

THE REPORTER

Journal of the Central Indiana Section • IEEE

Request for Volunteers

The IEEE Central Indiana Section is looking for new and dedicated volunteers. The following positions are currently vacant for 2016: Secretary, Computer Society Chair, Communications Society Chair, and Newsletter Editor.

Anyone interested in volunteering within the section’s Executive Committee can contact the section’s Nomination Chair: David Koehler at David.Koehler@ieee.org

2015 EnCON / IEEE Metro Area Workshop



If you attended our annual EnCON conference this year at the Indianapolis Marriott North, thank you. If you missed it, you missed a lot of great workshops, plenary speakers, student posters, and plenty of great networking opportunities over tasty breakfasts, delicious lunches, healthy breaks, and a wonderful Friday evening reception. Below are some photos taken during this event. Please plan on attending next year!



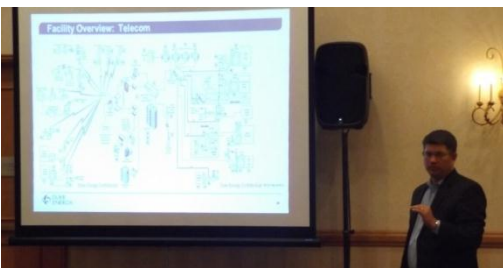
Conference Committee Chair and Section Chair, Phil Walter with plenary speaker Wanda Reder.



Plenary Speaker Wanda Reder addressing conference attendees.



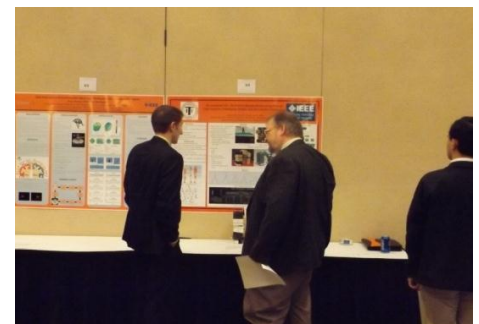
Attendees, speakers and conference committee members at lunch.



Friday morning plenary speaker Jason Handley.



Friday evening reception speaker Vince Socci.



Students presenting their research posters to conference attendees.

Congratulations to the 2015 EnCON Student Poster Contest Winners!



Undergraduate Winner: Luanna Silva de Siqueira,
Indiana Institute of Technology, *Real-Time Control of an
Automobile Robot using Noninvasive Motor Imagery
EEG Signals from Human Motor Cortex Region*



Graduate Winner: Jonah Crespo, IUPUI and the
National Renewable Energy Laboratory
*Development of Explicit Appliance Models in the
Intearated Enerav Svstem Model*

Power & Energy / Industry Applications / Power Electronics Society

Diana Vasquez, Chair, PES/IAS/PELS
Ben Huckaba, Vice-Chair, PES/IAS/PELS

In September the PES/IAS/PELS participated in a tour of the Mid-Continent Independent System Operator (MISO) facilities in Carmel as well as a Lunch & Learn session on Energy Flow in Reactive Fields, presented by Hans G. Schantz, CTO of the Q-Track Corporation. In November, members attended the two-day IEEE Smart Tech Conference covering relevant Power, Electric/Hybrid Vehicles, and Internet of Things. In all three cases, the events were well attended and very informative.

In January the PES/IAS/PELS meeting will be an Overview of the Threat of Intense Geomagnetic Storms to High Voltage Grids, presented by Dr. William A. Radasky, Ph.D., P.E., IEEE Life Fellow of Metatech Corporation. The February meeting is tentatively planned to be on the current state of the IEEE and North American electric industry, while the April meeting will be on Forensics of Failed Electrical Equipment and the May meeting is planned to be Electric Grid Cyber Security.

All upcoming meetings will take place the IPL Morris Street location in the safety room from 6:00 – 8:30 PM with the first 30 minutes for networking. Registration and detailed information are available at the Section website.



