

# THE REPORTER

Journal of the Central-Indiana Section • IEEE

## ICES All-Engineering Networking Banquet

In conjunction with ASME and IEEE, the Indiana Council of Engineering Societies hosted a Networking Reception and Awards Banquet to benefit the Bridge to Engineering Scholarship on Friday, October 17th, 2008 in the Radisson Hotel at the Indianapolis Airport. This event provided a unique networking opportunity and forum for discussion of “Green” engineering and alternative energy technology in Indiana. A social hour and exhibit presentation preceded the dinner program. Guest speakers included:

**Jim Trueblood**

Vice President, High  
Horsepower Engineering  
Cummins, Inc.

**Jesse Kharbanda**

Executive Director,  
Hoosier Environmental  
Council

**Les Mac Taggart**

Senior Technical Director,  
Indy Racing League

The Bridge to Engineering Scholarship is intended to help offset the final year expenses and cost of attendance for a college junior enrolled in a math, science, or engineering program at an Indiana college. This 2008 award marked the first presentation of this award by the ICES.

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### SOME PICTURES FROM THE 2008 ICES ALL-ENGINEERING NETWORKING BANQUET







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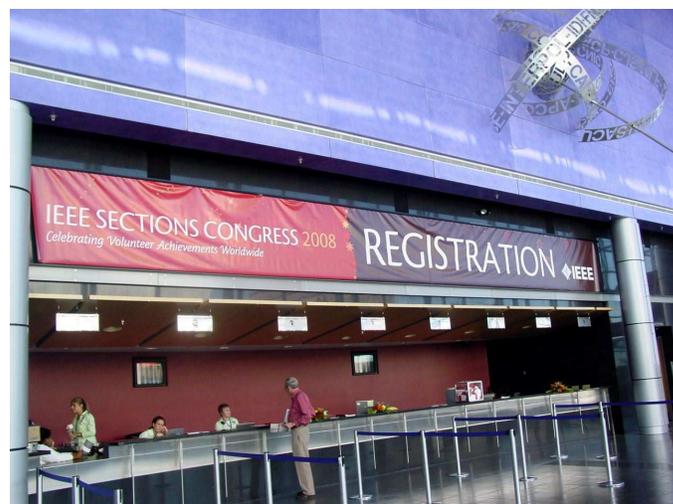
## IEEE Sections Congress

The IEEE Member and Geographic Activities (MGA) Board partnered with Region 7 and the Quebec Section in hosting Sections Congress 2008 in Quebec City, Quebec, Canada from September 19<sup>th</sup> to 22<sup>nd</sup>. This was the largest Sections Congress ever, including 1,072 attendees from 89 countries representing 293 Sections. Early feedback from the participants viewed Sections Congress as a tremendous success. MGA was overwhelmed by the enthusiasm and commitment to IEEE by the attendees.

The Congress provided a forum where the Section Chairs speak as the collective voice of IEEE to share and discuss their views for change. Final recommendations from the attendees were ranked and the top ten will be presented to the IEEE Board of Directors at its November meeting. The Board then assigns each recommendation to specific IEEE business units for action.

The IEEE Honors Ceremony was held on Saturday evening, resulting in the largest attendance ever for an Honors Ceremony. IEEE President Lewis M. Terman presented 22 awards at the ceremony, including the Medal of Honor to Dr. Gordon E. Moore, co-founder and chairman of the board, emeritus, of Intel Corporation.

Several members of CIS attended; here are two pictures from the event:



More information? <http://www.ieee.org/web/volunteers/sections-congress/2008/index.html>

## PES-IAS – Tour of I Power Energy Systems

By Earl Hill

On September 16, 2008, members of the PES-IAS toured the I Power facility in Anderson, IN. Thirty-eight members were in attendance. The tour was hosted by Mr. Terry Pahls, President of I Power.

