Humanitarian Fellowships.

Within IEEE, the workshop was organized by the Graduates of the Last Decade (GOLD), Region 1, and the Boston Section. The IEEE Foundation co-sponsored the workshop with Boston University and the Boston Section. For more information on the workshop, visit the Region 1 GOLD website at www.ewh.ieee.org/reg/1/gold.



Taking a quick break from their conference responsibilities, some attendees posed for a picture. From the left are **Greg Walson**, IEEE Boston GOLD member who was recording for IEEE TV, **Pam Chuang**, IEEE Boston GOLD member, **Pei-yeh Tsai**, and **Rob Vice**, the co-chair of the event.

Correction to the 2007 Honor Roll of Donors

Ronald R. Mohler was incorrectly listed as Robert R. Mohler.

2008 IEEE Presidents' Scholarship Awarded

Harikrishna Rallapalli, a 16-year-old high school sophomore from Amador Valley High School in Pleasanton, CA, USA, won the 2008 IEEE Presidents' Scholarship. Rallapalli was selected from more than 1,550 students from 51 countries at the 2008 Intel International Science and Engineering Fair (ISEF) held in Atlanta, GA from 11 to 17 May. Rallapalli was inspired to create his project, entitled "Low-cost Total Internal Reflection Fluorescence Microscopy," after he asked a teacher for a demo of Brownian motion and she informed him that they could not afford the US \$30,000 cost for a demo. He worked to design an inexpensive alternative microscope for classrooms. In recognition of his project, Rallapalli received a US \$10,000 scholarship payable over four years, which he will use to attend the college of his choice and major in an IEEE-related field. Rallapalli hopes to attend Stanford University as a biophysics or pre-med student.



2008 IEEE Presidents' Scholarship winner **Harikrishna Rallapalli** (left), now a junior in high school, poses for a picture after being congratulated by **Dr. Evangelia (Litsa) Micheli-Tzanakou**, Vice President of Educational Activities. **Dr. Micheli-Tzanakou** is a biomedical engineer and professor at Rutgers University.

The IEEE Presidents' Scholarship, administered by the IEEE Educational Activities Board, recognizes a deserving student for an outstanding project in a field of interest of the IEEE presented during the annual Intel International Science and Engineering Fair. To ensure this important scholarship will continue to be presented, the IEEE Foundation General Fund will match dollar-for-dollar all donations, up to a total of US \$100,000, made to the IEEE Presidents' Scholarship Fund through 2009. To date over US \$60,000 in cash and pledges have been received. By answering the challenge and making a gift to the IEEE Presidents' Scholarship Fund, donors are helping to ensure that future generations of engineers have the resources they need to pursue their academic goals and engineering dreams. You can make a gift online at www.ieeefoundation.org.

Students Make a Splash Using Alternative Energy

By Sarah Terry, Manager, Communications and Marketing Fayetteville Public Library

In June, the Fayetteville Public Library hosted a weeklong camp to teach students about alternative energy by building solar-powered boats. The camp was funded through a grant from the IEEE Foundation. The Solar Bug Tug program, as it is called, included 37 students in grades six through nine.

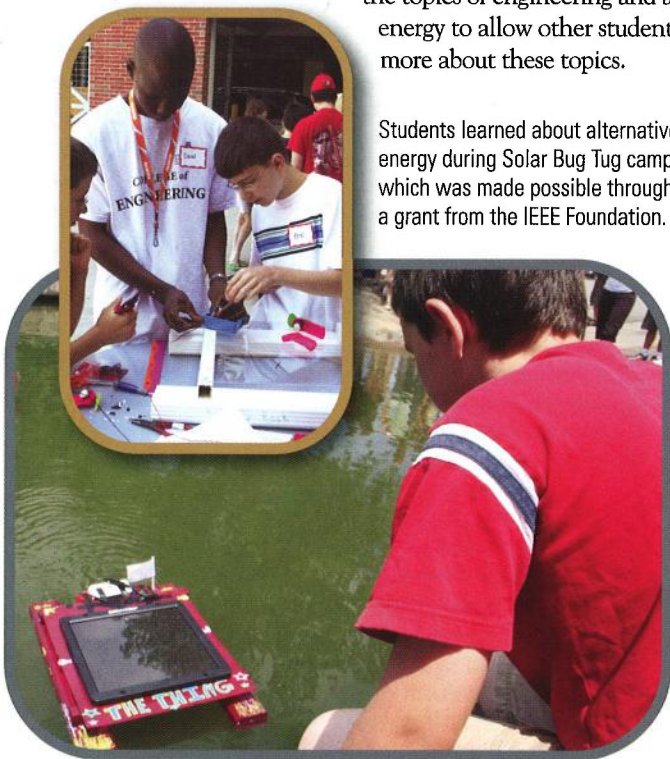
The goal of the camp was to encourage an interest in and knowledge of solar power. The camp also hoped to encourage an early interest in the science and engineering fields as a career choice for students. The camp, part of the library's annual Summer Reading Club program, divided participants into seven teams to create their own solar-powered boats.