CIS-IEEE National Engineers Children's Day

Saturday, February 20, 2016

10:00 am - 3:00 pm

The Children's Museum of Indianapolis

National Engineers Week will be celebrated February 21-27, 2016. Once again, The IEEE Central Indiana Section is teaming up with The Children's Museum of Indianapolis, to increase public awareness about Engineering and to help young students consider Engineering as a career option.

The event will be held at The Children's Museum on Saturday, February 20th, 2016, from 10:00 - 3:00. The program consists of engineers being stationed near several exhibits throughout the museum. Each station will have a "hands on" activity that ties in with an engineering discipline. Volunteers will be there to talk with visitors, answer any questions about engineering, and hand out materials.

Visit <http://www.cis-ieee.org/eweek.asp> to fill out a volunteer form even if you can participate for only part of the day. Please contact Bob Evanich (b.evanich@ieee.org, 317-838-2268) if you would like to help plan an activity or if you have any questions about the program.

Congratulations IEEE Fellows and Senior Members

The IEEE CIS would like to congratulate our recently elevated IEEE Fellows and Senior Members.

Y. Charlie Hu – Fellow effective January 2016

Dan Jiao – Fellow effective January 2016

Vaneet Aggarwal – Senior Member

Their bios are available below. If we have missed a recent elevation of anyone, please let us know by contacting Helen McNally at mcnallyh@purdue.edu. We want to congratulate all our members on significant milestones.

Y. Charlie Hu is a Professor of Electrical and Computer Engineering and Computer Science (by courtesy) and a University Faculty Scholar at Purdue University, and an ACM Distinguished Scientist. He received Ph.D. in Computer Science from Harvard in 1997. His research interests lie broadly in mobile systems, distributed systems, operating systems, and computer networking. He has published over 170 publications in these areas which have been cited over 13,000 times with an h-index of 48. He has raised more than \$8 million dollars of research funding, with project sponsors including NSF, Intel, SRC, Google, Cisco, Narus, and Honda R&D Americas. Since 2010, he has conducted pioneering work on power modeling and energy management of mobile devices which been cited over 750 times, and widely covered by news media such as ABC News, NBC News, BBC, Times of India, MIT Tech Review, and Scientific American, and has given invited talks on this topic around the world (Stanford, Berkeley, Cambridge University, Imperial College, EPFL, Max Planck Institute, Microsoft Research, Tsinghua University, Inst. of Energy Efficiency/UCSB, etc.).

Dan Jiao received her Ph.D. degree in Electrical Engineering from the University of Illinois at Urbana-Champaign in October 2001. She then worked at the Technology CAD (Computer-Aided-Design) Division at the Intel Corporation, Santa Clara, CA until September 2005 as Senior Engineer, Staff Engineer, and Senior Staff Engineer. In September 2005, she joined Purdue University as an Assistant Professor in the School of Electrical and Computer Engineering, where she was promoted to a tenured Associate Professor in 2009, and a Full Professor in 2013. She has authored three book chapters and over 230 papers in refereed journals and international conferences. Her current research interests include computational electromagnetics, high-frequency digital, analog, mixed-signal, and RF integrated circuit (IC) design and analysis, high-performance very large scale integration (VLSI) CAD, modeling of microscale and nanoscale circuits, applied electromagnetics, fast and high-capacity numerical methods, fast time-domain analysis, scattering and antenna analysis, RF, microwave, and millimeter-wave circuits, wireless communication, and bio-electromagnetics.

Vaneet Aggarwal received the B.Tech. degree in 2005 from the Indian Institute of Technology, Kanpur, India, and the M.A. and Ph.D. degrees in 2007 and 2010, respectively from Princeton University, Princeton, NJ, USA, all in Electrical Engineering. He is currently an Assistant Professor at Purdue University, West Lafayette, IN. Prior to this, he was a Senior Member of Technical Staff Research at AT&T Labs-Research, NJ, and an Adjunct Assistant Professor at Columbia University, NY. His research interests are in applications of information and coding theory to wireless systems, machine learning, and distributed storage systems. Dr. Aggarwal was the recipient of Princeton University's Porter Ogden Jacobus Honorific Fellowship in 2009.