I Power is a local Indiana startup, originally funded from the Flagship Enterprise Center in Anderson, that manufactures smaller frame reciprocating engines for power production (either directly for in-house use or for grid use). Currently, I Power produces 80 kW units, and has initiated proto-types for 20 kW and 365 kW units. These units are designed to burn a variety of fuels – natural gas (which can be from a pipe line, or directly from the earth (coal bed methane), or bio-gas, which can be either from landfills or from an agricultural digester (i.e. from animal or plant waste). I Power has sold units to a variety of hotels, schools and apartment buildings, plus agricultural facilities such as wineries.

The tour consisted of three elements. First, Mr. Pahls introduced the history of I Power, from its beginnings as a part of Delco. He also introduced the basic principles behind the engine, and how I Power has made significant improvements to the original engine. Mr. Pahls then lead a tour of the facility itself. The factory is well kept and a model of industrial organization. The I Power team has done an excellent job of implementing a number of organizational improvements as well.

The final section of the presentation was a talk by Dr. Steve Rovnyak, of IUPUI. Dr. Rovnyak spoke on implementing IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems. This is important to I Power, as many of its units will be used in a distributed generation mode. The standard is quite complicated, and Dr. Rovnyak's solutions are quite clever and thorough.

Please note that Dr. Rovnyak will be addressing the PES-IAS in a meeting on January 13, 2009. The PES-IAS wishes to thank Mr. Pahls for his kindness in hosting our meeting, and in addressing our members.

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## New IEEE Award Sponsored by Toyota Recognizes

### Environmental and Safety Technologies

The IEEE Foundation recently announced that Toyota Motor Corporation will sponsor a new IEEE award, the *IEEE Medal for Environmental and Safety Technologies*. This award will recognize outstanding accomplishments in the application of technology in the IEEE fields of interest that improve the environment and/or public safety.

Toyota donated US\$300,000 to support the awarding of the IEEE Medal to an individual recipient, or a team of recipients up to three in number, each year, for the years 2010 through 2019.

“One of Toyota Motor Corporation's core values has been to focus our research and development efforts on automotive environmental and safety technologies. This philosophy prompted us to work with IEEE, the world's largest technical professional association, to create the *Medal for Environmental and Safety Technologies* and recognize individuals and organizations that are making a difference, globally,” said Toyota Motor Corporation spokesperson. “Together with IEEE, we look forward to promoting this global movement on sustainability, and the successes achieved by each winner.”

Criteria considered for the award include: public benefits of the contribution; degree of improvement in important performance metrics; innovative design; development or application engineering; favorable influence of the contribution on technical professions. It is relevant to a wide community including power electronics, intelligent transportation systems, wireless communications, sensor networks control, control and automation, computing, and signal processing.

Each recipient of the *IEEE Medal for Environmental and Safety Technologies* will receive a gold medal, a bronze replica, a certificate and honorarium. In the event that a team up to three in number is selected, the honorarium will be equally divided.

“A truly joint effort, we are honored to partner with Toyota to bring this award to the global market as an opportunity to recognize outstanding contributions in environmental and safety technologies,” said Lew Terman, President, IEEE. “We hope the *IEEE Medal for Environmental and Safety Technologies* will inspire individuals and organizations to develop innovative technologies that will benefit humanity, globally.”

Toyota Motor Corporation acknowledges the cooperation and advice of Prof. Fumio Harashima, Prof. Hiroyuki Sakaki, and Prof. Toshio Fukuda in the establishment of this award. To learn more about this and other IEEE Awards, visit <http://www.ieee.org/awards>.

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### **Newly Elevated IEEE Fellows for 2009 - Central Indiana Section**

Congratulations to the following members:

**Rashid Bashir**

**David Ebert**

**Oleg Wasynczuk**

### **Newly Elevated Senior Members in 2008 - Central Indiana Section**

Congratulations to the following members:

**Yung-Hsiang Lu**

**Mark Keyse**

**Charles Hansen**

**Jianjian Song**

**Zuwei Lu**

**Timothy Sands**

**Earl Hill**

**Yingzi Du**

**Cristina Nita-Rotaru**

**Corey Bender**

## Power & Energy and Industry Applications Societies

### Autumn Short Course on “Green Energy Engineering”

by Earl Hill

In late October and early November, the PES/IAS held its annual short course at Indianapolis Power & Light’s Safety Room, at 1230 Morris Street, Indianapolis. The topic was Green Energy Engineering, which dealt with a variety of issues involving renewable energy generation. The course was held over a span of three weeks, to accommodate the various speakers involved. New for the PES-IAS, the syllabus included two speakers from the PES Distinguished Lecturers Program (DLP). These two speakers, plus the three local speakers, were all excellent.

