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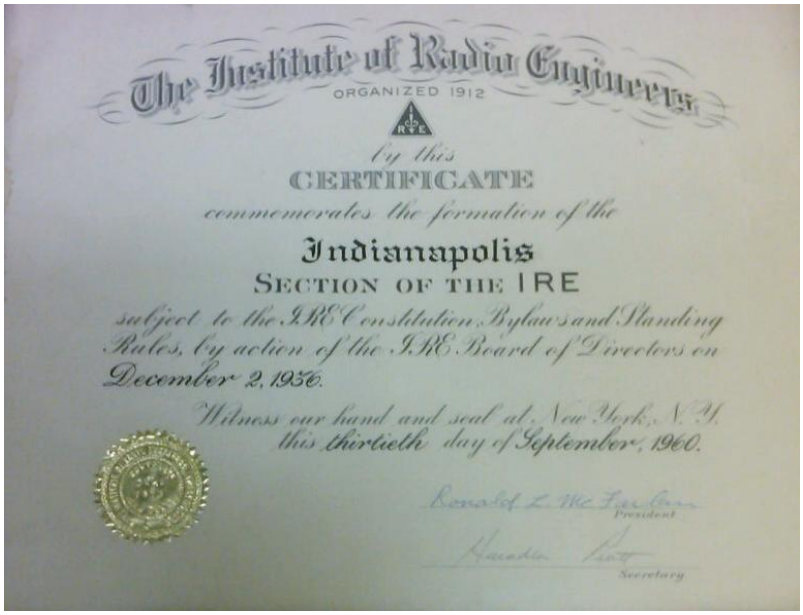
THE REPORTER

Journal of the Central Indiana Section • IEEE

2012 CIS-IEEE CENTENNIAL CELEBRATION!



YOUR POINT OF VIEW, PLEASE,

Your CIS is celebrating the centennial in a significant and memorable way. We have many stories in the history documentation written in the 1980s by George Fraser with the assistance of many others, and we are reproducing that history here. However, we are short of interesting and insightful tales of the section events and member and officer activities, especially in more recent years. We are asking all members, officers and especially life members to share their stories for publication in the next issue of the CIS-IEEE Reporter.

Here are a few suggested "for instance" topics that many of us may remember from a distance that should be documented and preserved:

- The resurgence of the section led by Frank Burley, by initiating short courses that brought the CIS-IEEE out of the red and brought modern electronic technology to the region.
- The statewide promotion of courses on IHETS led by Harry Bostic that reached hundreds of engineers and made CIS-IEEE into a very successful section.
- The creation of state-of-the-art courses by Don Weidner and Bob Atherton on microprocessors and micro-electronics.
- Tours of plants, such as Ransburg Corporation, that attracted over 100 attendees.
- Our section representatives, Bob Adams and Harry Bostic, working at the IEEE regional and national level.
- The CIS-IEEE co-sponsorship of INDYCON and many other conferences.

These are just ideas. We need to write the history, both general and anecdotal that surely the future membership will want to know. Please send your written contributions to Marvin Needler, Historian, (mnpn@juno.com), 6649 E. 65th St, Indianapolis IN 46220, and/or to Helen McNally, Editor (mcnallyh@purdue.edu) 401 North Grant St. West Lafayette, In 47907 by August 1, 2012.

CENTRAL INDIANA SECTION
of the
INSTITUTE OF ELECTRICAL and ELECTRONIC ENGINEERS
A HISTORY

By George R. Fraser

Part 1

By 1876 telegraph poles had lined our Main Streets for over thirty years. Downtown some of our stores and streets utilized arc-lamps, invented in 1808, for lighting. The telephone had just been invented in June of that year, an event was held in Philadelphia that changed the world. The Centennial Exposition of Philadelphia in 1876 became an event that sparked the mind and generated new concepts and new ideas. Alexander Graham Bell exhibited his telephone invented only three months earlier, exhibitors were present with inventions and new developments of electrical equipment from both Europe and America.