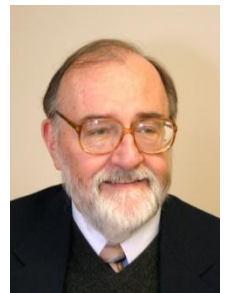
ADVERTISEMENT

How to save money on compliance testing

By Donald L. Sweeney

Having your final product fail its compliance test can be costly. Redesigning or adding fixes can be expensive and time consuming, possibly delaying your product to market. How can this additional cost be easily avoided? I can think of three ways.

1. Take your product to your test lab early in the design stage so they can point out any potential problems, thus avoiding the expensive fixes or redesigns of a final product.
2. Take an EMC Design seminar to become aware of future EMC pitfalls. In the seminar, you will learn the latest updates of current rules and regulations, common reasons why products fail their compliance tests, and problem solving techniques to implement early in the design stage.
3. Take the *EMC By Your Design* Seminar in Northbrook, IL, April 12-14, 2016 and receive a \$300 discount for new attendees who register by March 22 or a 50% discount for those who took the class using a prior version of the current textbook *Controlling Radiated Emissions by Design*, 3rd Edition, who register by March 22.



More information can be found at www.dlsemc.com/seminar or by calling Don at 847-537-6400.

Purdue IEEE ROV: Road to the International MATE competition

By Henry Shi and Kyle Rakos

Rising to over 40 members, this marks the eighth year and largest team in the history of the Purdue IEEE ROV (Remotely Operated underwater Vehicle) team. The team's mission is to foster technical and professional skills in its members by designing, constructing, and testing innovative underwater vehicles to compete in the MATE competition.

MATE (The Marine Advanced Technology and Education Center) gathers prospective technical students around the country to compete in an annual oceanic competition. MATE's mission is to improve marine technical education and prepare the future oceanic workforce. One way they fulfill this objective, is holding a competition that replicates real world ROV missions. This year's competition introduces a simulated oilfield environment and Europa moon mission.

The team needs to construct an ROV that can transport key objects with precision, determine the quality of the environment using pressure measurements, retrieve objects with serial numbers to be identified, analyze sample origins once collected from seafloor, and photograph coral colonies. To trounce the competition's performance portion, the team has studied past performances and devised novel designs to accomplish the mission goals.

Veteran IEEE ROV members have already completed formal training of its new members and they are continuing to develop through the design process. More than ever, the new team is rising to the challenge and has begun mapping the path to place in the competition. Having completed the training phase, the new members are ready and excited to work besides ROV veterans in the current design and testing phase. The Electrical Team has begun designing various circuit boards to provide power management, tool control, and logic. One of the advanced features the team is pursuing this year is a custom made sonar solution to provide GPS-like functionality underwater. The Mechanical team has been progressing in parallel. They have developed a frame to minimize the required space while still providing the needed power box, main electronics tube, manipulator, main camera housing, and more. Additionally, code and control functionality is under development by Software Team. Once design and testing has been completed, the team will begin to build and then verify the final product for the competition.

The team now eagerly awaits the competition at NASA's Neutral Buoyancy Lab in Houston, TX from June 23 - 25, 2016. For more information contact team captain **Kyle Rakos** at krakos@purdue.edu or go to purdueieee.org/committees/rov/



The current CAD model of ROV X8.

2016 Rising Stars Conference

January 2nd – 4th, 2016 Las Vegas, NV

The premiere event for IEEE Region 6 students and young professionals is approaching quickly. The IEEE Rising Stars Conference will be held from January 2 – 4 in Las Vegas, Nevada. Students and young professionals will be in attendance to network with their peers and industry professionals from top tech companies from around the world. The Rising Stars event will be held in conjunction with Storage Visions (Jan 4-5) and the Consumer Electronics Show (Jan 6-9). This is an excellent chance to attend all three events in one shot.

