

# THE REPORTER

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

## CIS-IEEE and the TRIBE WIN!



What a glorious sunny day for the annual Indianapolis Indians baseball game at Victory Field on Sunday August 20. Over 140 CIS members and their families won a memory by attending the game. The [Indians won in dramatic](#) fashion in the bottom of the ninth. The Indians have now won four consecutive games that the CIS has attended. Photo by Will Kassebaum. More photos on page 3.

### Upcoming IEEE Events

Thr Sep 28	CIS-IEEE Excomm monthly meeting.
Thr Oct 5	CIECN Meeting on Small Business Innovative Research Grants
Fri Oct 6	IEEE Financial Advantage Program - Life Line Ultrasonic Stroke Screening
Sat Oct. 21	Leadership workshop with IEEE Senior member Lt. Colonel Robert Sadowski, Ph.D.
Thr Nov 2	CIECN Tour of Indiana University's Emerging Technology Center (IUETC)
Tue Nov 7	CIS-IEEE Annual Awards Banquet with IEEE President Leah H. Jamison

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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 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 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.



CIS-IEEE and the TRIBE WIN! (cont'd.)

The CIS will have a baseball outing again next year in August and we hope to see everyone there. The photos were taken during this year's game. Top left: the picnic area, Lower left: IEEE officers Alan Stillerman and Earl Hill model their IEEE T-shirts at Victory Field. Top and lower right, sun and shade split the seating sections. Photos by Will Kassebaum.



### ITT Student Branch Hosts August ExComm Meeting

The Executive Committee would like to thank Mohammed Boudaia and the members of the ITT Student Branch for hosting the August ExComm Meeting. The meeting, held at the [Indianapolis campus of ITT](#), on the northwest side of Indianapolis, included time for interaction between the ITT students and CIS members. The meeting also presented new opportunities for hosting CIS events and meetings at ITT.

If you are interested in hosting an IEEE ExComm meeting, society meeting, or special event, please contact an Executive Committee member. Student branches are encouraged to contact CIS Student Affairs ([bsnodgrass@ieee.org](mailto:bsnodgrass@ieee.org)) to schedule members for your Student Branch meetings.

## Applicants for Senior Member Elevation

What has become an annual "get together" for members who are interested in upgrading their membership to the level of senior member was held in the Engineering Technology building on the IUPUI campus on July 15th of this year from 1 - 5 PM. Candidates came to meet and request support from members who already have been elevated to senior member level or above. Each applicant must have references from at least three of these individuals to complete their application.

The Central Indiana Section sets up the "senior member rodeo", to bring together volunteers who can provide references for the potential new senior members. The volunteers on hand to assist in this years application process were: Dan Allison, Jiang-Yu Zheng, Yuhui Shi, Pingnan Shi, Tom Weber, Pat Milligan, Brad Snodgras, Tom Bishop, Nivad Navid, Will Kassebaum, Bob Begeman, John Kassebaum, Tom Bonsett and Sara Koskie. (photograph provided by Will Kassebaum).



The meeting was held in a computer lab so that the application could be completed on-line with both applicants and references on hand to provide the required information. Interest in senior membership was still evident this year with about ten new applicants seeking support.

For anyone interest in applying for senior member status the process can be started at any time and the Section is here to support you. You can start by reviewing the qualifications on the IEEE website at [www.ieee.org](http://www.ieee.org). If you need help finding references, then contact any of the local Section officers to put you in touch with senior members who have agreed to review applicants and serve as potential references. IEEE reviews the applications about once a month.

A big "thanks" to all the senior members you came to the event and to the Engineering Technology Department, who provided the facilities and helped set up the infrastructure needed to make this event a success.

We describe this as an event to assist members in completing applications for senior member status but it's also becoming a great networking opportunity. I enjoyed listening to and taking part in several conversations about acquaintances, work experiences and the past, present and future of engineering in our local community. This, like many of our events is a great opportunity to expand that professional network that we all rely on as practicing engineers. If you haven't already, think about joining us to see what you're missing.

