



ION Saint Louis



SPRING 2011

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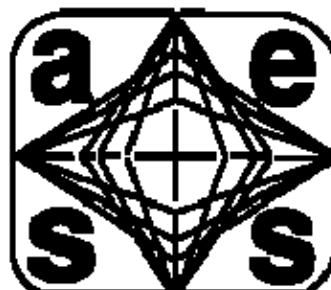
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Section Website
<http://ewh.ieee.org/r5/stlouis>



Society List

IEEE Education Society



Chair's Column

Spring time is already here, which marks the quarter way point of the year. However, the Section has been active. Since Jan 1, some of the highlights of Section activities include:

Robert Spiegel recently formed a new Life Member Committee and the first meeting was held in January to discuss the year's activities.

The Annual Section Planning Meeting was convened at Washington University to plan the year's events, approve a budget and appoint Committee positions. This meeting was held in January. The 2nd Quarter's Planning Committee was held in March.

In February, the Section held a Joint Luncheon Meeting with the St. Louis Chapter of MSPE on the FIRST Robotics Competition. Speakers from the St. Louis Science Center and Emerson Electric addressed the attendees.

The Section negotiated a position on the FIRST Planning Committee (FPC) identified as a liaison position dedicated to IEEE. Mr. Richard Burkhart of Emerson Electric will occupy the position.

In March, the Section hosted a Robotics Qualifying Round for all Section Student Branches. The winner of the round would represent the Section at the Region 5 Robotics Competition in April at Baton Rouge, LA. The competition was held on the SLU Campus and organized by Dr. Kyle Mitchell. Team #1 from the Missouri University of Science & Technology (MST) won the competition. Other teams to compete included SIU-E, Mizzou and a Team #2 from MST.

Chapter Meetings from EMBS, P&ES, and many individual student activities have also taken place.

We have recently had a change in the Section's Officers. Mr. David Gitz stepped down from IEEE and as Treasurer. We wish Mr. Gitz success in future endeavors. In his place, Mr. Dinesh Hiripitiyage will take over the role of Treasurer. Dinesh will continue on as Vice Chair next year. I am delighted to welcome Dinesh as an officer and he will hit the ground running. Dinesh's email address is dinesh_h@hotmail.com.

The Section is in the process of rejuvenating the IEEE Microwave Theory and Techniques (MTT) Chapter in Saint Louis. In the past, MTT has been part of a Joint Chapter. Based on the number of members in the MTT Society in Saint Louis, this is likely going to happen again. Some permutations of Joint Chapter have included IEEE Antennas and Propagation Society, IEEE Electron Devices Society, and IEEE Photonics Society, This rejuvenation is closely watched by the MTT President, Richard Snyder. The Society has agreed to provide a expenses towards a Distinguished Lecturer and Kick Off Business Meeting in the Fall to sign a petition. If interested, please contact myself and I will get your name to the organizers.