One of those attending the exposition was a Purdue University Professor of Chemistry, Harvey W. Wiley. He had returned from the Exposition with one of the two European Gramme dynamos that had been displayed. Its only use for several years was to power a classroom projector's arc-light. It was not until 1885 that Professor of Physics, Henry Augustus Huston, offered a course in applied electricity that provided the first formal training in electrical science. This was not only the first in Indiana but one of the first such courses in the mid-west and marked the beginning of the new profession of electrical engineering. The following year Edison invented the record player or phonograph. In 1879 he worked out the problems for a light that could be used in small homes and offices resulting in a successful incandescent light. Within a few months his Pearl Street Station was providing power in New York City for incandescent lighting. The telephone was growing as a communications tool. Numerous firms were manufacturing electrical equipment. It was in these circumstances that prompted the Franklin Institute to sponsor and International Electrical Exhibition at Philadelphia only eight years after the exposition.

It was during the planning for this exhibition those twenty-five prominent figures in electrical technology, including men like Edison, Eligu Thompson, Edwin Houston, and Keith sent out a call for the organization of an electrical engineering society. On April 15, 1884, these men with five additional men met in New York City at the headquarters of the American Society of Civil Engineers. One month later on May 13, 1884, they again met and the American Institute of Electrical Engineers was born. The first president of AIEE to be elected was Norvin Green, President of the Western Union Telegraph Company. Alexander Graham Bell and Thomas A. Edison were among his six elected vice-presidents. Norvin Green was a native of Indiana, born in New Albany, April 17, 1818.

Our own section, the Central Indiana Section of the American Institute of Electrical Engineers was chartered on January 12, 1912. The first to be elected chairman was O.S. More. He served for two years and followed by J.L. Wayne, who served for three years. In 1917, H.O. Garman was elected chairman and the following year, G.B Schley became chairman. Following World War I, J. L. Wayne became chairman, serving for three years. His successor was D.C. Pyke who served until 1924. During the tenure of Mr. Pyke, there were changes in the organization of the section and along with an elected chairman, vice –chairman, and secretary-treasurer, two members became members of the Executive Committee. The first Executive Committee appears in our records as Chairman D.C. Pyke, Vice Chairman D.D. Ewing, and Secretary-Treasurer C. A. Pfleiderer with C. F. Harding and J.L. Wayne members. The chairmen of the section for each of the next three years were J.B. Bailey, C. A. Fay and H. Kessei. The year 1929-30 saw J. B. Bailey serving again as chairman with lots of help from Purdue University with D. T. Canfield as vice-chairman and R. K. George on the Executive Committee; others on the committee that year were Secretary-Treasurer H. H. Stradling and S. Green, C. A. Fay and C. Brossman.

Mr. E.G. Ralston was chairman in 1930-31 with E.L. Carter chairman in 1931-32 followed by E. G. Thomas in 1932-33. For the period of 1933 through 1941, the following served as chairman: C.E. Chatfield, T. F. Invine, C. A. Cora, F. L. Stanley, L. G. Anderson, J. M. Webb, J. G. Harden, and R. A. Scholl. In 1941, L. J. Dunnewald was elected chairman. There were ten others on the Executive Committee that year. In 1942, J.R.

Pies was elected chairman. He served again in that position in 1947 completing a term started by W. H. Bollinger.

C. R. Swanson was chairman in 1943-44, C. E. Parks in 1944-45, S. C. Leibing 1945-46, and E. G. Hinshaw in 1946-47. In 1948, G. F. Switzer became chairman followed by C. M. Grabbe in 1949-1950. The year 1950-51 found J. W. Sears as chairman with Purdue's S. Freeman, Fr. As vice-chairman. During their year, four tours were held, six fine programs and a short course in Industrial Control offered. The year 1951-52 found C. A. Wilson as chairman and another good year of programs extending from one on the "Situation in Britain" to the "Industrial Significance of Atomic Power". Plant tours included Western Electric, RCA, and Duncan. P. B. Ewing was chairman in 1952-53. The year 1053-54 found G. R. Guthrie as chairman followed by L. H. Wollenweber in 1954-55. E. E. Sterner, the chairman in 1955=56 had a variety of programs during his year including three plant tours and a short course on "Engineering with Electronic Computers, others included programs on "Hi Fi Reproduction" and "Guided Missiles". In 9156, T. W. Metz was elected chairman and during his year two plant tours were held and a short course on "Nucleonics" offered, among other programs, there were programs on transistors, city planning, and solar energy.