Tom Bishop, Secretary

CIS ExComm 2006



paid advertisement

## Eliminate the Guesswork!

**\*Gain knowledge in all EMC design aspects.**

**\*Put what you learn to immediate use.**



Don Sweeney & Roger Swanberg  
leading a workshop

To register call Carol at  
847-537-6400 or email her  
at [egorowski@dlsemc.com](mailto:egorowski@dlsemc.com).  
For more information click  
on [www.dlsemc.com](http://www.dlsemc.com).



Tired of taking classes that don't give you real world applications and hands-on opportunities to use what you learn?

Here's what students have said about DLS's new EMC seminar/workshop:

"Best program I've seen. Software provided is worth the price of the seminar."  
Scott D.

"This course would be helpful for any design engineer." Shane S.

"Good information, presented well, extremely relevant." Bryan P.

"It satisfied my requirements - practical application & problem solving." Jack R.

This seminar/workshop is taught by EMC engineers with 75 years combined experience in real world engineering. Spend three days learning EMC requirements and design techniques and a fourth day designing a real life product. Take home the computer program designed by the instructors. As an added extra value with no additional charge, apply what you have learned in an optional 45-minute design review of your own product following the workshop.

**EMC Practical Applications  
Seminar/Workshop  
Northbrook, Illinois  
October 19-20 & 23-24, 2006**

**\$300 discount if you  
register by Sept. 19th.**

## Central Indiana Section Annual Awards Banquet

Tuesday Nov. 7, 2006 at the [Ritz Charles](#)

It's that time of year again. The hot, muggy Indiana summer, Labor Day; baseball, and just having fun. But it is also the time to start thinking about whom you would nominate for an award. Do you have any one in mind who deserves to receive an award? Nominations are due September 30. The Central Indiana Section has three awards that are presented at the annual Awards Banquet: Engineer of the Year, Member of the Year, and new Senior Member. This years banquet will be at the Ritz Charles on November 7, 2006 and IEEE President-Elect Dr. Leah Jamieson is the Keynote Speaker.

The Engineer of the Year award is based on contributions in technical areas, patents, and designs. The Member of the Year award is based on a members service contributions; for example: holding an officers position in the section; leading a project or planning an event that benefited the section, as well as other community projects that are not specifically IEEE related. Engineer and Member of the Year are nominated award, but you can nominate yourself. Those members who have achieved Senior Member status in the last year (November 2005 – October 2006) will be recognized at the banquet and will be presented with the Senior Member Pin.

Nominations for Engineer of the Year and Member of the Year must be submitted/postmarked no later than 30 September 2006. The submission can be in electronic format to [astiller@ieee.org](mailto:astiller@ieee.org) or sent by postal mail to CIS-IEEE Awards Committee, c/o Alan Stillerman, Awards Chairman, 11213 Stratford Dr. N., Fishers, IN, 46038. More information can be found at <http://www.cis-ieee.org/awards>.

Alan Stillerman, Awards Chairman

**CIS-IEEE PACE PRESENTS****Leadership Development****Speaker: Lt. Col. ROBERT W. SADOWSKI, Ph.D.****Sat. Oct 21 8 am - 5 pm at  
Room ET202 at IUPUI, Indianapolis, IN**

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 US Military Academy and received his M.S. and Ph.D. in electrical engineering from Stanford University as a Hertz Fellow. He has 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.

LTC 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.

**MILITARY DECORATIONS, CAMPAIGN MEDALS, AND TABS**

Bronze Star	Armed Forces Expeditionary Medal
Meritorious Service Medal with OLC	Iraq Campaign Medal
Joint Serve Commendation Medal with OLC	GWOT Expeditionary Medal
Army Commendation Medal with 3 OLC	GWOT Service Medal
Joint Meritorious Unit Award with OLC	Ranger Tab
National Defense Service Medal with Bronze Star	Senior Parachutist

**Agenda**

8:00 - 9:00 am	Registration
9:00 - 10:00 am	Reflections on Leadership
11:00 - 12:00 pm	Team Building and Intro to Personality Typing
12:00 - 1:00 pm	Lunch
1:00 - 2:00 pm	Group Exercises, Problems Solving, and Personality Types
2:00 - 3:00 pm	Performance Counseling
3:00 - 4:00 pm	Organizing an Effective Meeting

Cost: IEEE Member \$55	Non-IEEE Member \$95
Student Member or unemployed \$25	Student Non-Member \$45

Parking is not free and may be limited.

