

THE REPORTER

Journal of the Central-Indiana Section • IEEE

IT'S TIME FOR THE ANNUAL CIS PICNIC AND BASEBALL GAME EVENT

Sunday, August 9, 2009 - 12:30 pm
Victory Field, Indianapolis
Suite Level Party Terrace

It's time to put aside our engineering hats and computers and come out to Victory Field for fun and socializing. CIS-IEEE is proud to present "Picnic at Victory Field" on Sunday, August 9, 2009. All members, their family and guests are invited to enjoy an all-you-can-eat buffet of hamburgers, hot dogs, BBQ chicken sandwiches, pasta salad, baked beans, soft drinks and beer and then watch the Indianapolis Indians take on the Charlotte Knights. Cost for the game and buffet is just \$25 for everyone 3 and older (**children under 3 are free and do not need a ticket**). You must register and send payment by July 31st. The picnic will be from 12:30 pm to 1:45 pm. The game starts at 2:00 pm. It is also [Souvenir Sunday](#) at Victory Field where the first 4,000 fans, beginning at 12:30 pm, will receive an Indians Backpack.

To register: Please go here: <http://www.cis-ieee.org/event.asp?eid=92> You may pay for your tickets with a credit card or mail your money in. Tickets will be available at the Victory Field Box Office on the third base side of the stadium (just give them your name) anytime between August 5th and August 8th or at Will Call on the day of the game.

Please contact Will Kassebaum at 317-225-4126 or Will.Kassebaum@IEEE.org for more information or if you have any questions.

Please make checks payable to: **IEEE Central Indiana Section**

and mail to:

Carlotta Berry, CIS-IEEE Treasurer

2098 Cassia Drive

Plainfield, IN 46168

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ComSoc Chapter Being Revived

Sam Kincaid has graciously and enthusiastically agreed to revive the Communications Society Chapter here at CIS. Read Sam's story here how this came to be and how you can support its formation and future impact to CIS.

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The Central Indiana Section of the IEEE is pleased to announce the revival of the local Communications Society (ComSoc) Chapter. The chapter is not only for Central Indiana members, but we are opening it up to all Indiana ComSoc members. We currently have over 20 members responding, exceeding the 12 needed to file the petition for the chapter to be reinstated. Now we wait for the formal paperwork to pass through the channels and begin our work. One of the first items of business will be to elect officers, so I am working with the new chapter's membership to prepare us to move forward with elections. Once completed, we will embark on some exciting short courses, tours, and other activities directly related to the communications field. My hope is to bring to the section a chapter that will not just exist, but be used as a model by others; one that looks at the communications field as one of the next new frontiers. Most importantly: a chapter that doesn't just exist in a charter hanging on a wall, but is actively working for its members, the profession, the community, and the students. We will be breaking new ground in our section by offering alternative venues for discussion, on social networking sites like LinkedIn, Facebook, and Twitter. We will be conducting courses and some meetings through our own Webinar offerings, and there will be many more surprises. I would like to take this time to thank our Section leadership for having the trust and faith in me to take on this task on their behalf. So, what is ComSoc?

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The IEEE Communications Society promotes the advancement of science, technology and applications in communications and related disciplines. It fosters presentation and exchange of information among its members and the technical community throughout the world. The Society maintains the highest standard of professionalism and technical competency. Be sure to check out the brand new IEEE ComSoc website at <http://www.comsoc.org> .

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ComSoc exists in a day where most are familiar with communications like 3G, WiFi, WiMAX, LTE, RFID, and a whole host of other acronyms and the standards that accompany them. Methods of communications have had the lines of definition become blurry as convergence becomes reality. So why is it so important to have a Communications Society? Why the IEEE? Well, let's reflect back in time.....

In 1825, Samuel F.B. Morse, was an accomplished artist, and commissioned to paint a portrait of Gilbert du Motier, Marguis de Lafayette in New York. During his work, he received a message by horse messenger that his wife was dead. When he arrived home, his wife had already been buried. Morse was distraught, not even knowing she had been ill, let alone missing her funeral. At that point, he would change his professional focus from painting to that of finding a way to improve long range communications. In 1832, Morse would meet Charles T. Jackson in a chance encounter, who enlightened Morse to his studies of electromagnetism. Morse would go on to create the concept of the single-wire telegraph, and a subsequent code to go with it, a code that is now an international standard.

Now Morse couldn't have known how significant his reaction to his loss would be to the world and its future. Morse Code takes human words and punctuation, and encodes them so that they are capable of being transmitted electrically, and then through the human interface, the transmission is decoded back into text. If you think about it, Morse had created an early form of computer logic where dots and dashes could also represent states of on or off, yes or no, true or false. He had now opened a doorway, through which a new science and industry would emerge. Morse was a man with an intelligent and creative mind as an artist, and through environmental situations and encounters had become aware, adapting to his environment and progressing, creating something incredible in a completely new profession.

