



ION Saint Louis

SPRING 2008



Section Well Represented at Regional Robotics Competition in Kansas City



Ann Lazarski - 2008 PES Chair and Recipient of the PES 2007 Outstanding Engineer Award. This issue features the Power Engineering Society. See page 4 for more information.

This year, three schools will be representing the Saint Louis Section at the Regional Robotics Competition in Kansas City on April 19.

Southern Illinois University at Carbondale (SIUC), St. Louis University and the Missouri University of Science and Technology will be fielding teams for the competition. As part of their willingness and passion for robots, the Section will contribute \$1000 towards each team to offset the costs of registration, travel and material. This contribution was presented at the Mary 27 Section Meeting.

At the meeting, David Gitz and Michael Welling of SIUC demonstrated its entry into the Competition. "It was clear that the students have put in a lot of hard work," commented one of the observers at the Section meeting.

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The IEEE Kansas City Section and the University of Missouri - Kansas City are proud to host the 2008 IEEE Region 5 Technical, Professional, and Student Conference. In the tradition of past IEEE Region 5 Conferences, this year's conference will comprise the following events:

- 17 April - Tutorials
- 18 -19* April (Fri-Sat) - Technical Conference
- 18 -19 April - Student Competitions and Leadership Training
- 19 April - Region 5 Committee Meetings

More information on the Regional Conference and Competition, go to this website <http://ewh.ieee.org/conf/basics2/index.htm>.

SUMMER SOCIAL NEWS

Mark your calendar for Saturday, September 6.

See page 3 for details.

Chair's Column

The section actively met several times and discussed via email to several issues. The highlights of the past three months are:

The *ION Saint Louis* is the official publication of the Saint Louis Section of IEEE. It is published approximately once per quarter by the Officers of the Section and distributed electronically via the Section Listserv and posted to the Section website.

Any member may submit IEEE-related information to appear in the publication to Bob Becnel at bob@becnel.com.

- ❖ Rotary Club Luncheon event honoring engineers that included IEEE was a success
- ❖ Sponsored student groups for regional IEEE robotic competition
- ❖ IEEE Summer social will be on Saturday, 06 September 2008 from Noon - 4:00pm at the Forest Park Boathouse. Mark your calendar. I would like to thank Heidi Anderson for effort in setting up this event.
- ❖ Encouraging chapters to stay active and financially supporting their meeting costs.
- ❖ The link for the section website is - <http://www.ewh.ieee.org/r5/stlouis>
- ❖ I like to thank again Bob Becnel for producing this newsletter in a timely and professional manner.

Respectfully,

Dr. Mallik,

2008 Section Chair

Section Website Updated

The Saint Louis Section has recently gone through a face-lift in terms of its website. The website url is <http://ewh.ieee.org/r5/stlouis>.

Moreover, the Section Officers can now be contacted through the functional alias at sec.stlouis@ieee.org. Please use the address for making calendar updates or website suggestions.



Spend a relaxing September afternoon at the Forest Park Boathouse as part of the IEEE Summer Social. Details on Page 3.

IEEE Summer Social 2008 is Planned

Date: Saturday, 06 September 2008

Time: Noon - 4:00pm

Location: Boathouse at Forest Park

This year's event will feature a hot food buffet, open bar, and paddleboat rides. Enjoy the zoo or museums in the morning and then bring the family to the Boathouse. See article on the Boathouse below.

Check your email this summer to make reservations. Please contact the Summer Social Coordinate, Heidi E Anderson at heidi@sandboxconcepts.com for more information.

Boathouse in Forest Park since 1876

This year's social is to be held at the Boathouse in Forest Park. Like most of the facilities in Forest Park, the Boathouse has as a historical significance to St. Louis. From the official website, <http://www.boathouseforestpark.com> the following is just a taste of what you are in for at this year's Summer Social.

Since the foundation of the park in 1876, boating has been a popular pastime. So much so that in the mid 1890s the lake at the Boathouse was extended to provide more room for boating.

A financial panic in 1893 gave the city another reason to expand the lake; providing work for St. Louis' unemployed. Beginning in January 1894, the Post-Dispatch conducted a campaign to raise money for the expansion. Six thousand men registered to work on this project. The lake is now called the Post-Dispatch Lake.

