November 2006 www.cis-ieee.org

THE REPORTER

Journal of the Central Indiana Section • The Institute of Electrical and Electronics Engineers, Inc.

Central Indiana Section Annual Awards Banquet

On Tuesday Nov. 7, CIS-IEEE will host its fifth annual awards banquet at the Ritz Charles in Carmel, Indiana. CIS-IEEE is energized and driven by the people, some of which are pictured below. We invite all section members to attend the banquet to see how you can get involved. As a major banquet bonus, this year the keynote speaker is IEEE President-Elect Dr. Leah Jamieson.



Congratulations to....!!!!

The Central Indiana Section of the IEEE would like to congratulate **Damon Holladay** as the section's 2007 Outstanding Engineer. We would also like to congratulate Bob Evanich and Brad Snodgrass as this year's Outstanding Members. **Bob Evanich** is responsible for the CIS-IEEE website. Additionally Bob organized the 2006 Engineer's Week event at the Children's Museum. **Brad Snodgrass** has organized and led the Teacher In-Service Program (TISP). Plaques for these achievements will be awarded at the CIS Awards Banquet.

Members who have achieved "Senior Member" status this year are as follows: Balakrishnan Venkataramanan, Berry Frederick, Evans Jeffrey, Evans Barbara, Huehne Karl, Janik Raymond, Jiao Dan, Jones Stephan, Katorgi Maher, Kumar Koh, Cheng-Kok, Owens Brian, Shalaev Vladimir, Tan Hong, Utter Mark, Wood Gregory, Janik Raymond (Fox Valley section), and Katorgi Maher (listed as Dallas section). These members will also be recognized at the banquet and will be presented with the Senior Member Pin.

The Reporter

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Rose-Hulman Institute of Technology Student Branch

CIS-IEEE representative Ed Wheeler

Purdue University Student Branch

CIS-IEEE representative Open Position

Editorial Policies

Each issue of The Reporter references three months - the month in which it is published and the following two months. The Reporter is not published in June, July, and August because there are generally fewer meetings held during the summer months.

Material to be included should be submitted midmonth 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 monthly updates. If no update is received for that month, only the mission statement and contact information will be published for that entity.

Copy should be submitted electronically. Photographs are most desirable and may be submitted in electronic format or color, black-and-white glossy, or Polaroid. Please note that black-and-white photographs reproduce best. Advertisements are welcome. Contact the editors for layout sizes and rates.

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The Reporter

Power Engineering Society / Industrial Applications Society News

The PES/IAS Planning committee met on October 24, 2006 to discuss activities for the societies in late 2006 and 2007. In attendance were the following:

Dick Hildreth Bette Gumerson Jerry Hohn Aruna Ranaweera Brian Davin Gary Rhodes Bill Lewis Jeffery Rachford Earl Hill Niusha Rostamkolai Dana Smith

The first item for business was discussion of the Wabash River Generating Station tour. This is a coal gasification project near Terre Haute and is covered later in this issue of The Reporter. Jerry Hohn then gave the treasurer's report. One reason for the concern of the PES/IAS Planning group is the slow but steady reduction in funding due to declining participation in activities. This is a key reason for revitalizing the section.

Chairman Hildreth then discussed in more detail the decline in membership in the IEEE, and in the PES and IAS specifically in Central Indiana. Membership in PES/IAS has decreased by 70% since the 1990s. Partly this is due to retirements, but other factors may be at work as well. One possible cause is that many companies no longer pay for IEEE dues. Another consideration is the lack of visibility. To this end, it was suggested that the section:

- Identify and appoint "ambassadors" to key companies to spread the word about the IEEE, and to provide more input regarding what the membership would like to see in terms of activities. Letters, phone calls and visits were preferred to emails. The following individuals will follow up:
 - Niusha Rostamkolai Duke Energy (Plainfield)
 - o Jerry Hohn IPL
 - o Gary Rhodes Municipals and co-ops within driving distance
- Greater use of webcasts. Earl Hill will look into use of IEEE tools in this area.