For nearby IUPUI Parking, visit <http://www.iupui.edu/misc/parkingmap.htm>

For more information or to register go to: <http://www.cis-ieee.org/event.asp?eventid=pace0906>

press release

## New Approach to EMC Learning

Textbook teaching has its place in learning EMC fundamentals. But real-life experience relating these fundamentals to actual situations is essential. Donald L. Sweeney and Roger Swanberg, with over 75 combined years of experience in the field of EMC, now bring these fundamentals to life through hands-on, practical application to real life products.

*EMC Practical Applications Seminar/Workshop*  
 October 19-20 & 23-24, 2006.  
 Hilton Hotel, Northbrook, IL

To register call Carol at 847-537-6400 or email her at [cgorowski@dlsemc.com](mailto:cgorowski@dlsemc.com). For more information visit [www.dlsemc.com/class301.htm](http://www.dlsemc.com/class301.htm). If you cannot attend this class, the next one will be April 2007



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## IEEE's E.M. Bennatan Headlines October 13 Software Quality Conference

Senior IEEE Computer Society member E.M. Bennatan headlines the Indianapolis Quality Assurance Association (IQAA) October 13, 2006 *Quality Enrichment Conference* with his keynote presentation *Catastrophic Disentanglement: Getting Software Projects Back on Track*. This year's conference is co-sponsored by CIS-IEEE and also the Crossroads of America Chapter of the International Council on Systems Engineering (COA-INCOSE).

E.M. Bennatan is former senior director at Motorola, Inc., and is a frequent lecturer and speaker on software project management. He is the author of *Catastrophe Disentanglement* (Addison Wesley, 2006) and *On Time Within Budget: Software Project Management Practices and Techniques* (Wiley, 2000). As well as being a Senior Member of IEEE Computer Society, he is also a member of the Association for Computing Machinery (ACM), and a senior consultant to the Boston Cutter Consortium.

Joining Bennatan will be two other keynote speakers keeping with the full-day conference Friday the 13<sup>th</sup> theme of *Quality Under Pressure*. Noted e-zine columnist and speaker at last year's conference Matthew Heusser will be speaking on *So You're Doomed – Practical Ways to Revive Your Project*, and noted quality author Dr. Magdy Hanna, President of the International Institute for Software Testing (IIST), will be speaking on *Use Cases from a Testing Perspective*.



Software Quality Conference (cont'd.)

In addition to the three keynotes, there will be nine break-out tracks covering software development / management, quality control and testing, and quality assurance processes for both traditional and regulated / engineering enterprises, including a number of tutorials. INCOSE will be making a number of presentations as well, including *Fault Mode Effects Analysis*, *Software Patterns in Development*, *Quality under Battlefield Conditions*. CIS-IEEE members Will Kassebaum and Earl Hill will be speaking on *Concurrent Versioning Systems (CVS)* and *Computerized Maintenance Management Systems (CMMS)* respectively.

The full-day conference on October 13 is \$110 and is preceded by an optional, free day of quality tutorials on Thursday, October 12, courtesy of IIST.

Registration information is available at <http://www.iqaa.org>. A full conference agenda will be sent shortly to all CIS-IEEE members.

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## Power Engineering Society / Industrial Applications Society News

The PES/IAS Planning committee met on August 30, 2006 to discuss activities for the Societies in late 2006 and 2007. In attendance were the following:

Dick Hildreth, Jerry Hohn, Gary Rhodes, Gerry Fenner, Mike Darnell, and Earl Hill.

The group discussed a number of possible short courses and tours. The key and most important meeting that needs to be held is an "all hands" meeting of the Societies. While the Societies are not in crises, activity levels and attendance for meeting has declined over the last few years. The best means to rejuvenate the Societies is to obtain more input from the membership.