The Rising Stars Program includes a career fair, competitions, technical innovation and professional development presentations, pitch your team idea workshop and more! Presenting attendees include IEEE executive committee members and speakers from a plethora of innovative companies. This event is a great opportunity for students and young professionals alike. Potential attendees have until December 4th to register for a discounted price of \$199. From 12/5 to 1/1 the price will increase to \$249. Late registration will cost \$299 after 1/1/16. Availability may be limited, register early to reserve your spot. Discounted hotel pricing is available.

IEEE Region 6 is offering \$1500 prize money for students who upload a persuasive pitch, company idea or hackathon team. To participate in the competition, upload a video to YouTube (2 min. max) and pick from pitching a project, research OR an IEEE promotional idea. Videos must be uploaded by November 30. Winners will be notified by December 15 and have the opportunity to present onstage at the conference!

For more information about the pitching workshop visit <http://sites.ieee.org/risingstars/files/2015/10/2015-idea-pitching-workshop-v4.pdf> For more information and registration visit <http://sites.ieee.org/risingstars/>

Military and Aviation
EMC Environmental Power Quality

MIL-STD 461 A-F
MIL-STD 810 A-G and 202
MIL-STD 704, 1399 and 1275
RTCA/DO-160 C-G
Boeing - Airbus
FAA AC20-136
EUROCEA/ED-14E
SAE ARP5412/5416

iNARTE Certified Facility
iNARTE Certified Engineering Staff
Large Chambers (36'x25'x20')
200 V/m up to 40 GHz
Up to 3000 V/m pulse

For more information,
visit www.dlsemc.com
or call 847-537-6400 today.

ANAB NVLAP DLS
Wheeling, IL

2016 Meeting Calendar

Date	Host	Subject	Location
Monthly	CIS	Executive Committee Meetings	Internet/Phone Bridge
January	PES/IAS/PELS	Threat of Intense Geomagnetic Storms to High Voltage Grids	IPL Morris Street
February 20	CIS	National Engineers Children's Day	The Children's Museum of Indianapolis

... Check the [Section web page](#) for details and current information.

ADVERTISER EVENT

April 12-14, 2016	DLS dlsemc.com	See Advertisement on Page 4	Northbrook, IL
-------------------	---	-----------------------------	----------------

Central Indiana Engineering Web Links

ACEC	American Council of Engineering Companies, Indiana	acecindiana.org
ASCE	American Society of Civil Engineers	inasce.org
ASME	American Society of Mechanical Engineers	sections.asme.org/central_indiana
ASM-INDY	American Society for Metals - Indianapolis	asm-indy.org
CIECN	Central Indiana Engineering Consultants' Network	indy-engineer.dnsalias.com
CINLUG	Central Indiana Linux Users Group	cinlug.org
IHIF	Indiana Health Industry Forum	ihif.org
INCOSE	International Council on Systems Engineering	incose-coa.org
INDSPE	Indiana Society of Professional Engineers	indspe.org
INDYASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers	indyashrae.org
NSBE-IAE	National Society of Black Engineers - Indianapolis Alumni Extension	nsbe-ip.org
PIMCIC	Project Management Institute - Central Indiana Chapter	pmicic.org
SAE	Society of Automotive Engineers, Indianapolis	saeindiana.org
Sciencetech	Sciencetech Club in Indianapolis	sciencetechclub.org
SIM	Indianapolis Chapter of Society for Information Management (SIM)	SimNet.org
SWE-CI	Society of Women Engineers - Central Indiana Section	swe-ci.com
Techpoint	A diverse collection of technology-based Indiana industries	Techpoint.org

+++++
 Distribution: The Reporter is made available electronically to the approximately 1800 IEEE members within the Central Indiana Section including student members and faculty of Purdue, IUPUI, Rose-Hulman Institute of Technology and ITT Technical Institute.