Another suggestion is that the Annual PES/IAS Student Awards Banquet has not been effective in bringing in student or adult members. To this end, it was suggested that the PES/IAS Banquet be either combined with the CIS-IEEE Annual Banquet, or with Student Design Award Banquets at the three area universities. At this time, only IUPUI is known to have such a banquet. Jerry Hohn will look into this issue in more detail. The issue has also been raised to the CIS-IEEE Executive Committee, and will be discussed at the Strategic Planning Meeting on December 16th.

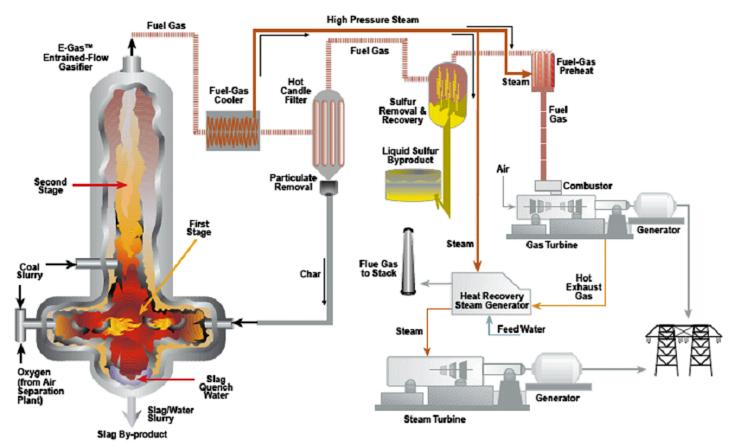
The group discussed a number of possible events. These could be simple lectures, tours, or short courses. The Planning Committee is considering the following events: Employment Networking, System Protection, Predictive Maintenance, Alternative Energy, Business Side of Engineering, Power System Fundamentals, National Electric Code, Grounding, Lightning Protection, Design Calculations for NEC Compliance, Mentor Program, Tour Lucas Oil Dome, Advanced Lighting Systems, Power System Modeling, Current/Future Television Technologies, Airport Tour, Tour WISH-TV, Airport Weather Station, Wind Farm Tour, Nucor or Steel Dynamics Tour, Cummins or Caterpillar Tour, Harding St. Generating Station Tour, Arc Flash Calculations/Requirements, AT&T Tour, and Ethanol Plant Tour. Each attendee was asked to pick a few topics to research for possible presenters and expand topic into an outline for discussion at the next meeting.

The next meeting of the PES/IAS Planning Committee will be held on Nov. 14, 2006, at the IPL Safety Room, 1101 River Avenue, Indianapolis, at 6:30PM. To access IPL, turn north on Division Road. At about 1280 Morris Street, turn right onto River Avenue and approach the IPL gate (which should open). Check the following <u>URL</u> for a Google map to the location. This map is clearer using Google's "Hybrid" map. Dinner (such as pizza or sandwiches) will be provided. If any members of either Society have any suggestions for meetings or tours, please forward them to **Dick Hildreth** at dhildreth@cityofanderson.com. We look forward to seeing all the Society members on Tuesday November 14!

Power Engineering Society / Industrial Applications Society News, (cont'd.) Tour of the Wabash River Generating Station, West Terre Haute, Indiana

On October 10, members of the Power Engineering Society (along with the Industrial Applications and other Societies) toured Duke Energy's Wabash River Generating Station. The tour was attended by 19 individuals, and lasted over two hours, including the question and answer session at the end.

This plant uses a coal gasification process, which combines a chemical means of generating gas with a gas power plant. One part of the facility takes petroleum coke, a byproduct of the petroleum refining process, and converts It to "synthetic gas", which is similar to natural gas, but with a smaller heating value. The syn gas is then piped to a combustion turbine and burned. The combustion turbine turns a generator. The output of the turbine is then piped to a heat recovery steam generator (HRSG), which uses the exhaust heat to generate steam. This in turn is piped to a steam turbine, which is part of the old coal power plant at the site. Cinergy/PSI Energy originally built a joint project at its Wabash River Generating Station with the Department of Energy and a Monsanto affiliate, Destec. The chemical side of the plant has been purchased by SGS (Synthetic Gas Solutions), a subsidiary of Conoco Phillips. Duke Energy operates the combustion gas turbine and the steam run generating unit. Below is a schematic of plant operations.