With the current restoration of Forest Park, Post-Dispatch Lake has been expanded once again to include new boating lagoons as well as an island devoted to wildlife conservation. Now boaters can travel more easily into the restored Grand Basin at the foot of Art Hill.

The master plan for the park called for a new, year-round boathouse facility. Designed by St. Louis architect Laurent Torno, the new Boathouse is reminiscent of Midwestern boathouse cottages in the early twentieth century.

IEEE Socials

Last month, Mr. Bob Lyons coordinated the first of the 2008 IEEE Socials at Helen Fitzgerald's in Sunset Hills. According to Lyons, "In summary of the first social, it was a great success! The members got to know one another beyond their professional backgrounds. We had to interview each other with questions regarding our leisure activities and where we were from. Approximately a quarter of the attendees had not been to an IEEE function in a while, so we are getting some members active! "

If interested in attending the next Social or suggestions for Mr. Lyons, please contact him at ieeesocials@yahoo.com.



Relaxing and spirited conversation at the first IEEE Social for 2008. Heidi E. Anderson (left) uses her opportunity to pitch the Summer Social to an

IEEE Power Engineering Society

The St. Louis Chapter of the Power Engineering Society has always been an active organization. Judging by its website at <http://ewh.ieee.org/soc/pes/saintlouis/index.html> one would draw the conclusion that Ameren is an excellent supporter of this Chapter. In fact, PES offer cookies, donuts or pretzels along with beverages at each meeting.

Chair, Ann Lazarski, further expanded, "We purchase glasses with the PES logo on them and hand out a dozen or so at each meeting. Each year, we honor and award one engineer as the Chapter Outstanding Engineer with a plaque. We also send our guest speakers off with an acrylic plaque engraved with the PES logo and the St Louis arch. We also have a pretty good website, IEEE PES - St. Louis Chapter <http://ewh.ieee.org/soc/pes/saintlouis/index.html>.

Upcoming Events

Plug-In Hybrid Cars & Renewable Energy

Speakers Tom R. Schneider & Dr. Saifur Rahman

April 29th

Pauwels Transformers Plant Tour & Lunch

Washington, MO

June 4th

Conoco Plant Tour

Wood River, IL

August 6th



St. Louis Chapter of the Power Engineering Society.

CONGRATULATIONS!!

To PES Chair Ann Lazarski for being nominated for the 2007 Outstanding Engineer Award by the PES Chapter. Ann is currently employed at Ameren Services. She will be presented the award at the April 29th meeting.

Her achievements include: She has chaired the Chapter for 2+ years now. Ann attended out-of-town training, meetings, and represented the Chapter at IEEE section and award meetings and has shown great commitment. She has injected many new ideas, tried different meeting formats, and been very dependable. Some specifics: audio-video feeds to Jeff City and Decatur to be more inclusive; door prizes (the glasses); IEEE PES pin for speakers; special plaques for Distinguished Lecturers; Engineer's week social meeting; and a variety of refreshments. Distinguished Lecturers usually tell us how impressed they are with our chapter. The chapter has grown considerably under Ann's leadership.



Enthralled audience at a typical PES meeting.



2008 PES Vice Chair Elect - Leon White.

Upcoming Events from Affiliate Societies

AIAA Student Conference Awards Banquet featuring Astronaut Dr. Janice Voss as Guest Speaker

Date: Friday, 18 April 2008 (RSVP by April 14)

Location: St. Louis University

Sponsored by: AIAA SLU/Parks Student Chapter

Shuttle Mission STS-99 launched on Feb. 11, 2000, and was Dr. Voss' fifth space flight. Dr. Voss will describe the mission, including a 15 minute video about the flight, and other aspects of life as an astronaut.

Contact Kay Bopp, 314-977-8240 for more information.



AIAA Special Guest, Astronaut Janice Voss.

Missouri Society of Professional Engineers Summer Meeting

Date: June 19 - 21

Location: Sheraton Westport Plaza Hotel, St. Louis

Theme: Gather At The Gateway To Bold Ideas

Programs: This year's professional development programs will focus on an aging infrastructure, green technology, energy, bio-engineering and much more. Mark your calendar today. One of this years sponsor includes Aerospace Company, Boeing, which has a large presence in the St. Louis area.