The chairman for 19 57-58 was J. R. Wark. Programs that year included tours of WFBM-TV station and Sarkes-Tarzain in Bloomington. A short course in "Industrial Power Distribution" was also offered. Technical programs included computers and materials.

In 1958, L. V. Leonard was chairman and programs included tours. Dr. T. F. Jones, then head of the Electrical Engineering Department of Purdue University and among others a program on "Progress in Nuclear Power". R. H. Jordan chairman for the year 1959-60 and had programs including tours of Westinghouse Electric in Bloomington, Chrysler, The Nuclear Laboratory of Purdue University and Delco Remy in Kokomo. A short course in Industrial Electronics was offered. For the year 1906-61, F. S. English served as Chairman. During the year a short course on lighting was conducted, plant tours included Anaconda Wire and Cable Co. in Marion, Link Belt Bearing plant, and the I & M Electric Company's Fairbanks plant. Programs on the Post Office Automation and the Stock Market also proved interesting. C. B. Strickland was AIEE chairman for 1961-62. Programs during that year included three plant tours including Cummins Engine Co. of Columbus, a lecture on the "Engineer's Role in Politics" and one on "Satellite Communications". Chairman for the 1962-63 was G. W. Hanafee and during the year there were four plant tours including one to the Naval Avionics Facility, among other programs was a discussion on the AIEE-IRE merger and a program on "Our National Space Goals".

Part 2

Prior to the merger with IRE, the American Institute of Electrical Engineers Central Indiana Section had fifty one and a half years of professional cooperation and education in our area. During most years nine or ten programs were offered that included three or four plant tours. Each course usually met for three or four weeks, meeting one night a week.

Up to the time of the formation of the IRE section in Central Indiana many working in radio, or as many used to say, "In other than 60 cycles," belonged to the AIEE and many even after the forming of IRE continued their memberships in both organizations.

The Institute of Radio Engineers resulted from the merger of two earlier organizations. The Society of Wireless Telegraph Engineers was begun in 1907 and been organized in Boston, Massachusetts. Its failure to expand left only a few members when one Boston firm went out of business and another moved from the . . . (A gap occurred in this article here, editor)

. . . the two groups with an agreement to join each other. As a result on May 13, 1912, the Institute of Radio Engineers approved a constitution and elected their first officers. Robert Henry Marriott was elected as president. He was a native of Ohio and a graduate of Ohio State University.

The Central Indiana Section of the Institute of Radio Engineers was formed by the action of the Board of Directors of IRE on December 2, 1936. Unfortunately there is no record, either in our section files or in the files of IEEE of the success or failure of the section during the years prior to and through World War II. If it was typical of IRE sections of that time it would have been a comparatively small group of radio and broadcast engineers, recent college graduates working in the design and manufacturing of instruments and radio equipment's, members of the telephone industry and perhaps one or two college instructors or professors.

With the advent of World War II, the radio industry went through a tremendous expansion both in new concepts and in people. It was certainly these new engineers with some of the older members of the profession that regenerated the section following the close of World War II.

The first recorded chairman of the Central Indiana Section was H. I. Metz for the year 1946-47. He was followed by R. F. E. McCormick who served as chairman for the three-year period from 1947-59. He was followed by E. H. Pulliam who did not finish the year. G. H. Fathauer completed the year as chairman. In 1951 F. Dan Meadows became chairman and served into the 192-53 term when R. R. Wolff took over and completed the year and then served as chairman through the year 1953-54. John T. Watson became chairman in the year 1954-55. He was followed by Arthur J. Schultz for 1955-56 and B. V. Frency for 1956-57. We have no recorded person serving as chairman in 1957-58.

