IEEE FOUNDATION Focus
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The President's Perspective

It is an honor to serve the members of the IEEE as the new President of the IEEE Foundation. It was a special privilege to serve as the Centennial President of the IEEE and I remain dedicated to the recognition of the traditions of excellence of the IEEE. We continue to build on the shoulders of the many giants who developed the technologies and services that enable the improvement of the quality of life for people throughout the world. The IEEE Foundation is uniquely positioned to continue to develop the additional resources to broaden the services provided by the many organizational units that are the IEEE.

My participation in the IEEE Foundation as a member of the Board for the past three years and the Vice-President, Development for the past two, have helped me better understand the exceptional capabilities of the IEEE Foundation. During that time, I served under the able leadership of Emerson Pugh. On behalf of the IEEE Foundation Board, I thank Emerson for all his hard work and dedication. During his five years as President, he generously gave his time, wealth and wisdom to create the IEEE Foundation of today. I look forward to building upon his efforts, and those of previous IEEE Foundation Boards, as we move into the future.

Richard (Dick) Gowen (right), 2005 President, IEEE Foundation, and Emerson Pugh (left), Past President, IEEE Foundation, smile for the camera during the 2004 IEEE Honors Ceremony.

As one of my first official activities, I am proud to announce that the IEEE Foundation is now using the Internet to conduct business. Thanks to the hard work of several of our Board Members, Bob Alden, Pete Lewis, and Rolf Remshardt, as well as Glenys Gotthardt, the IEEE Foundation Senior Administrator, we have unveiled web-based grant application and project reporting systems. In addition to improving the services we presently support, these two on-line systems will provide the IEEE Foundation with a web-based archive of documents so we can more efficiently manage the use of Foundation resources for the IEEE.

"I take this opportunity to express my gratitude to the many who provide support through the IEEE Foundation."

On behalf of the many people throughout the world who benefit from the many activities of the IEEE, I take this opportunity to express my gratitude to the many who provide support through the IEEE Foundation. It is because of their monetary investment in our program, that we are able to carry out the mission of the IEEE Foundation to further the scientific and educational goals of the IEEE. These individuals, organizations, and foundations are the driving force behind our success.

I look forward to learning of your vision for the IEEE Foundation and encourage you to call me or send an email. Please contact me or any of the members of the IEEE Development Office, at +1 732.562.3915 or send an email to supportieee@ieee.org.

The members of the IEEE Foundation Board of Directors join me and the Foundation Staff in thanking you for your continued support of the IEEE through the IEEE Foundation. We share our best wishes for a joyous new year.

Richard J. Gowen

Richard J. Gowen
2005 President
IEEE Foundation

Engineering Students Exhibition – 2004

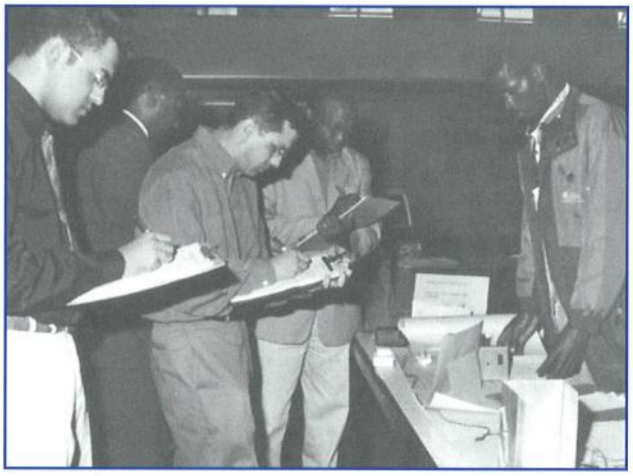
By: **Kevit Desai**, IEEE Member

On 16 October 2004, the IEEE Kenya Section hosted the **Engineering Students Exhibition – 2004,** which was funded in part by a grant from the IEEE Foundation. This all-day event, held at the Sarit Centre in Nairobi, Kenya, Africa, was open to students taking electrical engineering or computer science courses. Participants in the event were instructed to show ingenuity in developing their projects. They were required to prepare a project summary, create a presentation using appropriate aids and be able to demonstrate how their project functioned.