The syllabus for the course was:

- **October 21<sup>st</sup>** – Professor Ron Turco, Purdue (who discussed new advances in renewable energy) and Mr. John Haselden, IPL (who discussed IPL’s initiatives in renewable energy).
- **October 28<sup>th</sup>** - Dr. Saifur Rahman, Virginia Tech – an IEEE distinguished scholar, who is well-known for his work on renewable energy, who provided an excellent overview of the different areas of renewable energy.
- **October 30<sup>th</sup>** - Mr. Joe Koepfinger, formerly of Duquesne Light – an IEEE distinguished scholar, who has been active for many years in IEEE Standards work. Mr. Koepfinger discussed the history of renewable generation, and some of the issues involved in connecting distributed sources. (A lot of renewable energy will also be distributed, as opposed to being produced at a central station.)
- **November 4<sup>th</sup>** - Mr. Bill Wylam, International Energy, who is a well known local entrepreneur, who spoke on developing new and improved battery technology. (Renewable energy is often variable, and therefore storage is a vital component of any renewable system.) The Wylam Laboratory at IUPUI is named for Mr. Wylam.

Thirty-two IEEE members attended the four lectures. The lecture series also included handouts for each of the four sets of speakers. Overall, each lecture was well received by the membership. The success of this effort will facilitate the use of the DLP in the future.

In another first, the attendees also received documentation for eight professional development hours (PDH) for using in meeting the continuing education hours the state of Indiana has mandated for extending the Professional Engineer license.

For any additional information on this course, please contact Mr. Earl Hill at [eshill@loma-consulting.com](mailto:eshill@loma-consulting.com).

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## Write an Essay – Win \$500 for your FRC Team

### Annual Essay Contest

The Central Indiana Section of the IEEE is inviting all Central Indiana FRC (FIRST Robotics Competition) Teams to submit their essays to earn a \$500 Sponsorship. Three Sponsorships will be awarded.

Central Indiana Section of the IEEE is the local organization supporting the nearly 2000 IEEE members in Central Indiana.

#### Eligibility for Sponsorship

FRC Teams must meet one of the following requirements:

Team's Headquarters must be located within the CIS geographical area

Team must have an Adult Mentor who is a CIS-IEEE Member

Teams may determine geographic eligibility by reviewing Article I, Section 2 of the CIS Bylaws at <http://www.cis-ieee.org/bylaws.asp>.

Teams may determine Adult Mentor eligibility by sending their Mentor's Name and IEEE Member Number to [bsnodgrass@ieee.org](mailto:bsnodgrass@ieee.org).

### **Essay Contest and Sponsorship Rules**

Teams must submit a short (one-page) essay describing at least one technology used in their robot, which is named for the inventor. (examples are: Archimedes' screw, Diesel engine, Fresnel lens, Schottky diode) Winning essays should include a brief background on the inventor and a detailed description of the use of this technology in the FRC robot.

Submissions must be in PDF format.

Only one entry per team is allowed.

The top three entries will be selected from all submissions. Each of the three winning teams will receive a \$500 Sponsorship from CIS-IEEE. The judges will determine the winning entry and the decision of the judges is final.

Winning Teams are required to display the CIS-IEEE logo at all competitions and demonstrations.

### **Deadline**

Entries must be submitted by Friday, February 20, 2009. All entries must be sent to [bsnodgrass@ieee.org](mailto:bsnodgrass@ieee.org). All submissions will receive confirmation that their essay was received and that they have met eligibility requirements.

Awards will be announced no later than Monday, March 2, 2009.