Respectfully submitted,

Bob Becnel, P.E.
Chair, Saint Louis Section

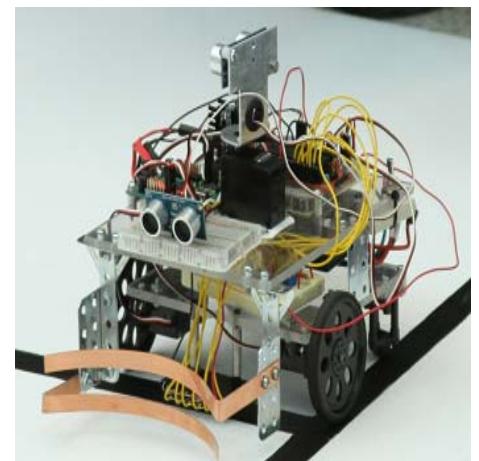
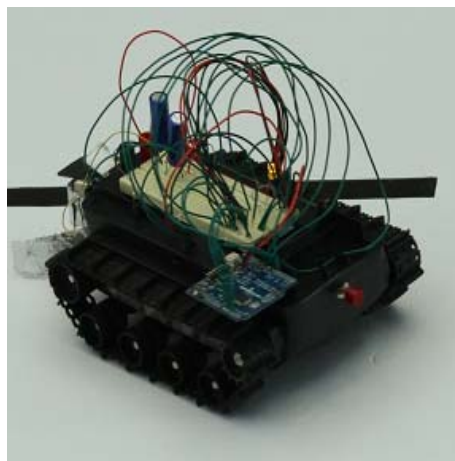
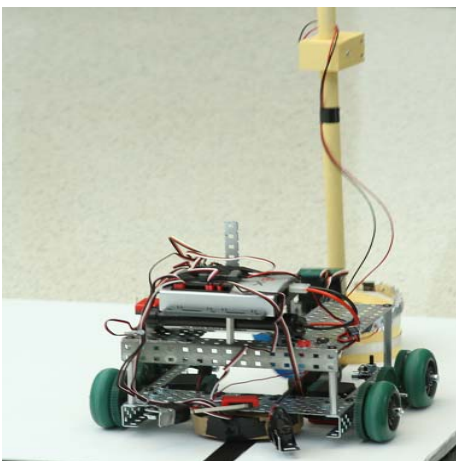
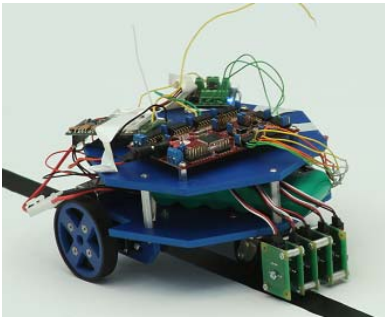
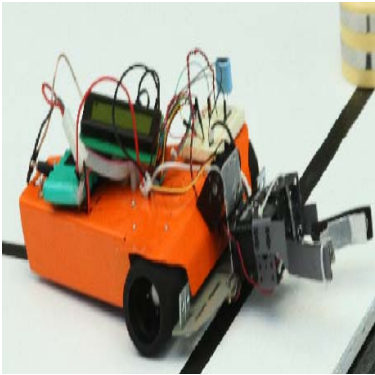


Student Branch News

Robotics Competition, sponsored by the Institute of Electrical and Electronics Engineers (IEEE), was held on March 19, 2011 at McDonnell Douglas Hall in Saint Louis University. The competition was open to all undergraduates at any one of the universities in the St. Louis Section of the IEEE. A team from Missouri University of Science and Technology completed the most design tasks to win the competition. There were a total of five competing teams – two from Missouri University of Science and Technology, and a team each from Saint Louis University, University of Missouri and Southern Illinois University Edwardsville.

Judges included Peter Wittenberg, Abdiel Louis, Maciej Zawodniok, Phil Costantinou and Kyle Mitchell.

All photos printed here are courtesy of Dr. Kyle Mitchell.



St Louis Section Announcements

Call for Nominations:

The IEEE St Louis Section would like to recognize its outstanding members for 2011. If you would like to nominate a fellow member, please take the time to download a nomination form, fill it out and submit it on that member's behalf. The winners will be awarded at this year's Winter Social.

All of the award categories are listed on the nomination form. All of the forms should be completed and returned before the 31st of July.

Send all nominations to david.kreher@gmail.com. Please include "IEEE STL Nominee" in the subject line.

Please visit <http://www.ewh.ieee.org/reg/5/> for more information and nomination forms.

Take in a game of robots!



Can science and tech be cool? Can kids get tackle difficult tasks and compete like crazy? Can a robot competition be more exciting than a basketball tournament? The answers are yes! The Saint Louis FIRST (For Inspiration and Recognition of Science and Technology) robotic season is heading toward a grand finale with Championships in April. This is a very big deal. Saint Louis will host the Championships for three years. We are expecting 400 teams and 20 000 visitors from 34 countries. Saint Louis aims to be the best host city ever.

Do you know of a kid who might be interested in this? Bring them. These are free family friendly events. Save these dates:

FIRST Champion at Edward Jones Dome/Americas Center on April 27 - 30, 2011

More information on the FIRST events in St Louis can be found on the [St Louis FIRST website](#). Additional information on FIRST can be found on the [FIRST National website](#).

FIRST and the FIRST logo are registered trademarks of the United States Foundation for Inspiration and Recognition of Science and Technology (US FIRST).

APRIL PROGRAM

This MSPE St. Louis Chapter lead event is co-sponsored by IEEE and INCOSE



“Protecting Your Inventions and Ideas: Intellectual Property Fundamentals for an Engineer”

Guest Speaker: Mr. Kirk Damman, J.D.