2008 Electronics, Engineering and Manufacturing Show

Date: April 16

Location: St. Charles Convention Center

Theme: Spirit of St. Louis ERA Chapter

Registration is now open at the ERA website <http://www.erastl.org> Technical seminar schedule is now available as well. Remember: Free Admission, Free Parking, Free Lunch and Beverages, Raffles and Door Prizes.

For more information, please contact Bob Dillon at 314-432-4983 or bdillon@erastl.org.

What's Happening with Engineering in Medicine and Biology Society

Ever wonder what happens at a typical Engineering in Medicine and Biology Society (EMBS) event. Well, one such event on April 3rd drew over 30 including 19 students. The topic of the event was "Registration-based estimates of local lung tissue expansion to assess specific ventilation and specific volume change" by Joseph M. Reinhardt, Ph.D.

The abstract of the event went like this ... The main function of the respiratory system is gas exchange. Since many disease or injury conditions cause biomechanical or material property changes that can alter lung function, there is a great interest in measuring regional lung ventilation and regional specific volume change. We describe a registration-based technique for estimating local lung expansion from multiple respiratory-gated CT images of the thorax. The degree of regional lung expansion is measured using the Jacobian (a function of local partial derivatives) of the registration displacement field, which we show is directly related to specific volume change. We compare the ventral-dorsal patterns of lung expansion estimated across different lung volumes to a xenon CT based measure of specific ventilation in five anesthetized sheep studied in the supine orientation. We show that the registration-based estimates of lung expansion match well with xenon-CT based estimates of lung ventilation.

The speaker's bio ... Joseph M. Reinhardt received the B.S. degree in 1985 from Carnegie Mellon University, the M.S. degree in 1988 from Northeastern University, and the Ph.D. degree from Penn State University in 1994, all in electrical engineering. From 1985 to 1990 he worked as a radar systems engineer at Raytheon Company, in Wayland, MA. He was a member of the Department of Radiology at the University of Iowa as a post-doctoral fellow (1994-1996) and as an Assistant Research Scientist (1996-1997). In 1997 he joined the Department of Biomedical Engineering at the University of Iowa, where he is currently an Associate Professor. His research focuses on medical image processing and analysis. He is a fellow of the AIMBE, senior member of the IEEE, and an associate editor of the IEEE Transactions on Medical Imaging.

If interested in events like this, give Mr. Dan Moran a call at 314-935-8836 or e-mail at dmoran@biomed.wustl.edu.



Consider patronizing a future Engineering in Medicine and Biology Society meeting.

Awards

The Section issues its Annuals Awards in December, but planning and serious consideration to recipients occurs month's in advance. If you know of a deserving individual, please submit your suggestion to Jim Bornholdt or Heidi E Anderson who will serve on the Award's Committee for 2008.

Computer Society Recap on Software Engineering Licensure

On March 27, the Computer Society held a joint meeting with the Saint Louis Section. As part of the meeting, Mr. Bob Becnel, P.E. presented "Path Toward Software Engineering Licensure" at Parks College on the St. Louis University Campus. The event was well attended and nearly half were students.

Licensure of the practice of engineering in the United States is regulated separately in each state. For several decades, traditional disciplines like Electrical, Mechanical and Civil engineering have been regulated in this manner in Missouri and Illinois and other states. Software Engineering is a newer discipline that is being considered by some to fall under the umbrella of licensure. Many steps must be resolved prior to a Professional Engineering (PE) with Software Engineering-based exam can be issued. One such step is the development of an examination and examination process that would credentialize potential PEs.

The Software Engineering Licensure Consortium was developed in the Summer of 2007 by some of the larger professional organizations to consider the concept of Software Engineering licensure. Organizations like National Society of Professional Engineers (NSPE), IEEE-USA, IEEE-CS, IEEE-COMSOC, NCEES and others have provided support to the Consortium. The SELC's mission is to establish a Software Engineering licensure exam in order to give individuals States the option to further License the practice of Software Engineering.