Central Indiana Section Active Volunteers

Director (Past Chair) (317) 441-2076
David Koehler David.Koehler@ieee.org

Chair (812) 223-6520
Phil Walter Phil.Walter@ieee.org

Vice Chair (317)-230-6287
Tim Alt tim.alt@ieee.org

Treasurer (317) 250-7932
John Kassebaum John.Kassebaum@IEEE.org

Secretary (361) 437-4300
Umama Tasnia umama.tasnia@lhpssoftware.com

**Power & Energy/
Industry Applications Societies** (317) 726-1236
Earl Hill eshill@loma-consulting.com

Computer Society (317) 888-0611
Joseph Benek joseph.benek@wicor.com

Signal Processing Society (765) 494-3538
Mimi Boutin mboutin@ecn.purdue.edu

Engineering in Medicine and Biology Society
(317) 759-4204
David Chartash dchartas@ieee.org

Communications Society (812) 237-3451
Xiaolong Li Xiaolong.LI@indstate.edu

**Central Indiana Engineering Consultants'
Network (CIECN) Co-Chairs**
(317)-225-4126
Will Kassebaum will.kassebaum@IEEE.org

Membership Development (317) 726-1236
Earl Hill eshill@loma-consulting.com

Professional Activities (PACE) (317)-838-1457
Terry Frierson terry.frierson@duke-energy.com

Newsletter Editor (765) 494-7491
Helen McNally mcnallyh@purdue.edu

Communications Officer (317) 838-2268
Bob Evanich b.evanich@ieee.org

Women in Engineering 812.565.3777
Isabel Lujan isabel.lujan@ieee.org

Finance Committee
Vacant

Central Indiana Section Active Volunteers (cont'd)

Webmaster (317) 838-2268
Bob Evanich b.evanich@ieee.org

Young Professionals (317) 340-5905
Jonah Crespo jgcespo@umail.iu.edu

Constitution and Bylaws (812) 237-3399
Yuetong Lin lin.yuetong@gmail.com

Historian (317) 845-5050
Marvin Needler mnpn@juno.com

Pre-University/Student Affairs
Vacant

Student Activities Chair
Michael Hayashi michael.r.hayashi@ieee.org

IUPUI Student Branch
Jonah Crespo jgcespo@umail.iu.edu

Indiana State Student Branch
Peter Berterman

**Rose - Hulman Institute of Technology Student
Branch**
April Riddett riddetae@rose-hulman.edu

Purdue University Student Branch
Matt Molo mmolo@purdue.edu

Ball State Student Branch
Tucker Hale

Editorial Policies
Each issue of The Reporter typically references three months - the month in which it is published and the following two months. The Reporter is typically published in March, June, September, and December.

Material to be included should be submitted mid-month prior to the month it is to be published. For example, material intended for the September issue should be submitted to the Editor by August 15. The Editor will send a reminder to all IEEE Central Indiana Section entities by the 25th of the month to submit their updates.

Copy should be submitted electronically. Photographs are desirable. Advertisements are welcome. Contact the editor for layout sizes and rates at mcnallyh@purdue.edu.

How Do You Communicate??

Want to know what is happening in Central Indiana Section? Don't know where to look? Already inundated with E-Notices? Need to ask a question? Want to find an expert? Got a meeting idea?

Here are some of many communication channels available in Central Indiana Section



Find the Central Indiana Engineering Consultants' Network and the Central Indiana Section Communications Society, as well as several other IEEE related organizations on LinkedIn.



Student Branch members are encouraged to join "CIS-IEEE Student Branches" group on Facebook. Several opportunities for students and student branches have been posted there. The Facebook group also provides an opportunity for CIS student members to interact or to make contact with student members outside of Central Indiana. There is no substitute for a good network, but be aware that some hiring managers are also checking these sites.

Communications Society members can find "COMSOC – Central Indiana Section" on Facebook.

CIS Home Pages

Start with the main site. (www.cis-ieee.org) Check out the calendar of events, or link to the many IEEE groups in Central Indiana Section, including all of the Student Branches.

Not getting E-Notices? E-Notices are not only a resource for keeping in touch with the activities throughout CIS, but you will also receive information on topics of interest throughout IEEE

E-Notices

Login to myIEEE from the IEEE Home Page (www.ieee.org) and sign-up!
Check out the calendar of events, at the main site. (www.cis-ieee.org)