As a result, the PES/IAS is asking all members of each Society to attend a meeting to be held on October 24 at the IPL Safety Room, 1101 River Avenue, Indianapolis, at 6:30PM. Dinner (such as pizza or sandwiches) will be provided. The officers and planning committee will discuss actions taken to date, but are eagerly seeking input from the membership. This will be the most important meeting of the year.

In terms of possible activities, the Planning Committee is considering the following:

- Tours of the CSX (railroad) diesel maintenance facility
- Tour of the CSX control center
- Tour of a local Ethanol plant
- Midwest ISO Speaker
- Tour of the Purdue nuclear reactor
- Speaker on Wind Power project in Benton County
- Tour of IGCC facility in Terre Haute

There will be no short course this fall, but a course on Predictive Maintenance for electrical equipment has been proposed for the spring. If any members of either Society have any suggestions for meetings or tours, please forward them to Dick Hildreth at [dhildreth@cityofanderson.com](mailto:dhildreth@cityofanderson.com). We look forward to seeing all the Society members on October 24!



## Central Indiana Section “Launches” TISP Program

article and photos by Brad Snodgrass



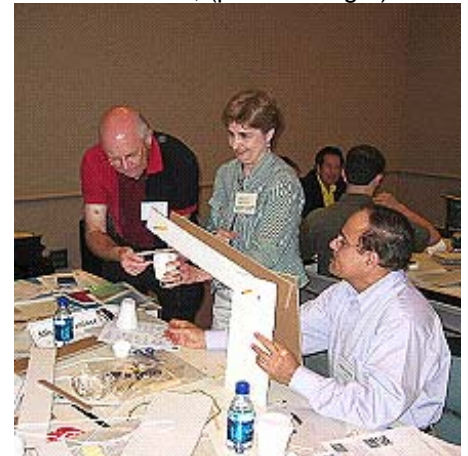
On June 16-17, the Educational Activities Board (EAB) and Central Indiana Section hosted a Teacher In-Service Program (TISP) training workshop for members and teachers of Region 4. The event, held at University Place on the IUPUI Campus, introduced the EAB's Teacher In-Service Program initiative.

This program encourages IEEE volunteers to work with their local schools and school systems to increase the level of technological literacy of local pre-university educators and students.

The seminar's goal was to train Region 4 volunteers as “TISP Champions” who will develop collaborations with their local pre-university community to promote applied inquiry-based learning. Invited teachers from the Brownsburg and Indianapolis area provided an atmosphere of a real TISP, while also introducing IEEE to local school systems.



The two-day seminar provided detailed information on the background and goals of the TISP initiative, but was also extremely entertaining. Teachers were teamed with IEEE volunteers to complete IEEE Lesson Plans for “Design and Build a Better Candy Bag” (photos on left) and “Build Your Own Robot Arm”, (photo on right).



Each lesson plan demonstration was followed by a discussion session that reviewed the Educational Standards covered by each lesson and various ways to incorporate a lesson into the classroom. IEEE has developed and published more than a dozen lesson plans, which are available at the IEEE Web Site or from [www.TryEngineering.org](http://www.TryEngineering.org).

Central Indiana Section volunteers participating in the seminar included Brad Snodgrass, Ken Reid, Bob Evanich, Wei Wang, Samuel White, Yaobin Chen, Thomas Bishop, Terry Frierson, Bob Adams, Karl Huehne, Daniel Leaird, Danny Lambert, Pingnan Shi, and Jennifer Morrison.

Teacher attendees included Tony Suba, (Ben Davis) Elaine Spector, (Brownsburg) Randall Decker, (Warren Central) Christine Floyd, (Brownsburg) Doris Ann Brewer, (Washington Township) Mary Patterson, (Brownsburg) Diane Hopper, (Brownsburg) and Ronald Rodgers. (Brownsburg)

**Thank you to all of these volunteers who will become the CIS TISP Champions!!**

Through networking opportunities with teachers attending the seminar, CIS is currently developing In-Service Programs with Warren Township, Washington Township, Brownsburg Challenger Center, Hamilton Southeastern, Indiana Association of Career and Technical Teachers, and Tippecanoe School Corporation.