### **IEEE Resources for Students and Teachers**

<http://www.cis-ieee.org/>

<http://www.ieee.org/web/aboutus/home/index.html>

<http://en.wikipedia.org/wiki/IEEE>

<http://www.ieee-virtual-museum.org/index.php>

<http://www.ieee.org/web/education/home/index.html>

<http://www.ieee.org/web/education/preuniversity/tispt/index.html>

### **Questions**

Questions or requests for help with research can be sent to Brad Snodgrass at [bsnodgrass@ieee.org](mailto:bsnodgrass@ieee.org). Brad is an Adult Mentor for Team 829 at Warren Central and will not be judging the contest. Teams' questions and requests will **not** be shared with Contest Judges.

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## Employment Opportunity

### INDIANA UNIVERSITY PURDUE UNIVERSITY, INDIANAPOLIS

Purdue School of Engineering and Technology  
Department of Engineering Technology  
Position Announcement

Assistant Professor or Lecturer of Electrical and Computer Engineering Technology

Anticipated start date is January 2009.

#### **Responsibilities:**

An assistant professor will be responsible for development and execution of a research program in renewable energy; the department has an interest in renewable energy generation, control and distribution and the economic development of local and regional companies in this arena. Either assistant professor or lecturer will teach, develop and coordinate Electrical Engineering Technology courses in power distribution, industrial controls and renewable energy at both the undergraduate and graduate level.

#### **Qualifications:**

An earned doctorate in Electrical Engineering, Engineering Technology, or closely related field is required for a tenure track position; a master's degree in the same fields will meet the requirements for a lecturer position. Relevant work experience in alternative energy, power distribution (especially in North America), power generation, facilities management and/or industrial controls is necessary; at least three years of experience in North America is preferred. Successful candidates will possess excellent verbal and written communication skills, demonstrated ability to work effectively in a professional setting, and a strong commitment to teaching and scholarly activities. Candidates must be eligible to work in the United States and meet guidelines to receive federal funding.

#### **Applications:**

To apply, submit a letter of application, curriculum vita, statement of teaching and research interests, and three current references. Screening have begun and will continue until the position is filled.

Apply online at <https://www.et.iupui.edu/apply/index.asp?pos=00006265>

IUPUI is a growing urban campus with 30,000 students and 200 degree programs. The Purdue School of Engineering and Technology is one of 22 schools at IUPUI, and awards Purdue University degrees.

IUPUI is an Equal Opportunity/Affirmative Action Employer, M/F/D

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## 2009 – Power & Energy/Industry Applications Societies Activities

The PES/IAS plans a full schedule of meetings and activities for 2009. As in past years, we plan two short courses – each of which will provide up to 8 CEU/PDH for those looking for continuing education to renew the PE licenses. The first course will cover fundamentals of Electric System Design, and will be taught by Professor Fred Brockhurst of Rose-Hulman Institute of Technology. Fred has taught a number of courses in the past, including, most recently, “Arc Flash”. The second course has not been organized yet, but will likely examine the future role of coal in the nation’s energy mix. Coal currently provides about 50% of US electric supply (but 95% of Indiana’s), but this source faces a number of issues in future – greenhouse gases, carbon sequestration, mercury reduction, and others. This course will address those issues.

We also plan several other interesting activities. The following is a list of confirmed activities for the spring of 2009. Additional activities include possible site visits (such as the Benton County Wind Farm) and more speakers in the fall. Please check our website [www.cis-ieee.org](http://www.cis-ieee.org) for more information.

**2009 PES / IAS Meetings:**

January 13<sup>th</sup> - **Synchronized Phasor Measurements for Wide Area Monitoring and Control in Electric Power Systems.** Presenters: Steven Rovnyak and Qun Gao, Indiana University-Purdue University Indianapolis. 6:30 pm, Indianapolis Power & Light Safety Room, 1230 Morris Street, Indianapolis, IN

Feb 10<sup>th</sup> – **Smart Relays – Installation and Arc Flash.** Presenter; TBD, Basler Electric. 6:30 pm, Indianapolis Power & Light Safety Room, 1230 Morris Street, Indianapolis, IN