In 1958 Donald M. Stuart became chairman. Mr. Stuart was Head of the Civil Aeronautics Authority (now F. A. A.), Research and Development Center at the airport. This group was very active in the community and in the IRE. It was while Mr. Stuart was serving as chairman that center received word that it was to be moved to Atlantic City, New Jersey. The activity did move but many remained in Indianapolis with the Heazeltine Corporation that took over the facility. One particular program during that year of 1958-59 was outstanding. It was on “Inertial Guidance” and was held at the Naval Avionics Facility, now known as NAC. Purdue University, as a result of the NESEP program had many U.S. Navy students studying electrical engineering. The Commanding Officer of the Navy unit at Purdue was a very active individual who encouraged students to get out in the community and participate in other than campus affairs. His encouragement resulted in a very large number of students making the trip to Indianapolis and attending the meetings. Regular attendees of IRE meetings reported that the 100 in attendance made it the largest number attending a regular meeting to that date.

The following year, I became chairman of the section. From the first meeting of the year dinner meetings were held. Thin innovation to the section caused a rapid increase in attendance with many new faces welcomed. It was not surprising when later in the year attendance dropped some when one of the employing firms had a change in policy. Future claims for mileage and meals for attending seminars held locally would not be honored! However, it did make for good attendance while it lasted. The big meeting of the year was to be program by Ron McFalrland, President of IRE for that year. Dr. McFarland was also scheduled to be the principal speaker at a later date for the annual Engineers Banquet held in February of 1960. The section meeting was scheduled for the Veterans Memorial Auditorium and had received good publicity. A large crowd was anticipated. The weather unfortunately did not cooperate. As is often the case during February a severe blizzard was raging that evening and only fifteen hardy souls were able to attend. For the Engineers Banquet the weather improved somewhat and attendance was much better.

In 1960 Stan M. Stuhibarg became chairman, a position he held for two terms. Mr. Sthuibarg originated the section publication and the first issue of the Indiana Reporter for Engineers was published on June 1, 19 61 with Eugene Montoya of RCA as editor. Bob Graham soon became assistant editor. In June 1962, a banquet was held that was well attended. The high-light of the evening was the presentation of the Fellow Award to two of our members, Donald M. Stuart, former chairman and to Thomas F. Jones, who at the time was Head of the Department of Electrical Engineering at Purdue University.

Ron O. Whitaker served next as chairman for the year 1962-63 with Robert Olsen serving as vice – chairman and D. E. Behymer as secretary-treasurer.

Part III

On September 12, 1963, the Institute of Electrical and Electronic Engineers became a viable organization for the Central Indiana sections of the American Institute of Electrical Engineers and the Institute of Radio Engineers. The merger had covered many years of discussions and negotiations by many committees at the national level followed by much information to the sections keeping them informed of what was going on. Most sections had information programs or panel discussions regarding the merger. Following voting by all members and boards the merger was approved with an effective date of January 1, 1963.

Our central Indiana sections had operated under an academic year rather than a calendar year for many years and saw no reason to make changes in the operating year for the merger. In early 1962 the sections started planning for the merger and by fall of that year had come to some general agreements on procedures they desired to follow. First, to ease the transition, dual officers would cover the period of January through June. Second, a nominating committee would be formed from each of the sections. Both would then meet as one with instructions to meet as necessary and report their recommendations prior to January 15, 1963.

It is quite obvious that this committee worked long and hard to obtain a group of officers that would have the complete respect of all the members and the conscientious in the e fulfillment of their responsibilities. As a direct result, H. E. Roys from the RCA Records Division was elected as the first chairman of the section

with H.A. Moench of Rose Polytechnic Institute as vice-chairman and J. R. Wark of Indianapolis Power and Light as secretary-treasurer. Ed Roys had been as active member of the IRE prior to his arrival in Indianapolis and had received his Fellow Award prior to his arrival here. It is believed that he was the only IRE member in the Central Indiana Section with the Fellow Award. Herman Moench had been active in both AIEE and IRE, and Jim Wark had been an active AIEE member since his student days.