Process Flow Diagram

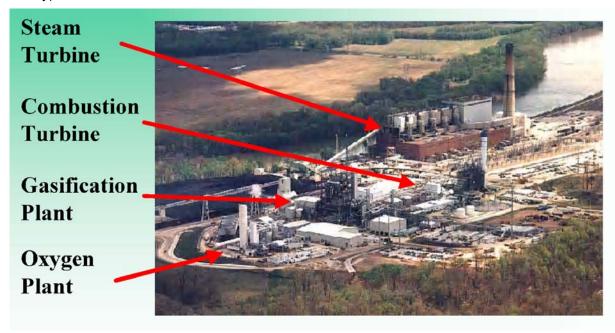
Coal gasification is likely to become a much more common energy source in the future. Although more expensive, utilities have a much easier time reducing pollution (including sulfur and mercury) using gasification. Some issues remain to be resolved in the gasification part of the cycle, but increased use seems probable.

The tour involved a brief introduction to plant workers by Duke Energy staff, followed by a walking tour of the facility. The major areas of the plant include the following:

- Control building
- Synthetic gas production plant
- Water treatment facility

- Combustion turbine
- Heat recovery steam generators (HRSG)
- Steam turbine.

The tour visited all these facilities (to some degree) except the steam turbine, which is some distance away at the old power plant. The following photo shows the facility (courtesy of Global Energy, former owners of the syn gas facility).



This unit will be coming down on October 20 for an extended maintenance period. Maintenance activities include internal inspection of the gas turbine and significant modifications to the HRSG units. All in all, this was a very enlightening trip. The PES/IAS would like to thank Duke Energy for their welcome of our group.

Submitted by Earl Hill.

* * *

CIS-IEEE Election for 2007 Officers

The period for nominating members of Central Indiana Section by petition will officially pass on November 3, 2006. There are no contested slots. The final slate of candidates-elect are as follows: Director: Alan Stillerman; Chairman: Will Kassebaum; Vice-Chairman: Tom Bishop; Secretary: Karl Huehne; Treasurer: Jim Brown. Per Article IV section 5, this slate of candidates will be official upon recording by the Section Secretary (see bylaw Article IV for details at http://www.cis-ieee.org/bylaws.asp). Come and meet your new officers at the 5th Annual Banquet on 7 November 2006.



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CIS-IEEE PACE Activity Leadership Seminar held on October 21st

On Saturday October 21st Lt. Col. Robert W. Sadowski, Ph.D. from the United States Military Academy at West Point and IEEE's Region 1, presented a leadership seminar to an attentive group on the IUPUI campus. Dr. Sadowski and his colleagues at West Point, primarily Col. Barry Shoop, developed the program to address a gap in both engineering curriculum and personal development for many practicing engineers. Even individuals who pursue management degrees may not have much exposure to the "leadership" side of the equation.

The seminar looked at the basic theories of leadership and expanded on what Dr. Sadowski considered "the most convincing" theory. Much of the program was centered around the actions of leaders and how to create a genuine rapport with a group. Special emphasis was made on "putting in the time to become a good leader." As an integral part of the experience, we also took a quick personality profile of each participant and then carried out exercises with teams made up of different mixes of personality types to observe how each group attacked a problem. This was very effective in establishing insight into the dynamics of teams and how an individual might be expected to perform in a given environment. Performance counseling was discussed and particularly how to make this a positive experience for both parties. The final section of the seminar addressed the planning and executing of an effective meeting with key points being defining objectives and controlling the flow of information to achieve the expected results.

It was a very productive experience and Dr. Sadowski was extremely effective at engaging all the participants in his presentation. Thanks to Drs. Sadowski and Shoop for developing this program and bringing it to Indianapolis for the benefit of our engineering community. Also, thanks again to the Engineering Technology Department at IUPUI for their continuing support in this instance providing access to the facilities.