Thirty-eight entries were received for the competition from students representing schools from Kenya and South Africa. The projects were broken down into two categories:
1) Electronic Engineering and
2) Information Communication Technology.

Mark Pikker from Cape Technikon University, South Africa won in the Electronic Engineering category for his project entitled "Automated Solar Tracking System." Hezbon Ongira from Moi University, Kenya won in the Information Communications Technology category for his project entitled "Hotel Management Website." Each winner received a trophy and other prizes donated by industrial companies in Kenya.

The judges evaluate one of the projects during the competition.



The judges watch a student as he demonstrates his project.

Kevit Desai, Exhibition organizer (middle) and Prof. Gohard Hancke, Guest of Honor (right) visit with a student during the Exhibition.

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Scientific American Picks IEEE Virtual Museum as a Top Sci/Tech Web Site –

Every year the editors at *Scientific American* pick the top science and technology sites on the web to receive its ***Science & Technology Web Awards***. This year, the IEEE's very own IEEE Virtual Museum (VM) was among the 50 sites selected. They describe the VM as "a beautifully designed Web site featuring a cornucopia of exhibits encompassing topics as wide-ranging as microelectronics, women and technology, and microwaves."

This is just the latest in a long line of accolades for the IEEE Virtual Museum, a project funded in part by the IEEE Foundation. Take a moment to visit the IEEE Virtual Museum at www.ieee.org/museum and learn first hand just how special it is.

Society at Large — The Third Beneficiary of Mentoring

By **Walter E. Myers, PE** — IEEE Life Senior Member

Three segments of society realize the synergistic benefits from mentoring. When looking at each individually, it is easy to see how the benefit extends to the other two.

The first beneficiary of mentoring is the apprentice: The most direct and best recognized benefit of mentoring accrues to the individual students who gain an early insight to a field of interest. Whether the experience whets their appetite for the field or cools their interest, it serves them well in the efficient use of their time and resources in planning and realizing their future careers.

The second beneficiaries of mentoring are the mentors and their employers: Equally important benefits accrue to the mentor and their employer. Mentors have the satisfaction of helping a student succeed. More practically, mentoring provides an opportunity to refresh the mentor's understanding of the basic principles of their discipline to effectively teach them to an apprentice. Younger mentors also have an opportunity to begin development and application of supervisory skills.

Employers who reach into the pipeline to help develop the future technology workforce put themselves at the front of the line for recruiting these students when they enter the job market.

The third beneficiary of mentoring is society at large: The most difficult benefit to quantify is that which society realizes. However subjective, those of us who have benefited from or witnessed a mentoring experience cannot deny the broader benefits to society both tangible and intangible. Mentoring activities that reach the broader demographics of students help break the stereotype of who can be the scientists and engineers of the future. At the same time they draw in to the science professions the gender and cultural diversity necessary to address our future health, productivity, energy and environmental needs with a perspective more representative of the whole population.

> *"better prepared students make the best of the resources"*

More specifically, better prepared students make the best use of the resources of our academic institutions without so many changes in career directions and delays in matriculation.

Involving practicing professionals in the education pipe line provides an augmentation to the more formal curriculum of our pre-university education system for students interested in the sciences. The students realize the relevance of their formal curriculum when they experience the application to real tasks.