Topic: Engineers are fundamentally inventors every day. Many times, the sweat and financial toils of both the employer and employee should be protected in terms of a patent. Mr. Kirk Damman, J.D. a patent attorney at Lewis, Rice and Fingersh will shed insight and helpful information for our members to use in protecting Intellectual Property both in the United States and Internationally. The general process of preparing for invention disclosure, identifying a skilled attorney for one's particular technology and interfacing with that attorney will be discussed. Questions will be answered as time permits.

Kirk A. Damman practices in all areas of intellectual property law with an emphasis on helping startup and growing companies begin to manage, license, and gain value from their intellectual property (patents, trademarks, copyrights, and trade secrets) and obtain protection for their most important ideas and products. Licensed to practice in front of the United States Patent and Trademark Office for more than 10 years and having a degree in physics, he works with clients whose products are as diverse as: circuit and electrical designs; medical devices; computer software and Internet; heavy equipment and manufacturing; alternative energy and fuel; and consumer goods.

Mr. Damman has co-authored two books on patent law and serves as the director of the United States Patent Practice (Patent Agency) degree program at Webster University where he is also an adjunct professor. As part of this position he has taught ongoing education programs at the United States Patent Office for the Patent Examiner's who review patent applications. He is also an active member of the American Intellectual Property Law Association where he is the vice chairman of the committee for Emerging Technologies. He was selected for inclusion in *Missouri & Kansas Rising Stars*® 2010. Mr. Damman is a 1999 graduate for Harvard Law School.

WHERE: Engineers Club, 4359 Lindell Blvd., St. Louis, MO 63108

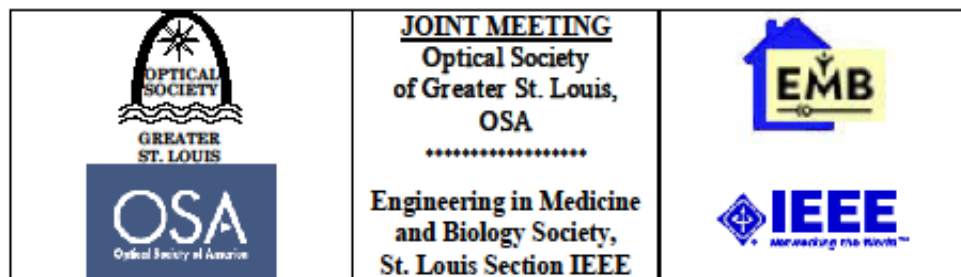
WHEN: Wednesday, April 13, 2011

TIME: Sign in at 11:30 am, Lunch at Noon, Program following lunch.

COST: \$15 per person. (Make checks payable to MSPE), Earn 1 PDH for this program.

RESERVATION DEADLINE: Friday, April 8, 2011

RESERVATIONS: Call, fax or email Kurt at (314) 533-9333, (314) 533-9336,
kurt.krispin@engineersclub.net



Recent Advances in X-ray Phase-Contrast Imaging

Speaker: Mark Anastasio, Ph.D., Washington University

Time: 7:00 pm, Tuesday, 19 April 2011

**Place: 4525 Scott Ave, Washington University School of Medicine,
East Building, Room 1300.** (Best access is from Forest Park Ave. to Taylor Ave.
Parking is available at on-street meters or in the adjacent MetroLink garage, at \$1/hr. Call 314-458-6383 if you're lost or need directions. See attached map.)

Abstract:

X-ray phase-contrast imaging methods have dramatic advantages over conventional X-ray imaging methods and are being actively developed for a variety of important biomedical imaging and materials testing applications. These methods exploit the fact that, at diagnostic X-ray energies, variations in the real component of the refractive index of soft tissues are several orders of magnitude larger than variations in the imaginary component, or equivalently, the X-ray attenuation coefficient. Consequently, X-ray phase-contrast imaging may permit the visualization of tissues that have identical, or very similar, X-ray absorption properties. In this talk, we describe recent advancements in image-formation methods for phase-contrast imaging and tomography. Application of these methods to problems in clinical medicine and Biomedical Engineering are presented.