In 1981, I was engrossed in math and programming languages, but the field at the time was so scattered and vague, I lost interest. Entering the military in 1983, I chose a very crude form of career development. Now with a wife to support, and little professional mentorship I looked for the job that paid the most. I scanned down the list at the end found it: a "Morse Operator". Soon I found myself in the middle of a career in the US Intelligence Community and working on very advanced techniques in communications, as it directly pertained to Morse Code. Programming was fine tuning its way to standardization, as was communications. In 1988, I was helping work on concepts of Artificial Intelligence (AI) and ways it would aid communications. The concept was simple with Morse Code, a code based method of communications no longer needed a human interface, and could be translated and have interaction via a computer, and that computer could become aware, adapting to its environment and progressing into a higher state of abilities.

The Cold War ended, and now the military had lost interest in many of us. So, in 1993, I chose a career in law enforcement. It was there that I realized that when many brilliant minds come together, having no logical path to progression, or possessing no leadership, things can go horribly wrong. The advent of the internet as a communications means, and its rise to commercial popularity in the 1990s was one such example. Left alone, things went wrong, and became viral - literally. Computer viruses today are commonplace. In time we left humans alone to their devices, and they too became viral. Crimes were not in just the physical world now, but in a virtual one. Now I was engaged in the world of computer forensics - computers and communications now needed policing.

In 2003, I made the shift back to focusing on communications, I had come to realize that none of us should live in a vacuum, and that we should allow our minds to explore both the intellect we had forced upon it, and the environmental influences we have experienced in our lives. I was becoming aware, adapting to my environment and progressing.

Today, in the field of communications, we are at yet another pivotal point in history. From the days of Samuel Morse, when communication was a dot or a dash, we have moved to the reality of Cognitive Radio Technology where the communications device will be enabled with Artificial Intelligence (AI) technology. AI will make the radio aware, and able to adapt and optimize based on the environment around it. The device will take it even more granular, by incorporating biometrics, so it the environmental changes are even that of recognizing you as the user. Now that we are digital and communications are in the form of a binary code base, translating languages could soon become a global reality. IEEE 802.22 WRANs are a major step towards true Cognitive Radio being a first step to reality. The DoD's MANET project also represents a clear path to it. Communications has become aware, adapting to its environment and progressing.

Now, what, if anything, does this have to do with the IEEE and the Communications Society other than trivia

for your entertainment? Well, academia is a great resource, but sometimes, isn't always exposed enough to the outside world. Their world, by design, is theoretical. Active professionals of the trade, though experiencing the real world, often do not have the latest knowledge to realize the solutions to their problems. The IEEE, is an organization that allows the collaboration of those two worlds, and with it, just as when Morse met Jackson, great things begin to happen. But the IEEE itself has become a global and vast organization in terms of its membership and their specialties. That is where the sister societies come in. Now, instead of vast unorganized thought, we have compartmentalized and focused attention in specific areas - COMSOC's area being communications. It is and will be the bringing together of all those in the trade, academia and professional, that will allow us to lead the way to the future. Additionally, we always share a secondary focus, to guide the next generation of engineers. It is our responsibility to keep this profession alive, ethical, and imaginative; and we do it through mentoring the minds of the youth rising up in it. If we do that, we inject intelligence into them and they become aware, adapting to their environment, and progressing.

So, as we reopen this society to active status again within CIS, what responsibilities do we have as members?

1. We actively share information with each other, so as to better broaden our knowledge in the field, and hopefully foster new ideas.
2. We seek out and recruit new members. More members means more knowledge and more interactivity.
3. We mentor the next generation, the student members; getting them to realize that it is not about looking up to us, but looking to them for the future.
4. We act as the intelligent gene-pool that the governing bodies look towards for answers, either from us, or other areas of the IEEE.
5. We act as the resource that tells the consumers and manufacturers what makes sense - what doesn't, or what is missing.
6. We understand that we are the next great collaborative idea just waiting to be thrust upon the world.

We are the IEEE ComSoc, we are aware, adapting to our environment, and have been progressing towards Engineering the Future for 125 years!

Join us, and experience that future!