The first Executive Committee meeting of the new officers was held on the Purdue Campus, Indianapolis, with sixteen members present. The purpose of the meeting was to appoint committee chairmen and to act on recommendations regarding *The Reporter*. The staff of the *The Reporter* was to be six in number with Managing Editor, Editor, and Business Manager, each with an assistant. Two members of IRE had personally subsidized *The Reporter* during the previous months when other funds were insufficient. During this meeting it was agreed to assume such a loss and that the section would repay those involved as rapidly as possible. Other recommendations were made regarding *The Reporter*, and the chairman asked two others to work with him on the problem. Mr.Stuhlberg reported during the meeting on the activities of the Indianapolis Engineering and Society Committee (IESC) and the Indianapolis Scientific and Engineering Foundation, Inc. (ISEF.) Later in the same meeting Mr. Stuhlbarg was appointed by Mr. Roys as Chairman of the Professional Societies Committee in order to coordinate the activity of IESC and ISEF with the IEEE.

At the first CIS-IEEE meeting, Professor William H. Hayt, Jr. Head of the Department of Electrical Engineering, Purdue University, was the speaker. His talk was on “Where is Electrical Engineering Going.” The October 10, 1963 meeting was an afternoon tour of the RCA Home Instrument Division. Other programs during the year included one on dynagrove recording systems and one on Touch-Tone dialing.

Region IV Director, Dr. L. J. Giacoletto, was present for the March 17, 1964 Executive Committee meeting and commended the section on its accomplishments and progression since the merger.

During the last Executive Committee meeting for the year, Chairman Roys reported on the Professional Group meetings of the year. The Power Group had met once, the Audio Group four times, the Military Electronics Group twice and the Broadcast and TV Receiver Group twice.

In January the Chairman of the Engineering Education Committee proposed a short course on transistor circuits with a minimum donation to be required This gave those interested an opportunity to advance their education and perhaps raise some funds for the section. Robert Atherton of NAFI was the instructor. After some good planning and effort the course was approved and held. A donation of $10.00 per student was requested with registration limited to 100 students. A total of 130 signed up for the course with all but two or three completing it. A new class room was found to solve the limitation problem. This effort turned out to be a very successful project for all concerned and was the first of several courses given by Mr. Atherton.

Membership figures for the year were slow in arriving from Headquarters due to the different methods of record keeping utilized previously by AIEE and IRE. The section started the year with a recorded membership of 1033. The year was finished with 1008 paid-up members.

The year of the merger had proved to be a good year with many participating and much accomplished toward a continuing future. Bylaws had been written, approved and published in *The Reporter*, section meetings had been held regularly with an attempt to have all meetings on the second Thursday of the month. Executive meetings were scheduled regularly, commencing at 7:30 p.m. and over between 9:00 and 9:30 p.m.

The Reporter was published under the able Managing Editor, E. Montoya. He was assisted by Assistant Managing Editor. R. C. Graham. The Editor was D. H. Seal. The Assistant Editor was M. C. Mehta. The Business Manager was A. L. Adell assisted by experienced J. J. Breslin.

In 1964 F. E. Burley was elected chairman. Frank was from Western Electric at that time. His vice-chairman was David Bell from P. R. Mallory. The secretary-treasurer was R. Gelinas from the Naval Avionics Facility.

The professional groups were becoming better organized with firm plans for a good year prior to their first meeting. Early in the year Program Chairman and Chairman of the Professional Societies Committee, D. H. Walston, left the area and was replaced by J. M. Dixon.

At the end of the year Executive Committee meeting reports included Membership – a very active Chairman J. Fred Peoples, working on non-member guests, through assistant members in the various plants and with considerable personal effort, had the membership up to 1110 paid-up members; Treasurer – The year had started with $571.14 in the treasury and ended with $718.14; Programs – The programs for the year had been a success except for an afternoon plant tour that Chairman Dixon reported as a failure due to a small attendance; Student Activities – Chairman G. L. Rainey reported a Papers Night program had not worked out as it was held too early in the year; Awards Chairman D. J. Angus reported that Sarkes Tarzian had been presented with his Fellow Award during the annual Ladies Night and Awards meeting and banquet.