The University of Arkansas' College of Engineering also participated in the hands-on activity. Engineering students served as guides for each of the teams, and an engineering professor and his wife helped direct the project. Students learned the basics of alternative energy use and how to assemble the boat so it would float in the water while taking advantage of the maximum sunlight. The boats raced during the annual Solar Splash competition in Fayetteville, which brings college teams from throughout the country to race solar-powered boats. Six of the seven boats created by the students successfully completed the race.

In a survey conducted of the participants at the close of the week, all said they had learned something they did not know about solar energy. Through the partnership with IEEE, the library also added 88 items to its collection on

the topics of engineering and alternative energy to allow other students to learn more about these topics.

Students learned about alternative energy during Solar Bug Tug camp, which was made possible through a grant from the IEEE Foundation.



A student launches the solar-powered boat named "The Thing" during the Solar Splash competition.

Toyota Recognizes Environmental and Safety Technologies

The IEEE Foundation is pleased to announce a new award sponsored by Toyota Motor Corporation. The IEEE Medal for Environmental and Safety Technologies will recognize outstanding accomplishments in the application of technology in IEEE fields of interest that improve the environment and/or public safety.

Toyota donated US \$300,000 to support the awarding of the IEEE Medal to an individual recipient, or a team of recipients up to three in number, each year for 10 years. The first award will be presented in 2010.

We are honored to sponsor an award established by IEEE, the world's largest professional society in electrical and electronic engineering. We hope that the establishment of the award will promote the development of environmental and safety technologies worldwide.

—Toyota's public affairs spokesperson

Criteria considered for the award include: public benefits of the contribution; degree of improvement in important performance metrics; innovative design; development or application engineering; and favorable influence of the contribution on technical professions. The award is relevant to a wide variety of disciplines including power electronics, intelligent transportation systems, wireless communications, sensor networks control, control and automation, computing, and signal processing.

Recipients of the IEEE Medal for Environmental and Safety Technologies will receive a gold medal, a bronze replica, a certificate, and an honorarium. In the event that a team up to three in number is selected, the honorarium will be equally divided.

Under the leadership of honorary chairman Dr. Shoichiro Toyoda, Toyota Motor Corporation developed the world's first mass-produced hybrid automobile, the Toyota Prius. After 10 years of continued enhancements leading to increased production and sales, Toyota was awarded the 2007 IEEE Corporate Innovation Recognition "for the development and promotion of a hybrid combustion-electric power train for automobiles that significantly improves fuel economy and reduces emissions without sacrificing vehicle dynamic performance."

Toyota has focused its research and development efforts on automotive environmental and safety technology, which is a core value of the corporation. This philosophy prompted Toyota to work with IEEE to create the IEEE Medal for Environmental and Safety Technologies. Toyota Motor Corporation acknowledges the efforts of Prof. Fumio Harashima, Prof. Hiroyuki Sakaki, and Prof. Toshio Fukuda and thanks them for their cooperation and advice toward the establishment of this award.

To learn more about this and other IEEE Awards or to nominate someone to receive this Medal visit www.ieee.org/awards. Nominations for the 2010 Medal for Environmental and Safety Technologies are due by 1 July 2009.

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| Fern E. Katronetsky, Executive Director | +1 732 562 3932 |
| Peter Sobel, Director, Corporate & Foundation Partnerships | +1 732 562 5538 |
| Michael Deering, Major Gifts Officer | +1 732 562 3915 |
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IEEE Foundation, 445 Hoes Lane, Piscataway, NJ 08854-4141 USA
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