Sam Kincaid
Interim Chair
CIS-ComSoc

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**Central Indiana Section IEEE / Power Engineering Society/
Industry Applications Society
Annual Student Awards Banquet - 2009**

by Earl Hill, Chair, PES/IAS Chapter, CIS

To better accommodate award winners, CIS-IEEE and PES/IAS decided to combine their formerly separate annual awards banquets. The joint event was held on April 14 at the IPL Safety Room. After a fine dinner catered by Indianapolis Power & Light, the following program was presented:

Keynote Speaker –

Mr. Joe Bentley, Vice President of Power Delivery, Indianapolis Power & Light

Student Awards –

Professor Tim Skvarenina, Purdue University
Mr. Richard Hildreth, Chair Emeritus, PES-IAS

CIS Member of the Year: Dr. Marvin Needler

presented by Professor Phil Walters, Rose-Hulman Institute of Technology

PES – IAS Section Award: Mr. Richard Hildreth

presented by Professor Phil Walters, Rose-Hulman Institute of Technology

Senior Member Recognition –

Professor Phil Walters, Rose-Hulman Institute of Technology

Dr. Skvarenina and Mr. Hildreth presented awards to the following students:

Senior Power Students:

Rose Hulman Institute of Technology: Brett Stephens and John Stargel
Purdue University ECET: Samuel Green
Purdue University ECE: Ross Howard
IUPUI: Andrew Bowman

Junior Power Students:

Rose-Hulman Institute of Technology: Michael Fiedeldej
IUPUI: Otto Hohmann

Senior Projects:

Purdue University ECET: Deep Sheth
Purdue University ECE: Benjamin Dannan, Matthew Klutzke, Michael Mitchell,
Mark Snyder
Rose-Hulman Institute of Technology: Kevin Beals, Nathan Ingersoll, John Stargel,
Brett Stephens



CIS-IEEE Vice Chair Phil Walters (R) Presents PES/IAS Section Award to Dick Hildreth



Vice Chair Walters (R) and Marvin Needler, Member of the Year

Student Awards



More Student Awards



Yet Another Student Award





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Power & Energy/Industry Applications Societies News & Activities

The PES/IAS is in the middle of another busy year. Since the last Reporter, the PES/IAS has conducted a short course on the fundamentals of electricity, conducted by Dr. Fred Brockhurst, Professor Emeritus from Rose-Hulman Institute of Technology. The short course consisted of four sessions conducted in February and March, and was held at Indianapolis Power and Light's Morris Street location.

The PES/IAS, in conjunction with the Central Indiana Section, presented awards to students in the electrical engineering disciplines, and to members of the IEEE. The awards banquet is discussed in a separate article in this issue.

The PES/IAS also conducted a tour of the Benton County Wind Farm. This tour is discussed in a separate article as well.

In the future, the PES/IAS has a number of additional activities planned. These include the following:

- Tour of the Laboratory of Renewable Resources Engineering, at Purdue University. The role of the Laboratory in multi-disciplinary research evolved over its 31-year history from biofuels research to its current function as an Integrative Center for Biotechnology and Engineering which carries out multi-disciplinary research in bioenergy, bioprocessing, bioproducts , bionanotechnology, and biorecovery. Planned for September.
- Renewable Energy Seminar – a one day seminar. In this seminar, Professors Niusha Rostamkolai and Phil Walters, of Rose-Hulman Institute of Technology, will discuss the main features of various renewable energy sources. Planned for October.
- Combined Engineering Society banquet, with the American Society of Mechanical Engineers and others. Planned for November.

In 2010, the PES/IAS has a number of other activities planned, such as seminars on Plug-In Hybrid Vehicles (PHEV), Energy Efficiency, another short course, and the Student Awards Banquet.

Lastly, the PES/IAS has entered into an arrangement with the Electric League of Indiana (ELI). Under this arrangement, IEEE members can attend ELI meetings at the same price as ELI members. Since the arrangement began, ELI has conducted the following meetings:

Presentation by Mark Myles, CEO of the Central Indiana Corporate Partnership (CICP)

Presentation by Ann Murtlow, CEO of Indianapolis Power & Light

On June 26th ELI sponsored a presentation by: Dr. Charles Bantz, Indiana University Executive VP & Chancellor, IUPUI entitled: “Commencing to Grow - IUPUI's 20 Year Master Plan”

For more information, contact PES/IAS Society Chair Earl Hill, at eshill@loma-consulting.com

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VOLUNTEER OPPORTUNITIES

The Central Indiana Section still needs help in a few areas. This is your opportunity to give back to an organization that has helped you in your career and a chance to network with your peers and gain recognition. The following positions are currently looking for help:

- Computer Society Chapter Chair
- Constitution and Bylaws Chair
- Fund Raising Chair
- Section Treasurer

Becoming an IEEE volunteer can be a gratifying and memorable experience. Whether your skills are suited for organizing conferences and meetings, financial reporting, communicating or maintaining web sites, CIS can use your skills.

Additional opportunities for involvement include fund raising, awards, educational activities and the development of new programs.

As an IEEE volunteer, you can take pride in participating in activities that interest you, while expanding your knowledge of the IEEE, gaining valuable management and leadership skills, and connecting with others in your profession.

If you are interested in serving in any of the above listed positions please contact any of the CIS officers listed near the end of this newsletter.