Three In-Service Programs have already been presented at the Brownsburg Challenger Center. For these programs, the Candy Bag lesson plan was modified as a Mission Bag, (see photos below). Mission Bags were developed for the Moon Mission at the Challenger Center as a way to bring back Moon rocks.



In June the program reached 16 teachers. Two more programs in August reached an additional 40 teachers and administrators. CIS will also be participating in the Brownsburg Challenger Center Open House in November. The relationship with the Brownsburg Challenger Center will provide opportunities for two to five TISP programs per year.

In the last four years, IEEE volunteers have developed more than a dozen lesson plans and presented more than 30 professional development (or "in-service") programs to over 675 pre-university educators in the United States and South Africa. By placing IEEE volunteers in contact with teachers, the TISP initiative can reach far more students and classrooms than if volunteers were placed directly into classrooms. One TISP program, supported by one or two IEEE volunteers, reaching as few as 15 teachers, can have an impact on 15 to 50 classrooms.

More information on the IEEE Region 4 Teacher In-Service Program Training Workshop can be found at <http://www.ieee.org/web/education/preuniversity/tispindy.html>. To learn more about the CIS TISP initiative, contact Brad Snodgrass at [bsnodgrass@ieee.org](mailto:bsnodgrass@ieee.org). Please join the CIS TISP Volunteers Yahoo Group and share your TISP successes. See the Yahoo Group at [http://groups.yahoo.com/group/cis\\_tisp\\_vols](http://groups.yahoo.com/group/cis_tisp_vols). Contact Brad for a membership invitation.

**Thank you for making the CIS TISP Initiative an immediate success.**

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## **Central Indiana Engineering Consultants' Network (CIECN)**

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

### **Future Meetings**

- Oct. 5<sup>th</sup> Small Business Innovative Research Grants and Funding. Will and John Kassebaum will chair a discussion about the SBIR programs and strategies for winning an SBIR contract.
- Nov. 2<sup>nd</sup> 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.



**Past Meetings**

Aug. 3<sup>rd</sup> CIECN Meeting on Cash Flow Planning

The CIECN Meeting on Thursday July 6<sup>th</sup> at IUPUI was as a roundtable discussion on cash flow planning for small businesses. We were joined by Ed Witulski and Steve Farmer. Ed is a Small Business Relationship Manager from Chase Bank and Steve represented ADP small business. Ed and Steve work in cooperation with a number of small businesses. The provided brochures on the services provided by Chase Bank and ADP.



June 1<sup>st</sup> CIECN Reorganization - with a dwindling attendance during the summer months, CIECN took some time to regroup and make plans for the next year. A proposed list of meeting topics and presenters was made and assignments were made to plan specific meetings. A planning committee was formed consisting of John and Will Kassebaum, Rich Pfile, Ken Shafer, Brooks Reed, Earl Hill and Duane Mattern. Anyone is invited to join. See <http://www.indy-engineer.net> for contact information.

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## 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](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](http://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](mailto:eshill@loma-consulting.com)





## Central Indiana Section Selects IEEE Presidents' Scholarship Winner at 2006 Intel International Science and Engineering Fair in Indianapolis

Central Indiana Section was honored to select the 2006 Presidents' Scholarship winner at the 57th Intel International Science and Engineering Fair, held in Indianapolis this past May. The Intel ISEF is the world's largest pre-college science competition and the world's only science project competition for students in the ninth through twelfth grades. The Intel ISEF brings together students, teachers, corporate executives, and government officials from around the world. Students compete for over \$3 million in scholarships, tuition grants, scientific equipment and scientific trips.

The IEEE Presidents' Scholarship, the largest pre-university scholarship offered by the IEEE, recognizes a deserving student for an outstanding project that demonstrates an understanding of electrical engineering, electronics engineering, computer science, or other IEEE fields of interest. Administered by IEEE Educational Activities, with assistance from IEEE volunteers who serve as the judges during the ISEF, this scholarship includes US\$10,000 payable over four years, complimentary IEEE Student and Student Society memberships, a framed certificate, and an engraved plaque. For more information on the Presidents' Scholarship, visit

<http://www.ieee.org/web/education/preuniversity/scholarship>.

