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Madison Section NEWSLETTER

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Challenges of Breast Imaging

Date/Time: Monday, March 15, 2004, 11:45 AM - 1:00 PM (Note Day of the Week!)
Panelists: Frederick Kelcz, Associate Professor of Radiology, University of Wisconsin Medical School
Location: Rocky Rococo's Pizza, 7952 Tree Lane (Madison Beltline Hwy. at Mineral Pt. Rd.), 608.829.1444
Menu: Pizza buffet, salad and soft drinks (cost $10.00, free for student members)
RSVP: by March 11th to Les Schroeder via email (l.schroeder@ieee.org) or call 608.260.1356

Non-member guests are always welcome!

The breast is one of the few organs for which a national program for screening for cancer has been proven effective. The breast is pliable and poses problems of consistent positioning which can plague correlation between different imaging modalities. Furthermore, there are no internal landmarks and there is frequent overlap in the appearance of benign and malignant breast conditions. This talk will review the technical aspects of current breast imaging using mammography, ultrasound and MRI, and criteria used by the radiologist to try to detect malignancy. The strengths and weaknesses of each method will be addressed and attention will be given to engineering related challenges. There will also be discussion of biopsy techniques using various methods of image guidance. Finally, we will discuss statistical parameters used to determine the accuracy of an imaging technique and its possible effect on saving lives through the early detection of malignancy.

Dr. Kelcz received his PhD in Physics at the University of Wisconsin and worked at Columbia-Presbyterian Hospital in New York City at the dawn of clinical MRI. He then received his MD from the University of Miami (PhD to MD program) and trained in Diagnostic Radiology at the University of Minnesota before coming back to Madison for training in an Abdominal Imaging Fellowship. Dr. Kelcz has served has Chief of the Abdominal Imaging Section, Interim Co-Chief of Mammography and continues to be Section Head of MRI in the Abdominal Imaging Division. His interest in applying MRI to breast imaging arose as a result of clinical assignment in mammography and he is responsible for starting the Breast MRI clinical and research program at the University of Wisconsin.

Coming in April: Joint Meeting with UW-Madison Student Branch

We are working with the IEEE UW-Madison Student Branch to line up a speaker for a joint April meeting. Updates will be posted on the IEEE Madison Section website and in next month's newsletter.

Happy St. Patrick's Day

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Broad Coalition of Energy Organizations Urges Restoration of Support for Research on Electric Transmission, Distribution to Improve Reliability, Prevent Future Blackouts

WASHINGTON (19 February 2004) - The Administration and Congress should restore $26 million in funding for Department of Energy (DOE) base programs into research and development on electricity transmission and distribution in FY 2004, according to a coalition of energy organizations, industry leaders and experts coordinated by IEEE-USA.

Further, in an open letter to Congress and the Administration, the group urged identifying grid-related research as a clear national priority, warranting research funding "commensurate with the importance of the task of revitalizing the nation's power grid."

Despite growing recognition of the need for grid investment in the wake of August 2003's major American and Canadian blackout, final FY 2004 congressional budgetary actions resulted in an effective 33 percent cut in funding for DOE base research program related to the electric grid.

"The August blackout was a clarion call to increase, not decrease, investment in infrastructure and R&D to modernize and upgrade the power grid," IEEE-USA President John Steadman said. "The nation's economy and national security depends on a reliable and affordable supply of electricity to consumers and industry."

"Electricity reliability is critical to the nation's economy, security and sustenance of modern life," the coalition noted. Given the difficulties associated with expanding the grid using conventional approaches, it urged increased funding for "new technologies and control strategies that can increase the capacity of existing pathways."

According to IEEE-USA, necessary investments to assure reliability and avoid future blackouts requires not only the construction of additional power lines and generating plants, but also innovation and the development of new technologies and control strategies to improve system reliability.

The letter to Congress and the Administration is available at http://www.ieeeusa.org/forum/issues/electric reliability/openletter.pdf.

The coalition includes the American Council for an Energy-Efficient Economy (www.aceee.org), the Coalition for the Commercial Application of Superconductors (http://www.ccasweb.org), the Consortium for Electric Reliability Technology Solutions? Industry Advisory Board (http://certs.lbl.gov/), the Electric Power Supply Association (www.epsa.org), the Electricity Storage Association (http://www.electricitystorage.org/), the Energy Storage Council (www.energystoragecouncil.org/), the National Electrical Manufacturers Association (http://www.nema.org), the Power Systems Engineering Research Center (http://www.pserc.wisc.edu), the U.S. Combined Heat and Power Association (www.nemw.org/uschpa/), industry leaders and experts.

Unemployment Rate for Electrical Engineers and Computer Scientists Reaches All-Time High in 2003

WASHINGTON (26 February 2004) - The unemployment rate for U.S. electrical and electronics engineers (EEs) averaged a record 6.2 percent in 2003, a two percent increase over the previous year, according to data compiled by the Department of Labor's Bureau of Labor Statistics (BLS). The previous high of 4.3 percent was set in 1994.

The 2003 rate is more than three times the level in 2001 (2.0 percent) and over four times the figure for 2000 (1.3). The average 2003 unemployment rate for all workers was 5.6 percent.

While recent EE unemployment has risen, the number of employed EEs has fallen. BLS reported 386,000 employed EEs in the second quarter last year vs. 349,000 in the fourth quarter, a decline of 37,000.

"The continuing high levels of engineering unemployment are not surprising considering the trend toward outsourcing of high-tech jobs overseas," IEEE-USA President John Steadman said. "This offshoring of high-paying jobs may look good on the bottom line of a quarterly financial report, but it's certainly not good for the skilled technical professional who can't find a job."

The 2003 jobless rate for computer scientists and systems analysts reached an all-time high of 5.2 percent, an increase of .2 percent over 2002 and four times as high as 1998's 1.3 percent. The rate also jumped .6 percent from the third to fourth quarters of 2003 to stand at 5.4 percent.

The quarterly EE jobless rate fell from 6.7 percent to 4.5 percent in the final quarter. The number of employed EEs, however, remained steady at 349,000. The discrepancy could be explained by discouraged EEs no longer counting as officially unemployed because they either found work in another field, or just stopped looking. BLS reports that the number of unemployed EEs dropped from 25,000 to 16,000 from the third to fourth quarters.

The quarterly unemployment rate for computer hardware engineers jumped dramatically from 6.9 to 9.0 percent, and averaged 7.0 for 2003. Computer software engineers saw their jobless rate fall slightly from 4.6 to 4.5 percent (5.2 for 2003); and computer programmers experienced a drop from 7.1 to 4.6 percent (6.4 for the year). The rate for aerospace engineers rose a percentage point to 5.0 percent, and finished at 4.8 percent for the year.

Comparisons to previous years are difficult because BLS revamped its occupational classifications and reporting conventions after 2002.

IEEE-USA is an organizational unit of The Institute of Electrical and Electronics Engineers, Inc., created in 1973 to advance the public good, while promoting the careers and public-policy interests of the more than 225,000 electrical, electronics, computer and software engineers who are U.S. members of the IEEE. The IEEE is the world's largest technical professional society. For more information, go to http://www.ieeeusa.org.

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Our members have professional interests in computers, power engineering, signal processing, communications, industry applications and a number of other technical fields.

For more information, contact John Hicks at (608) 233-4875 or jhicks@wisc.edu.

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