Biography: Mark Anastasio earned his Ph.D. degree at the University of Chicago in 2001, and is currently a Professor of Biomedical Engineering at Washington University in St. Louis (WUSTL). Prior to joining WUSTL, he was a faculty member at Illinois Institute of Technology. Dr. Anastasio is an internationally recognized expert on tomographic image reconstruction, imaging physics, and the development of novel biomedical imaging systems. He has conducted pioneering research in the fields of diffraction tomography, X-ray phase-contrast imaging, and photoacoustic tomography. He has published over 60 peer review articles on these topics and was a recipient of an NSF CAREER award. He is on the Editorial Board of the Journal of Biomedical Optics and is on the organizing committee for the SPIE Photonics West Photons plus Ultrasound conference and the SPIE Conference on Image Reconstruction from Incomplete data. He was also a Program Chair for the 2009 Optical Society of America Signal Recovery and Synthesis Topical Meeting.

Refreshments (pizza & soda) will be served at 6:30PM before the meeting.

The public is welcome. Students of all ages are encouraged to attend. For further information contact:

Bruce Whiting
OSGSL President
(314) 458-6383
whitingb@wustl.edu

Lou Pape
OSGSL Program Chairman
(314) 233-5782
louis.e.pape-ii@boeing.com

Joint IEEE Section and IEEE P&ES Chapter Tour BUSSMANN GUBANY CENTER

Tuesday, April 26, 2011

3:00pm to 4:30pm (4:30pm – 5:00pm Pizza and Beverages will be included)

1.5 PDH credits will be offered

The Paul P. Gubany center is located adjacent to the Cooper Bussmann, Inc. Headquarters in Ellisville, MO (Suburb west of St. Louis). This modern indoor facility has a 640MVA short time rated short circuit generator capable of delivering 300KA at 750VAC three phase and 100KA at 1,000VDC in the test cells. AC test frequencies can be varied from 25 Hz to 60 Hz.

Experienced technicians and the facility manager have over 120 years of combined test experience. Testing has been conducted on fuses, circuit breakers, contactors, busway, equipment grounding return paths, surge suppressors, semiconductors, protective clothing and enclosed electrical apparatus.

This tour of the testing facility and equipment will be guided by the Gubany Center Testing facility manager and a Cooper Bussmann Field Application Engineer. After the tour, attendees will be able to view actual testing from our Gubany Center Observation Deck, where we will illustrate the importance of:

- Proper Interrupting Rating
- Conductor Protection
- Motor Starter Protection
- Arc Flash Protection



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The tour has a capacity of 30 people, so this is limited to IEEE members only with an RSVP to bob@becnel.com.

No charge for tour, but RSVP required. If you RSVP and can't attend, it is your responsibility to cancel so as to free up the slot for other members.





2010 IEEE REGION 5 AWARDS CALL for NOMINATIONS

IEEE Region 5 is accepting nominations for the following

- Outstanding Large Section (>500 members)
- Outstanding Small Section (\leq 500 members)
- Outstanding Member
- Outstanding Educator
- Outstanding Large Student Branch (>50 members)
- Outstanding Small Student Branch (\leq 50 members)
- Outstanding Student
- Outstanding Student Branch Counselor
- Outstanding Large Company (>500 employees)
- Outstanding Small Company (\leq 500 employees)
- Outstanding GOLD Member
- Outstanding Individual Achievement Award (up to 5 awards)

A short description of each award and nomination forms can be obtained from the Region 5 Website (<http://ewh.ieee.org/reg/5/>).

Please send nominations to the Region 5 Awards Committee Chair, Terry Martin, t.martin@ieee.org.

The deadline for nominations is February 15, 2011.

Please address any question to the Awards Committee Chair.
Terry Martin
479-575-6011
t.martin@ieee.org

ST. LOUIS SECTION AESS ACTIVITIES

JIM LEONARD, CHAIR

The most active student branch currently is the University of Missouri at Columbia (Known as MIZZOU). They are in the process of forming an AESS Student Branch Chapter. They are developing a UAV. The team is organized as follows:

Joe Ondrus	President
Daniel Nabelek	Vice-President
Joe Morris	Chief Production Manager
Matt Evans	Chief Design Engineer
Jake Jenkins	Asst CDE
Justin Rychlewski	Treasurer and Power Distribution
Michael Rose	Autopilot and Sensors
Ryan Dickherber	Architecture and Ground Control
Eric Lefevre	RPV
Austin Bernskoetter	Fundraising

The team has procured an RPV and are in the process of converting it to an UAV. They have contacted Dr. Larry Chasteen , who gave a lecture on March 16 as part of an SPAC they are hosting.