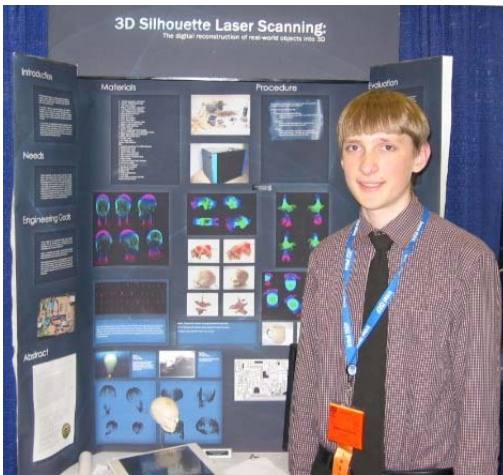


Brad Snodgrass served as the Lead Judge of a team of IEEE volunteers that included Bill Chown, (from Beaverton, OR) Harjit S. Ahluwalia, (who will serve as Lead Judge at the 2007 Fair in Albuquerque, NM) Kevin Sosbe, Peter M Boerger, Pingnan Shi, Renu Tripathi, Thomas Bishop, William Kassebaum, Mark Budnik, Branislav Kisacanin, James Catt, Digaunto Chatterjee, Sarah Koskie, Wei Wang, Dennis Groth, James Schenk, Philip Oliver, Thomas Turlinger, and Karl Huehne. Other CIS members volunteered as judges for the Grand Awards, which recognize the overall winners of the Fair.

**Thanks to all those who volunteered their time to this event!!**

This year's winner, high school sophomore Brandon Lee Reavis, presented "3-D Silhouette Laser Scanning: A Digital Reconstruction of Real-World Objects Into Point Clouds." IEEE President-Elect Leah Jamieson presented Reavis with the 2006 IEEE Presidents' Scholarship.





Reavis' device scans an object and transfers it into a computer as a 3-D image. Such a 3-D laser scan can be used for numerous purposes, such as inputting the shape of a sculpture into a computer for analysis or recording details of delicate archeological remains. It took Reavis, a student at Cody High School in Wyoming, almost a year to construct his device, he says, with virtually little guidance from teachers or technical professionals. He designed his scanner to outperform existing 3-D scanners in two ways: to capture more details of an object's contour and to cost less to build. Typical 3-D scanners on the market sell for more than \$10 000, while his model can be put together for about \$400, he notes. "I knew the project would allow me to learn more about software and electrical engineering," he says. "I already knew about silhouette scanning, but I wanted to find a way to do it more effectively."

Although Reavis says he is happy with his scanner, he plans to build a different model for next year's competition. He says he will mathematically configure the calibration for the camera variables so they'll automatically adjust, as opposed to having to manipulate them. Reconfiguring the calibrations will allow objects to scan more clearly, he says. And to lighten his device's weight, Reavis plans to use a serial port as opposed to a parallel port, an aspect of his design that also inconvenienced him when he was trying to find a computer to use with his scanner at the science fair. He also plans to slightly angle the lasers in relation to the camera-which, he says, will help reveal more of the subject's contours and cavities. The son of a product safety engineer, Reavis says he hopes to work in either robotics or computer engineering. He has not chosen which university he will attend.

Finalists for the 2007 Intel International Science and Engineering Fair will bring their cutting-edge projects to the Albuquerque Convention Center on May 13-19, 2007. For more information on the 2007 Intel ISEF, visit <http://www.intelisef2007.org>.

Article by Brad Snodgrass

This article contains excerpts from the July 2006 "The Institute"

(<http://www.theinstitute.ieee.org/portal/pages/tionline/legacy/inst2006/jul06/npres.html>)

and information taken from the Indianapolis ISEF, (<http://www.intelisef2006.org/>), Science Services, (<http://www.sciserv.org/isef/>) and Intel (<http://www.intel.com/education/isef/index.htm>) web sites.