The presentation focused on the responsibility that licensure bring to the engineering process. "Many times, engineering artifacts are non existent in Industry or Academia, but licensure still plays a pivotal role," explained Becnel during the presentation. Bob Becnel is both a Professional Engineer in Missouri and a CS member from the St. Louis area. He is currently the PEI (Professional Engineers in Industry) member serving on the SELC.

The St. Louis IEEE Computer Society is looking forward to a few events this coming year. At a later meeting, they are sponsoring a presentation on Radio Frequency Identification (RFID) by Dr. Mark Lynch. Future events will be a presentation on Teradata by Mr. Dinesh Hiripitiyage and a presentation on Electronic Recycling, or eCycling, at St. Louis Community College - Florissant Valley. We also hope to participate in and assist with the 2008 IEEE Real-Time & Embedded Technology and Applications Symposium (RTAS) (#13870) which will be held 22-24 April 2008 here in St. Louis. If interested in contributing or attending a meeting, contact Jessica at jdumaine@stlcc.edu.

Christmas Social Planned

It is not too early to plan on attending the IEEE St. Louis Christmas Social. The date of the event will be Saturday, December 20 at the Lake St. Louis Clubhouse. More details will follow.



Renewable Energy to Highlight Next PES Chapter Meeting

Mark your calendars for April 29 beginning at Noon at the Ameren Headquarters as the next PES Chapter meeting will feature two guests to speak on Renewable Energy. Furthermore, the Presentation of the 2007 Outstanding Engineer will be made to Ann Lazarski.

ACCELERATING PLUG-IN HYBRID VEHICLES

Global terrorism, oil prices above \$100 a barrel and climbing trade deficits that result along with concerns over climate change all call for the USA to reduce its dependence on imported oil. Advances across a broad array of technologies such as power electronics, permanent magnet motors, computation and controls and, of course, continuing advances in battery technologies are creating an opportunity to move the USA passenger and truck fleet to electric drive technologies. This third wave of electrification could meet perhaps half of current demand for liquid petroleum fuels by the substitution of electricity from the grid. Over the last year the buzz from auto makers worldwide is no longer just hybrids but plug-in hybrids. This presentation will review the geopolitical pressures, the changing technology, the inherent efficiency benefits and the driving needs of the USA that together are creating the opportunity for green mobility through vehicle electrification. Proposed legislation that may provide needed early adopter incentives will also be reviewed.

Dr. Thomas R. Schneider

Tom is the past chair of the IEEE-USA Energy Policy Committee and the current Chair of the IEEE Plug-In Hybrid Task Force.

RENEWABLE ENERGY TECHNOLOGIES: A GLOBAL PERSPECTIVE

This paper examines the state-of-the-art, and opportunities provided by renewable energy-based distributed generation technologies to meet the challenges of a sustainable energy system. It explores the renewable energy technologies like solar, wind, hydro and geothermal. It provides a history of the growth of these technologies throughout the world during the past 10 to 15 years, and traces the cost, size and country-specific penetration issues in certain countries where the growth has been significant in the past, and expected to continue. The market penetration and energy cost issues as well as environmental concerns from renewable energy technologies are explored. The paper concludes with the opinion that with the significant worldwide growth in demand for electricity in the next several decades, it will be necessary to develop more carbon-neutral power generation technologies and renewables can play a major role in this endeavor.

Dr. Saifur Rahman

Saifur Rahman (S'75, M'78, SM'83, F'98 – IEEE) is the director of the Advanced Research Institute at Virginia Tech where he is the Joseph Loring Professor of electrical and computer engineering.

Contact Ann at ALazarski@ameren.com.

Meet the IEEE President, Lewis M. Terman

Lewis Terman is President and CEO of the Institute of Electrical and Electronics Engineers (IEEE) worldwide. IEEE is the world's largest scientific, educational and professional society with over 370,000 members in more than 160 countries. Through its members, the IEEE is a leading authority in areas ranging from aerospace, computers and telecommunications to biomedicine, electric power and consumer electronics.