February 24<sup>th</sup> - March 17<sup>th</sup> – **Short Course: Fundamentals of Electric System Design.** Presenter: Dr. Fred Brockhurst, Rose-Hulman (emeritus). Held each Tuesday evening at 6:30 pm, Indianapolis Power & Light Safety Room, 1230 Morris Street, Indianapolis, IN. *See registration page for pricing details.*

April 14<sup>th</sup> - **CIS-IEEE and PES-IAS Awards Banquet.** Organizer: Dr. Tim Skvarenina, Purdue University. 6:30 pm, Indianapolis Power & Light Safety Room, 1230 Morris Street, Indianapolis, IN

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## CIS-IEEE Announces Grants for Teachers

### Teachers Reimbursed for up to \$100 of Classroom Expenses

The Central Indiana Section of the IEEE is encouraging area teachers to utilize the large selection of free lesson plans available through the Teacher In-Service Program. (TISP) Lessons focus on Science, Technology, Engineering, and Math and are designed for classroom presentation for under \$100.

Central Indiana Section (CIS) of the IEEE is the local organization supporting the nearly 2000 IEEE members in central Indiana.

#### **About the Teacher In-Service Program**

The Teacher In-Service Program (TISP) features IEEE Section volunteers developing and presenting technologically oriented subject matter to local pre-university educators in an in-service or professional development setting. TISP allows IEEE volunteers to share their technical expertise and to demonstrate the application of engineering concepts to support the teaching and learning of science, mathematics and technology disciplines.

To schedule a TISP Presentation for your school, contact Brad Snodgrass at [bsnodgrass@ieee.org](mailto:bsnodgrass@ieee.org).

#### **Eligibility for Teacher Grants**

- School must be located within the CIS geographical area
- A lesson from [www.tryengineering.org](http://www.tryengineering.org) must be chosen
- The lesson must be presented by the classroom teacher. (Not by an IEEE Volunteer)

Teachers may determine geographic eligibility by reviewing Article I, Section 2 of the CIS Bylaws at:

<http://www.cis-ieee.org/bylaws.asp>

#### **Applying for a Grant**

Central Indiana Section will reimburse costs for presentation of an eligible lesson up to the \$100 limit. Teachers should first get a pre-approval for the reimbursement by supplying the information requested below. Pre-approved lessons will be given an address for submittal of related lesson expenses, up to the \$100 limit.

To apply, send an email with the following information to Brad Snodgrass at [bsnodgrass@ieee.org](mailto:bsnodgrass@ieee.org)

- Name and address of the School
- Teacher sponsoring the lesson
- Grade level(s) targeted for the lesson
- Name of person who will be presenting the lesson
- Date when lesson will be presented
- Name of the lesson that will be presented.

**IEEE Resources for Students and Teachers**

<http://www.cis-ieee.org/>

<http://www.ieee.org/web/aboutus/home/index.html>

<http://www.ieee-virtual-museum.org/index.php>

<http://www.ieee.org/web/education/home/index.html>

<http://www.ieee.org/web/education/preuniversity/tispt/index.html>

**Questions**

Send questions or requests to Brad Snodgrass at [bsnodgrass@ieee.org](mailto:bsnodgrass@ieee.org). Brad coordinates Pre-College Activities for the Central Indiana Section of IEEE.

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**CIS – OFFICERS FOR 2009**

**Congratulations to the new officers of the Central Indiana Section of IEEE for 2009.**

<b>DIRECTOR</b>	Will Kassebaum
<b>DIRECTOR</b>	Niusha Rostamkolai
<b>CHAIR</b>	Steve Shen
<b>VICE-CHAIR</b>	Phil Walter
<b>TREASURER</b>	Carlotta Berry
<b>SECRETARY</b>	Karl Huehne