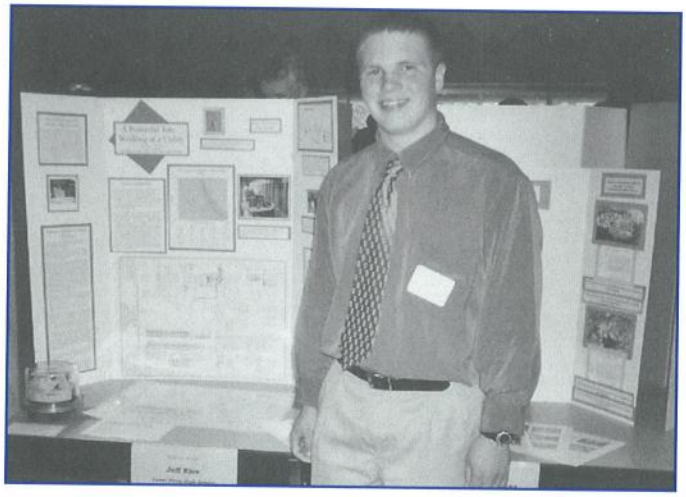
Enter the IEEE Foundation: A good example of IEEE support of mentoring is embodied in a just completed three-year grant to the ***Apprenticeships in Science and Engineering (ASE) Program*** at Portland State University. Over the three year grant, which just recently ended, the IEEE Foundation enabled the opportunity for seven high school students to work in the electrical/electronic engineering discipline field. To learn more about the ASE Program visit *www.aseprogram.org*.

2004 APPRENTICES FUNDED AND CO-FUNDED BY THE IEEE FOUNDATION

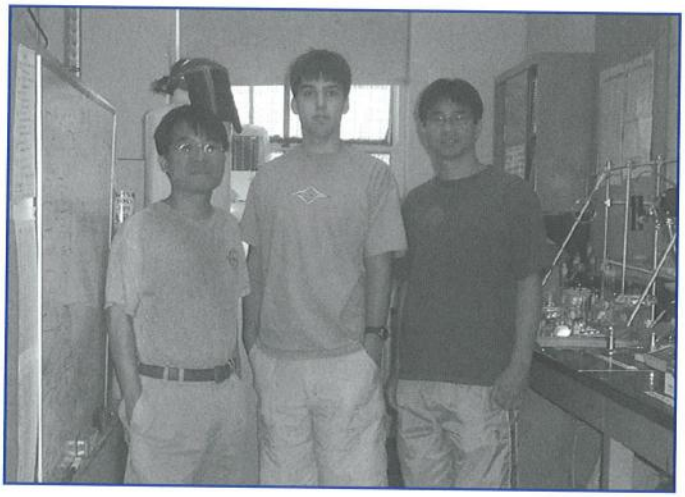
Jeff Rice
Sweet Home High School – Sweet Home, OR, USA.
(co-funded by Eugene Water & Electric Board)
Mentor: – Mr. Rod Price, PE, IEEE Member, Eugene Water & Electric Board

Jeff Rice worked with Mr. Rod Price at the Eugene Water and Electric Board (EWEB) on a project to standardize all aspects of substation design, particularly in regards to protective relaying. Throughout his apprenticeship, Jeff created approximately 25 of these standards, describing the protective relays, by modifying existing prints (schematics). He used the powerful "Small World" program to trace lines from feeder to fuse in order to find places where a larger fuse may go out before a smaller one during maximum fault current. Identifying and eventually correcting these situations will help to further minimize the extent of power outages. In another project, Jeff compared three different types of meters and showed how some meters slow down with age, causing EWEB to lose revenue over time. Jeff said of the apprenticeship, "The only person more excited than me about my apprenticeship was my dad (an electrical engineer)."

Christopher Breeden
Marist High School, Eugene, OR, USA.
Mentor: – Dr. Chih-hung Chang, IEEE Member, Oregon State University, Department of Chemical Engineering



Jeff Rice shows off his project poster board during the ASE Annual Symposium held on 21 August 2004.



Christopher Breeden (Center) gained valuable life skills by working with his mentor Dr. Chih-hung Chang (left) and Yu-jen Chang (right) in this laboratory at Oregon State University.