Thomas N. Bishop. PE CIS Executive Committee Secretary 2006

Spearker's Background

Lt. Col. Robert W. Sadowski is currently an associate professor in the Department of Electrical Engineering and Computer Science at the United States Military Academy at West Point. He currently serves as the Electrical Engineering Program Director for an ABET accredited major. He recently was the director of the Photonics Research Center, a joint venture between Physics, Chemistry and EECS. He is a distinguished graduate of the US Military Academy and received his M.S. and Ph.D. in electrical engineering from Stanford University as a Hertz Fellow. He has been deployed twice to Iraq designing strategic coalition communications systems and currently serves as a senior technical advisor to the KICC program. His research interests include non-linear fiber optics, optical information processing and integrated sensor technology. He has nearly thirty publications and patents in the area of nonlinear fiber optics and photonic A/D conversion. He is a Fannie and John Hertz Fellow, Senior IEEE member, Eta Kappa Nu, Phi Kappa Phi, and Sigma Xi member. He currently is a principal investigator under an ARO research grant exploring neural circuitry implementations. His current research interests focus on opto-electronic information processing and analog circuit implementation of error diffusion networks, smart pixel technology, and analog-to-digital (A/D) converters. Applications include high-speed, high-resolution A/D conversion, two-dimensional artificial neural networks for digital half toning, and wavelet transforms for radar signal processing.

Lt. Col. Sadowski's career has spanned over twenty years. He has served in a variety of command and staff positions from platoon leader in the 82d Airborne Division to company commander to task force commander during Operation Desert Thunder. He has spent 27 months in Southwest Asia managing Army/joint communications. In 2004, he deployed to the central Baghdad area serving as the Iraq country lead with a mixed team of civilian and military engineers who designed coalition communication upgrades and infrastructure. He currently serves as the Electrical Engineering program director at the US Military Academy. His military awards include the Bronze Star and Meritorious Service medals.

Catastrophe Averted at Indianapolis Software Quality Conference!

by Kenneth Shafer

Although it was close to Halloween, on October 13 the mood was buoyant and the result was anything but unlucky at this year's *Quality Enrichment Conference: Quality Under Pressure,* sponsored by CIS-IEEE, and the International Council on Systems Engineering (INCOSE), and hosted by the Indianapolis Quality Assurance Association (IQAA).

Attendance this year at the northside campus of Indiana Wesleyan University far exceeded last year, reaching over two hundred participants. Attendees benefited from more than thirty presentations, tutorials, and keynote speeches in the area of systems engineering, software development, management, testing, and quality assurance. In the photo to the right, IQAA and CIS-IEEE member **Kenneth Shafer** emphasizes a point about Integration Testing.

Senior IEEE Computer Society member and former Director at Motorola, E.M. Bennatan, drew somber attention as he described in his keynote address how to untangle "catastrophic projects" and get them back on track with a two-week, tenstep plan of evaluation, re-scoping, revising, and resumption.





Matt Heusser, noted Agile methodologist, E-Zine blogger and Keynote speaker, drew laughter and applause as he moved his audience in his keynote from "So You're Doomed" to "Keys to Success" by using apt expressions such as "change prevention board" and "risk mitigation reserve." In the photo to the left, Matt Heusser describes one of the Classical Testing Mistakes.



In his presentation on *Quality for the Iraqi Warfighter*, INCOSE member **Michael Woitalla** underscored the criticality of quality issues and talks about the effects environmental conditions have on ruggedized warfare systems in the Iraqi desert (photo above and to the right).

CIS-IEEE presenters captured the attention at several other breakout sessions and are shown below. CIS-IEEE member **Will Kassebaum** demonstrates the effectiveness of the "Spiral Method" in software development. CIS-IEEE member **Michael Schoenfeld** describes how "Quality Gates" can improve software development. And Association for Software Testing (AST) and CIS-IEEE member **Kenneth Petty** urges his audience to avoid "Co-Dependent Behaviors" in their software testing effort.



Will Kassebaum



Michael Schoenfeld



Kenneth Petty

"This year's conference demonstrates the local demand for a venue that showcases technical presentations for a professional society audience," said Kenneth Shafer, local CIS-IEEE member and former IQAA Director of Certifications. "Given the right cooperation among related technical societies, such as IEEE, INCOSE, IQAA, and others, endeavors of this type can be very successful. This year's experience is definitely something that CIS-IEEE and its Computer Society and Education Society chapters can build upon," Kenneth added.