The students at Missouri University of Science and Technology (MS&T) did step forward this semester and plan to restart the excellent UAV program run by Dave Erdos and his 2007-2009 team. Dr. Steve Watkins is their advisor. The technical article that Dave and Dr Watkins wrote regarding their UAV Project has been submitted to AESS editor Dr. Shirley Cheng.

The MS&T student leader is David Macke. I met with him, Dr. Watkins, and Dr. Josh Rovey (MS&T Aero) on 15 March 2011. We discussed the start of their UAV Project. We will include also Aero and Mechanical engineering students. This team has drafted a Constitution so that they can become part of the MS&T Design Center. I have reviewed and approved it with respect to AESS.

Also I addressed the MS&T IEEE Student Branch-requesting volunteers for their UAV project. The student arranging this meeting is Max Eisenbruan. I provided pizza for the students. We held the meeting in the MS&T Emerson Hall and had 24 in attendance. The program consisted of:

A Boeing Blue Angels Video
A Boeing Prologue Room Video
Presentation: "The IEEE Is Your Lifetime Companion"
Presentation: "UAV Student Project at MS&T"

Dr. Watkins made a brief appearance to request volunteers from the audience to work on the UAV Project. David Macke noted that they have a Kestrol Autopilot with simulation capability and any student is welcomed to come to their "FLY FRIDAYS" meeting held just upstairs. Dave noted that flying the simulator was not trivial and he often "sweated bullet". The past team's UAV is also in the same lab (see photo). Any attendee is welcomed to "fly" the simulator.



Mercury-Atlas 6 Designated as IEEE Historical Milestone

The St. Louis Chapter of AESS was very active in the nomination process of the IEEE BoD approved Mercury-Atlas 6 Historical Milestone. The dedication was held on February 25, 2011 in the Boeing Bldg 100 Auditorium followed by a social in the Prologue Room, also in Bldg 100. Moshe Kam, 2011 President of IEEE was the featured keynote speaker. A photo of the plaque mounted on aluminum shaped like the Mercury Capsule is shown below. The three rings signify the three orbits flown by Col John Glenn. It was placed in the Prologue Room during the social. When the weather improves it will be permanently mounted in the outside promenade area with several benches. This is in an area of public access. A detailed article appeared in the St. Louis Post Dispatch on Saturday, February 26, 2011.



IEEE Member Benefits

EBook Classics for IEEE Members

[18 new titles](#) were added for the 2011 membership year. IEEE members now have access to more than 240 eBooks from the IEEE Press collection through IEEE *Xplore*, at no additional cost.

The eBook collection spans a number of today's technologies across 15 different content areas, and includes:

- practical handbooks,
- introductory and advanced texts,
- reference works, and
- professional books.

Newer eBooks will be added every year.

Finding IEEE eBook Classics

1. Log in to [IEEE Xplore](#) using your IEEE Member Web account.
2. Under the "Browse" heading in the left-hand navigation, click on "Books".
3. Select the "Classics" tab from the top of the page. Under this tab you will find a listing of all the free titles.

-- or --

1. Log in to [IEEE Xplore](#) using your IEEE Member Web account.
2. Under the "Browse" heading in the left-hand navigation, click on "Books".
3. On this page, you can browse alphabetically by book title, or if you prefer, browse by keyword, such as "software".
4. If the title is included in the IEEE eBook Classics, you will see an orange "FREE" icon to the right of the book's title, and individual chapters will have live links.

IEEE memberNet– The IEEE Member Directory Online

IEEE memberNet is an online search and networking tool that allows members to connect with technical and engineering experts worldwide. This tool can be utilized by members seeking peers who share a common technical interest, membership, or affinity.

- Exclusive benefit of IEEE membership, at no additional cost.
- Only online directory that connects all IEEE members.
- Enables networking by technical and geographic affiliations, affinities, and more.
- Flexible search building tool using multiple criteria.
- 'myNetworks' personalization to each member's technical interests and involvement with IEEE.