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### Central Indiana Engineering Web Links

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

## Central Indiana IEEE Related Web Links

CIECN	<a href="#">Central Indiana Engineering Consultants Network</a>	<a href="#">Indy-engineer.net</a>
Student Sections	<a href="#">Rose Hulman Institute of Technology</a>	<a href="http://www.rose-hulman.edu/Users/groups/IEEE/">http://www.rose-hulman.edu/Users/groups/IEEE/</a>
	<a href="#">Purdue University, West Lafayette</a>	<a href="#">purdueieee.org</a>
	<a href="#">Indiana University/Purdue University at Indianapolis</a>	<a href="#">iupuieee.org</a>

## 2006 Meeting Calendar

Date	Host	Subject	Location
Thr Sept 7. 6:45pm	CIECN	Small Business Innovative Research, Solicitations, Proposals, Grants and Funding	tbd
Fri. Sept 8	NSBE-IAE	<a href="#">General Body Meeting</a>	IUPUI SL 165
Mon. Sept 11 12 noon (lunch)	ScienTech	<a href="#">21st Century Dentistry</a> , Dr. Randy Shoup	Children's Museum
Tue. Sept 12 5 pm	IBEN	<a href="#">The State of Entrepreneurship in Indiana</a> , Jim Pearson, Suros Surgical Systems, President & CEO, Moderator: Jack Pincus, IURTC	Ruth Lilly Learning / Riley Outpatient Center Auditorium
Mon Sept 18 6pm	ASM & ASME	<a href="#">Dr. Tim Fisher</a> , associate professor of mechanical eng., Purdue Univ. will be giving a <a href="#">presentation on nanotechnology</a>	Martin House on West 86th St (near St. Vincent hospital )
Thur. Sept 21 6-8pm	IQAA	<a href="#">History Repeats Itself: Measuring Current Risks</a> , Jon Mischo (Technisource)	Anthem (Downtown) 220 Virginia Ave
Mon. Sept 25	ScienTech	<a href="#">Tour of Subaru Assembly Plant</a>	unknown
Thr Sept 28 6pm	CIS-IEEE	Monthly Executive Committee Meeting	IUPUI, ET 209
Fri. Oct. 6, all day	IEEE	IEEE Financial Advantage Program - Life Line Ultrasonic Stroke Screening, pre-registration required	Tuxedo Park Baptist Church
Sat. Oct 7, 10am - 4pm	CINLUG	<a href="#">CINLUG will be participating in the Glendale Mall Community Day</a>	Glendale Mall 6101 Keystone Ave.
Oct 12-13	IQAA	<a href="#">Indianapolis Quality Assurance Association Quality Enrichment Conference</a>	Indianapolis, IN Marion, IN, 46953
Tue. Oct. 17 6-8pm	Techpoint	IT Professionals Peer Group: <a href="#">Emerging Storage Technologies</a>	Glick Junior Achievement Ed. Ctr 7435 Keystone Ave.
Sat. Oct 21, 8am -5pm	CIS IEEE	<a href="#">Leadership workshop</a> with IEEE senior member, Lt. Colonel Robert Sadowski, Ph.D.	IUPUI, ET202
Tues. Oct 31	Techpoint	<a href="#">Indiana Technology Summit 9</a>	Indiana Conv. Ctr
Thur Nov. 2, 6:45pm	CIECN	<a href="#">Tour of IU Emerging Technology Center</a> , registration required	IUETC
Tues. Nov. 7	CIS-IEEE	<a href="#">CIS-IEEE Annual Award Banquet</a>	Carmel, IN
Nov. 16, 17	ACEC Indiana	<a href="#">Engineering Leadership Program</a>	Hilton Garden Inn - Indianapolis, IN

## 2007 Meeting Calendar

June 3 - 7	ASMS	<a href="#">55th ASMS Conference on Mass Spectrometry</a>	Indianapolis, IN
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Check the [Section web page](#) for current information.



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