* * *

Membership Development News

As you probably know, the IEEE has become concerned about declining membership. The Central Indiana Section has lost about 2.5% of its membership since last year. Many of you have received an e-mail earlier this year outlining actions the IEEE is taking to address this concern. Here are two particular areas in which members can help the IEEE grow and keep its members:

 Promote the Member-Get-A-Member program. This program is available with incentives for finding new IEEE Members. You will get a \$5.00 IEEE credit voucher for every Member that you recruit. Make it a challenge within your Section to see who is the best at Membership Development. The reward is more than a credit voucher; it's a bigger organization with better connections into industry and community. These connections help to build the IEEE Network that supports our careers and the profession. More information on this program can be found at http://www.ieee.org/web/volunteers/membership_dev/mgm.html

Note that new members will pay part of the years due if they join this year.

• Student members: Upon graduation, many student members are lost to the organization due to changes in physical and e-addresses. After you graduate, please go to www.ieee.org and change your addresses so that new IEEE information can be sent to you. IEEE will also forward your copy of IEEE Spectrum and any society publications you receive. Thanks!

More information on IEEE Membership Drive will be available from the CIS-IEEE website soon. Also, the CIS-IEEE will issue notices toward the end of the year when membership renewals are due. This will be just a friendly reminder that all members must renew each year. Please feel free to contact me or any other member of the Executive Committee with any questions. Thanks for your support.

Earl Hill, Membership Development, Central Indiana Section IEEE, 317-726-1236, eshill@loma-consulting.com

* * *

Request for Volunteers (TISP Program)

We have 5 volunteers Brownsburg Challenger Center Open House. If there are any more volunteers, they are welcome to attend the event on Saturday, Nov. 11. If you are interested, contact Brad Snodgrass at bsnodgrass@ieee.org for more information.

Central Indiana Engineering Consultants' Network (CIECN)

Steering Committee: Earl Hill, John Kassebaum, Will Kassebaum, Duane Mattern, Richard Pfile, Brooks Reed, Ken Shafer

Past Meetings

Oct. 5th

Small Business Innovative Research" (SBIR) Round-Table Discussion Presenters: John Kassebaum and Will KassebaumStellar Wind Development, LLC

Future Meetings

Nov. 2nd

Tour of Indiana University Emerging Technology Center, (IUETC.org), hosted by Mark S. Long, President & CEO. The IUETC assists new start-up companies through the critical first years of existence, acting as a business incubator for life sciences, biotechnology and bioinformatics companies. The companies' business ventures must support health and life sciences technologies that will ultimately lead to economic gains and employment opportunities in Indiana.

* * *

Of Interest to IEEE Members that use the IEEE Healthcare Insurance

There are big changes coming to the IEEE Comprehensive Healthcare Insurance that should be of interest to those members that used this insurance program. For details, review the following two articles at:

http://www.ieee.org/web/membership/financial-advantage/fapnews/index.html. http://www.todaysengineer.org/2006/Oct/Medical plan.asp

* * *

Public Announcement

VoIP Workshop Planned For December 13, 14, and 15, 2006



IUPUI and Telemagen, LLC are planning a VoIP workshop Wed.-Fri. Dec. 13-15, on the IUPUI campus in Indianapolis, IN. The workshop will be a "bootcamp" for Voice over IP and will allow the participant to setup and configure an actual working VoIP system. Participants will learn the jargon of VoIP, how it works, the benefits of the technology, and how to create a

business plan to judge the value of a proposed VoIP project. The workshop will be held in an engineering laboratory on the IUPUI campus and parking will be provided. Cost is \$1075 and group, academic, and governmental discounts will be offered. A brochure is available online at the Telemagen.com website.

About the Instructor

The facilitator for this short course will be Steve Oschman, Managing Member of Telemagen, LLC. Telemagen, LLC is a telecom company dedicated to providing technology value to companies of all sizes. Mr. Oschman has over 20 years in the Telecom field and has specialized in the convergence of voice and data. He holds a Masters in Engineering from Purdue University and an MBA from Indiana University and was awarded Outstanding Associate Faculty at IUPUI in 2006.