Lewis Terman received the B.S. in Physics and the M.S. and Ph.D. degrees in EE from Stanford in 1956, 1958, and 1961 respectively. He joined the IBM Research Division in 1961, where he worked on solid-state circuits, semiconductor technology, memory design and technology, digital and analog circuits, and processor design. He did two tours of duty on the Research Division technical planning staff, 1979-1980 and 1991-1993. He was manager and senior manager of groups working in MOS logic and memory design and technology, and was involved in a number of programs leading to products. He received nine major IBM technical awards, including three Corporate awards. He was elected to the IBM Academy of Technology in 1991, and served as president in 2001-2003. He became Associate Director, IBM Research Systems Department in 2003, and retired in 2006. He is a member of the US National Academy of Engineering.

IEEE Activities– (S'58-M'61-SM'74-F'75-LF'97) OFFICES: IEEE Board of Directors, 2007-08, 2004-05, 2001; IEEE President, 2008; IEEE President-Elect, 2007; Division I Director, 2004-05.

COMMITTEES/BOARDS: Vice President Technical Activities Board, 2001; Nominations and Appointments, 1993-94; Strategic Planning, 1998-99, 2005; Awards Board, Vice Chair, 1996-97; Awards Planning and Policy, Chair, 1996-97; Proceedings of the IEEE Editorial Board, 1989-2004; Proceedings of the IEEE, Guest Co-Editor, 1995; IEEE Spectrum Editorial Board, 1999-2005; PSPB Treasurer, 2003; Technical Activities Board, Member, 1990-2002, 2004-05; Treasurer, 1995-98; Technical Meetings Committee, Chair, 1993-94; Strategic Planning and Review, Chair, 1999; Restructuring Committee, 1991-92; Ad Hoc Budget Review, Chair, 1992; Blue Ribbon Committee on Restructuring, 1996-97; TABARC, Chair, 2003-04; Society Review Committee, Chair, 1995.

SOCIETIES: Solid-State Circuits: President, 1998-99; Vice President, 1996-97; Treasurer, 1988-89; IEEE Journal of Solid-State Circuits, Editor, 1974-77, Special Issue Guest Editor, 1972, 1973; Awards, Chair, 1986-87; Electron Devices: President, 1990-91; Vice President, 1988-89; Awards, Chair, 1988-89; IEEE Electron Devices Transactions, Special Issue Editorial College, 1979, 1980, 1985; Circuits & Systems: Board of Governors, 1981-83; Long Range Planning, 1995.

CONFERENCES: International Solid-State Circuits Conference, Program Chair, 1983; Symposium on VLSI Technology, Systems, and Applications, Technical Program Co-Chair, 1985, 1987; Symposium on VLSI Technology, Chair, 1985-86, Technical Program, Chair, 1987; Symposium on VLSI Circuits, Co-Chair, 1988-89, Technical Program Co-Chair, 1987; Symposium on Low Power Electronics, Chair, 1995.

AWARDS: IEEE Fellow 1975; Solid-State Circuits Technical Field Award, 1995; Electron Devices Society Distinguished Service Award, 1995.

Contact Mr. Terman at president@ieee.org.



*2008 IEEE President, Lewis Terman.
Terman serves through December
31, 2008.*

2008 Chapter Contacts

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Computer Society (CS)	jdumaine@stlcc.edu
Engineering in Medicine and Biology (EMBS)	dmoran@biomed.wustl.edu
Industry Applications Society (IAS)	gkumar@ieee.org
Power Engineering Society (PES)	alazarski@ameren.com
Computational Intelligence Society (CIS)	gkumar@ieee.org
Education Society Chapter	fran@engr.siu.edu
Rolla Subsection	sahra.sedigh@ieee.org

2008 Affinity Group Contacts

Graduates of the Last Decade (GOLD)	anil@siu.edu
Women In Engineering (WIE)	jacki.stroble@gmail.com

2008 Student Branch Contacts

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Southern Illinois University – Edwardsville	gengel@siue.edu

Winter 2008 Upcoming Events

2008 Electronics, Engineering and Manufact Show	April 16
Region 5 Conference and Robotics Competition	April 17-19
AIAA Awards Banquet (with Astronaut Janice Voss)	April 18
Section Planning Meeting	April 24
Plug-In Hybrid Cars & Renewable Energy (PES)	April 30
Section Planning Meeting	May 29
Pauwels Transformers Plant Tour (PES)	June 4
MSPE Summer Meeting	June 19-21
Summer Social	September 4
Christmas Social	December 20

APRIL 2008

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