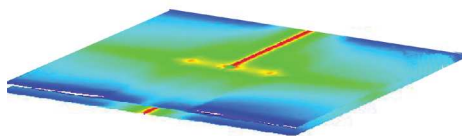
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PRESS RELEASE

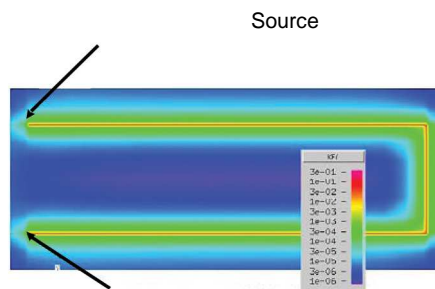
Controlling Signals and Return Currents on PCBs

Signal integrity, including the relationship between signals, their return currents and EMC/EMI, is now included in-depth in Donald L. Sweeney and Roger Swanberg's seminar/workshop *EMC by Your Design*. In addition to the textbook *Controlling Radiated Emissions* and printed handouts, students will receive the textbook *PCB Design for Real-World EMI Control* by Dr. Bruce Archambeault of IBM. They will see computer simulations of signal currents flowing on PCB's and learn how to control these signals and their return currents. This is in addition to a three-day review of EMC theory, a hands-on practical application workshop, proprietary EMI software, new filter design software with PSPICE simulations, including a student version of PSPICE, and a free product review.

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Benton County Wind Farm Tour

by Earl Hill, Chair, PES-IAS

On May 12th the CIS-IEEE and PES-IAS co-sponsored a tour of the Benton County Wind Farm. The farm is located a few miles west of Earl Park, Indiana. When in full operation, the wind farm will be one of the largest wind-power facilities in the world and will generate enough carbon-free electricity to power more than 200,000 average American homes. The farm consists currently of 87 generators model Gen4 [GE 1.5mw Wind Turbines](#), with a total capacity of 138 MW. The Wind Farm's Earth friendly power is being sold to local utility companies in an attempt to lower energy costs and reduce greenhouse gas emissions. Commercial operation began in April 2008. Fifty IEEE members and their guests were registered for the tour.

The tour was conducted from 3 pm to 5 pm and hosted by Mr. Kreg Kitchen, representing the product developer ORION Energy Group. In addition to Mr. Kitchen, the tour was lead by representatives of enXco, the operations and management agent for the farm.

The tour involved a talk at the control center for the farm, followed by a trip to one of the wind farm turbines, which stand over 200 feet above the farm. At the time, the winds were relatively light, so while all but a few of the turbines were turning, relatively little power was produced.

The tour was followed by an optional dinner at the Lafayette Cracker Barrel or the Beef House, in Covington, Indiana.

Because of popular demand another tour was scheduled for the following day, but was cancelled due to inclement weather. This tour will be rescheduled for October. Those registered for the cancelled tour will have the right of first refusal for the October tour.

The tour was generally well received. The IEEE would like to thank Duke Energy, ORION Energy Group and enXco for their efforts in making this tour a success.



Tour Group Members



Wind Farm from a Distance



Nacelle Detail



Tour Guides



New High MPG Vehicle from Rose-Hulman

2009 Meeting Calendar

Date	Host	Subject	Location
July 23, 2009 6:00 pm	CIS	Executive Committee Meeting	Will be conducted via GoToMeeting. Contact Steve Shen for details
August 9, 2009 12:30 pm	CIS	Annual Picnic and Baseball Game	Victory Field Indianapolis
September 24, 2009 6:00 pm	CIS	Executive Committee Meeting	Will be conducted via GoToMeeting. Contact Steve Shen for details

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

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(effective January 1, 2009)**

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Computer Society
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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 15th 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.

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. Limited copies of The Reporter may be selectively distributed to non-members when it serves the aims of the Section. Examples include public, industrial, and school libraries, and other engineering societies and professional organizations.

Central Indiana Engineering Web Links

ACEC	American Council of Engineering Companies, Indiana	acecindiana.org
ASCE	American Society of Civil Engineers	sections.asce.org/indiana
ASME	American Society of Mechanical Engineers	http://sections.asme.org/central_indiana/
ASM-INDY	American Society for Metals - Indianapolis	asm-indy.org
CINLUG	Central Indiana Linux Users Group	cinlug.org
IBEN	Indiana Biomedical Entrepreneur Network	indianabionetwork.org
ICES	Indiana Council of Engineering Societies	in-ces.org
IHIF	Indiana Health Industry Forum	ihif.org
INCOSE	International Council on Systems Engineering	www.incose.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-iae.org
PIMCIC	Project Management Institute - Central Indiana Chapter	pmicic.org
SAE	Society of Automotive Engineers, Indianapolis	http://www.saesections.org/indiana/
Sciencetech	Sciencetech Club in Indianapolis,	scientechclub.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