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*2009 Meeting Calendar*

<b>Date</b>	<b>Host</b>	<b>Subject</b>	<b>Location</b>
January 13, 2009 6:30 pm	PES/IAS	<b>Synchronized Phasor Measurements for Wide Area Monitoring and Control in Electric Power Systems</b>	IPL/Indianapolis
January 22, 2009 6:00 pm	CIS	<b>Executive Committee Meeting</b>	IUPUI, ET 209 Indianapolis
January 23-25, 2009	Region 4	<b>Region 4 Annual Meeting</b>	Detroit
February 10, 2009	PES/IAS	<b>Smart Relays – Installation and Arc Flash</b>	IPL/Indianapolis
February 14, 2009	CIS	<b>E-Week @ Children's Museum</b>	Indianapolis
February 19, 2009 6:00 pm	CIS	<b>Executive Committee Meeting</b>	IUPUI, ET 209 Indianapolis
February 21, 2009	CIS	<b>RFID Short Course</b>	IUPUI Indianapolis
Feb. 24 – Mar. 17 6:30 pm	PES/IAS	<b>Short Course: Fundamentals of Electric System Design</b>	IPL/Indianapolis
Feb. 26 – Mar. 1	IEEE-USA	<b>IEEE-USA Annual Meeting</b>	Salt Lake City
March 26, 2009 6:00 pm	CIS	<b>Executive Committee Meeting</b>	IUPUI, ET 209 Indianapolis
April 14, 2009 6:30 pm	PES/IAS/CIS	<b>Awards Banquet</b>	IPL/Indianapolis
April 23, 2009 6:00 pm	CIS	<b>Executive Committee Meeting</b>	IUPUI, ET 209 Indianapolis

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

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**Central Indiana Section Active Volunteers  
(effective January 1, 2009)**

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eshill@loma-consulting.com

**Computer Society**  
OPEN

**Signal Processing Society** (765) 494-5916  
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**Constitution and Bylaws**  
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OPEN

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**Purdue University Student Branch**  
Tom Talavage tmt@purdue.edu

**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	<a href="http://www.acecindiana.org">American Council of Engineering Companies, Indiana</a>	acecindiana.org
ASCE	<a href="http://sections.asce.org/indiana">American Society of Civil Engineers</a>	sections.asce.org/indiana
ASME	<a href="http://sections.asme.org/central_indiana/">American Society of Mechanical Engineers</a>	http://sections.asme.org/central_indiana/
ASM-INDY	<a href="http://asm-indy.org">American Society for Metals - Indianapolis</a>	asm-indy.org
CINLUG	<a href="http://cinlug.org">Central Indiana Linux Users Group</a>	cinlug.org
IBEN	<a href="http://indianabionetwork.org">Indiana Biomedical Entrepreneur Network</a>	indianabionetwork.org
ICES	<a href="http://in-ces.org">Indiana Council of Engineering Societies</a>	in-ces.org
IHIF	<a href="http://ihif.org">Indiana Health Industry Forum</a>	ihif.org
INCOSE	<a href="http://www.incose.org">International Council on Systems Engineering</a>	www.incose.org
INDSPE	<a href="http://indspe.org">Indiana Society of Professional Engineers</a>	indspe.org
INDYASHRAE	<a href="http://indyashrae.org">American Society of Heating, Refrigeration, and Air Conditioning Engineers</a>	indyashrae.org
NSBE-IAE	<a href="http://nsbe-iae.org">National Society of Black Engineers - Indianapolis Alumni Extension</a>	nsbe-iae.org
PIMCIC	<a href="http://pmicic.org">Project Management Institute - Central Indiana Chapter</a>	pmicic.org
SAE	<a href="http://www.saesections.org/indiana/">Society of Automotive Engineers, Indianapolis</a>	http://www.saesections.org/indiana/
Sciencetech	<a href="http://sciencetechclub.org">Sciencetech Club in Indianapolis,</a>	sciencetechclub.org
SIM	<a href="http://simnet.org">Indianapolis Chapter of Society for Information Management (SIM)</a>	SimNet.org
SWE-CI	<a href="http://swe-ci.com">Society of Women Engineers - Central Indiana Section</a>	swe-ci.com
Techpoint	<a href="http://techpoint.org">A diverse collection of technology-based Indiana industries.</a>	Techpoint.org