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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

IHIFIndiana Health Industry Forumihif.orgINDSPEIndiana Society of Professional Engineersindspe.orgINDYASHRAEAmerican Society of Heating and Air conditioning Engineersindyashrae.orgNSBE-IAENational Society of Black Engineers - Indianapolis Alumni Extensionnsbe-iae.orgPIMCICProject Management Institute - Central Indiana Chapterpmicic.org

SAE Society of Automotive Engineers, Indianapolis http://www.saesections.org/indiana/ Scientech 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

Central Indiana IEEE Related Web Links

CIECN Central Indiana Engineering Consultants Network Indy-engineer.net
Student Sections Rose Hulman Institute of Technology http://www.rose-hulman.edu/Users/groups/IEEE/

Purdue University, West Lafayette purdueieee.org

Indiana University/Purdue University at Indianapolis iupuieee.org ???

2006 Meeting Calendar			
Date Wed. Nov. 1	Host CINLUG	Subject CINLUG Monthly meeting. Mike Huffman, Special Assistant to the Superintendent for Technology, Indiana Department of Education, The success of Open Source Software in Indiana schools.	Location Ritz Charles
Thur Nov. 2, 6:45pm	CIECN	Tour of IU Emerging Technology Center, registration required	IUETC
Mon. Nov. 6 noon	Scientech	Restoring New Orleans Municipal Wastewater Plant after Katrina, Ed Malone, Veolia Indianapolis Water Co.	Childrens' Museum
Tues. Nov. 7 Sat. Nov 11	CIS-IEEE CIS-IEEE	CIS-IEEE Annual Award Banquet Brownsburg Challenger Center Open House contact Brad Snodgrass at bsnodgrass@ieee.org.	Carmel, IN
Mon. Nov. 13	Scientech	Wings of Their Dreams: Purdue in Flight – John Norberg Purdue's central role in the history of flight & aerospace.	Childrens' Museum
Tues. Nov. 14	CIS-IEEE	ES/IAS Planning Committee - IPL Safety Room 6:30pm	IPL Safety Room 1101 Rive Road
Tues. Nov. 14	IBEN	Sit Down and Scale Up: Rapid Business Growth, Doug Dayhoff, President, MiddleCourt Holdings, Dennis Barket, Founder and President, Griffin Analytical	
Thurs, Friday, Nov. 16, 17	ACEC Indiana	Engineering Leadership Program	Hilton Garden Inn - Indianapolis, IN
Fri. Nov. 17	NSBE-IAE	General Body Meeting at IUPUI	Science & Tech. (SL) Bldg Rm 165
Mon. Nov. 20	ASM-Indy	Plant Tour - Goulding & Wood Pipe Organs Inc.	823 Massachusetts
Mon. Nov. 20	SAE	Six Sigma	
Tues. Nov. 28 Wed-Fri Dec. 13-15	ASME + AIAA IUPUI and Telemagen	ASME and AIAA Joint Meetings (see for details) VolP Workshop \$1075, discounts available.	IUPUI
Mon. Dec. 18	ASM-Indy	Sustaining Members' Night Speaker: Paul Gearing - Dynamic Flowform Corp.	
		2007 Meeting Calendar	
Mon. Jan. 22	ASM-Indy	Heat Treaters' Night Current Engine Materials in CART Racing	
Tues. Jan. 9	ASHRAE	Combined Heat & Power Systems - Fuel Cells, Microturbines, Absorption Chillers	Martin House
Tues. Feb. 13	ASHRAE	Webinar - Steve Tom, ALC, Energy Saving Control Strategies	Martin House
Feb. 18 - 25	all	National Engineers Week	
Tues April 10	ASHRAE	Purdue - Tour of Nanotechnology Facility	Purdue
Tues. May 8	ASHRAE	Progress of Lucas Oil Stadium / New Airport (possible tour)	tbd
June 3 - 7	ASMS	55th ASMS Conference on Mass Spectrometry	Indianapolis, IN
Check the Section web page for current information.			

Distribution: The Reporter is distributed to approximately 1900 IEEE members within the Central Indiana Section including student members and faculty of Purdue, IUPUI, Rose-Hulman and ITT Technical Institute. 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. Inquiries for complimentary subscriptions should be made to the Editor.