In 1965 the section elected W.O Montgomery of Public Service Indiana s chairman with Dr. C. C. Rogers of Rose Poly vice-chairman and J. Fred Peoples from the Naval Avionics Facility as secretary-treasurer. Jim Breslin was managing editor of *The Reporter* and had found it necessary to reduce the size of the bulletin to eight pages. This publication is now going to 1300 engineers and students. Changes in committees during the year included the resignation of Rick Gelinas from NAFI; Rick had been an officer and had been on several committees. His resignation as chairman of the program planning committee was necessary as he was moving from the community, Clyde Hoyt resigned as chairman of the education committee to be replaced by Ron Cruthers.

Programs during the year included Bob Kryter for Ladies Night with a discussion of World Travels. This proved to be a very interesting and informative program enjoyed by all. A tour of Duncan Electric in Lafayette completed the year's programs.

Professor George of Purdue University received the Fellow Award during the January meeting

By the end of the year *The Reporter* was again in financial difficulties. Advertisements seldom bring in sufficient funds to cover publications costs. It is interesting to note that during these years *The Reporter* was financed to a great extent by education courses that not only improved the individual members' knowledge but also gave extra funds to the section. Some of these courses were undertaken by the Power Group while most were undertaken by the section. A stock market course was presented over a four-week period one spring and proved very successful.

In March of 1966 the section was contacted regarding the possibility of a Student branch at Sam's Technical Institute. Student enrollment of 28 only three years earlier had grown to over 1000. This posed a problem to the section because of the type of school. However the section did investigate and followed through for several years on this request for information. First there was a refusal by Headquarters to authorize a branch since the school was not accredited. Later students were accepted as student members but had no local branch with which to associate. For several years the section had many student members from the school.

The final program of the year under Chairman Montgomery had 129 in attendance.

J. Fred Peoples was chairman for the year 1966-68. His vice-chairman was R. K. Schuette and Charles E. Ohman was secretary-treasurer. Professional groups included the Power Group, Broadcast and TV Receiver Group, the Audio Group and the Aerospace and Electronics Systems Group. The Bloomington Subsection was very active and during the previous year reported eight meetings held. Ralph F. Lasley was the elected chairman of the subsection for the year.

As usual *The Reporter* was one the first items to be discussed when the Executive Committee had its first meeting of the year, and as a result a commercial organization was selected to edit and publish *The Reporter*. Ad-Pact was selected to do this work with a division of the advertisement fees for advertisements sold by them.

The Education Committee had proposed a course in "Logic Circuit Design and Application". Don Willis of NAFI was to be the instructor with twelve 2 ½ hour sessions. This was approved and a total of 71 eventually enrolled in the course that proved very popular and b beneficial.

The section presented a Certificate of Appreciation to former chairman, Ed Roys, who had retired from the RCA Records Division and would soon be leaving the area.

Programs during the year included tours of Butler University's Clowes Hall, the Avon Railroad yards and Esterline-Angus. A very interesting and thought-challenging talk was presented in October by George McNally, Head of the School of Technology at Purdue University. The Ladies and Awards Night was held in January with Fran Edwards presenting a program enjoyed by all. Average attendance for the ten meetings held was 81, with a high of 213 and a low of 35.

The year closed with a balance of $1009.91 in the treasury and a vote for the continued publication of *The Reporter*.

For the year 1967-68 the section had selected Charles E. Ohman as chairman, David A. Diehl as vice-chairman and H. Burr Culion as secretary-treasurer. Subsection and Professional Groups had named the following to be their leaders; the Bloomington Subsection – Gerald L. Stout, Power Group – Robert W. Prather, Aerospace and Electronic Systems Group – Leonard Skwiera, Audio Group – Eugene Montoya, and Broadcast and TV Receiver Group – J. A. Luksch.