Visit your IEEE account and look for memberNet module for more information.

Electrical Power Systems Engineer

Electrical Reliability Services (ERS), a wholly owned subsidiary of Emerson, is a leader in helping utilities, industrial, financial and government clients throughout the United States improve the reliability and performance of their electrical distribution systems. ERS offers a full range of services including complete electrical distribution system commissioning and start-up services, acceptance and maintenance testing, project management, engineering studies, and electrical and safety training. Priding itself on workplace safety and unparalleled expertise in the field, ERS continues to pursue the most qualified candidates to add to its growing team. With more than 28 offices in the U.S. we offer employment opportunities coast to coast. Join the industry leader in electrical testing, maintenance and engineering services. Emerson is an equal opportunity employer offering competitive salaries and comprehensive benefits. Please visit our website at <http://www.electricalreliability.com>.

ERS is currently seeking an experienced Electrical Power Systems Engineer to support our service offerings in the Kansas City, MO area. Candidates must live or be willing to relocate within 50 miles of the Kansas City area to be considered for this position.

Electrical Power Systems Engineer

Job Summary:

Perform power system and engineering studies; provide technical support to field personnel. May be required to perform occasional supervisory role.

Duties and Responsibilities:

- Perform power system and engineering studies.
- Perform ground fault settings, short circuit, and simple protective device coordination.
- Assist other engineers with power system studies.
- Perform engineering studies or portions of very complex studies including: reliability, harmonics, arc-flash and reliability centered maintenance studies.
- Perform electrical power system documentation including: system configuration, equipment ratings and settings.
- May perform circuit and system measurements and write reports relating to: EMF, electrical load voltage, and power quality.
- Prepare estimates and take-offs for engineering study project proposals.
- Maintain computer software and data utilized in the conduct of power system and engineering studies.
- Review reports prepared by others for completeness and format correctness.
- Represent the Company as lecturer on technical topics.

Job Requirements

Required Skills:

- Customer Focus – Is dedicated to meeting the expectations and requirements of internal and external customer; Gets first-hand customer information and uses it for improvements in products and services; Acts with customers in mind; Establishes and maintains effective relationships with customers and gains their trust and respect.
- Decision Quality – Makes good decisions based upon a mixture of analysis, wisdom, experience and judgment; most of his/her solutions and suggestions turn out to be correct and accurate when judged over time; sought out by others for advice and solutions.
- Problem Solving – Uses rigorous logic and methods to solve difficult problems with effective solutions; probes all fruitful sources for answers; can see hidden problems; is excellent at honest analysis; looks beyond the obvious and doesn't stop at first answers.

Required Education and/or Experience:

- Graduate Engineer (BSEE).
- Intermediate level position for a graduate electrical engineer with two years experience in power system engineering analysis.
- Professional standing: P.E. license strongly preferred.
- Membership in IEEE desired.
- Requires several years of experience in electrical engineering analysis.
- Requires excellent verbal and writing skills to communicate effectively with clients, field engineers, peers and management.
- Requires good judgment, dependability and responsible for assigned projects.
- Requires sound grounding and experience in electrical engineering analysis.
- Willing to work flexible hours, weekends, holidays and night work. Must be available for out-of-town and international travel of up to several weeks.
- Regularly required to stand, walk, use hands and fingers, talk and hear. Frequently required to sit, and work at computer. Specific vision abilities required by this job include close vision, distance vision, basic color differentiation and the ability to adjust focus. Ability to lift and/or move test equipment weighing up to 100 pounds.
- Valid Driver's License.

Additional Company Information

Emerson Network Power, Electrical Reliability Services is an equal opportunity employer with a written Affirmative Action plan. We will not discriminate against any applicant or employee on the basis of race, sex, religion, age, national origin, color, disability, veteran status or genetic information. Emerson is committed to providing a workplace free of any discrimination or harassment.

Contact Information

Peggy Sibila Buck | Recruiter | Electrical Reliability Services
Emerson Network Power | 610 Executive Campus Drive | Westerville OH 43082
T 614.841.5611 | F 614.807.3335

Additional Website Information

<http://www.emerson.com/en-US/about/careers/search/Pages/default.aspx>