It is interesting to note that through many of the years of the Program Planning Committee has in their last meeting of the year presented a full schedule of programs to their successor committee and the incoming chairman. During many of these years the programs were so well planned and scheduled that printed wallet size program schedules were available at the first meeting of the New Year and were closely followed for the

year. Particularly during the early years of the IEEE, the Professional Groups assumed the responsibility for their group developing one or more programs for the year send then followed through with all the details and arrangements while cooperating with the committees concerned. During the June 13, 1957 meeting, the Executive Committee again reviewed *The Reporter* in general and with specific attention to advertising.

Programs for the year, among others, included a tour of the Air Control Centerat Weir-Cook Airport and a program on Oceanography. The June program was to feature Mayor Richard Lugar but had to be cancelled due to a change in the Mayor's schedule.

A spurt in the growth of the section resulted in the commendation of the section by regional officers. This sudden growth was due largely to 300 students of the Howard Sams who had applied for and received Student Associate memberships.

Our section awarded two Fellow Awards in January to Dr. George R. Cooper and Dr. Fritz J. Friedlander both of Purdue University.

This year saw a regression among the various professional groups with several being inactive. Unfortunately the Power Group was among these. The Power Group had been one of the best organized and functioning of the professional groups. It continually presented good programs and training courses but this year had been active for only one major meeting.

The section ended this year with a balance of $1352.81. All members had worked hard this year; and although at times some problems seemed insurmountable, it could be called a very successful year.

To be continued by,
George R. Fraser,
AIEE S'336,
IRE M'48-SM'56,
IEEE LS '83

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2012 CIS-IEEE CENTENNIAL CELEBRATION!

Centennial Event is September 14th
at the Skyline Club
http://www.clubcorp.com/Clubs/Skyline-Club-Indianapolis
in downtown Indianapolis.

This will be a private event for any Central Indiana Section IEEE member that would like to attend and help celebrate our section's 100 year anniversary.

Cost for attending the event is: $15/person or $25/couple.
This include a fantastic buffet dinner,
give-aways to those that attending,
and parking fees.

Please check our website for updates on the event.
We plan to open registration for the event in late June/early July.

Dignitaries from Region 4 and IEEE-USA will also be attending the event.

2012 CIS-IEEE CENTENNIAL CELEBRATION!

FIRST Robotics Teams Claim Coveted $500 Sponsorships In Statewide Essay Contest

Three Indiana FRC Teams have been awarded $500 Sponsorships in Central Indiana Section's Annual Essay Contest. A record setting fourteen entries were received from as far south as Connersville and as far north as New Carlisle.

The FIRST Robotics Competition (FRC) challenges high school students to build a competitive robot during a six-week build season using a standard "kit of parts" and a common set of rules. The teams and robots then compete in games designed by Dean Kamen, Dr. Woodie Flowers, and a committee of engineers and other professionals. (http://www.usfirst.org). FIRST Robotics Competition (FRC) is a unique varsity sport of the mind designed to inspire high-school-aged young people to explore careers in science, technology, mathematics and, engineering.

This year's contest challenged teams to identify the simple machines used in their robot design and describe the contribution of each to the overall operation of the robot.

The Winners

Team 292, Western High School, PantherTech. A repeat winner in our contest. Panthertech competed in the Smoky Mountains Regional in Knoxville and the Boilermaker Regional in West Lafayette.

Team 234, Perry Meridian High School, Cyber Blue. Also a repeat winner. Cyber Blue won the Smoky Mountains Regional and was a semifinalist at the Boilermaker Regional. Cyber Blue won the Regional Chairman's Award at Smoky Mountains Regional. The Chairman's Award is the highest overall award presented. Also at Smoky Mountains Regional, Cyber Blue won awards including the Innovation in Control Award and the Website Award. They competed in the FIRST Championship in St. Louis. The team's robot is shown below.

Team 1024, Bernard K. McKenzie Center for Innovation and Technology, Kil-A-Bytes. A first time entrant. The Kil-A-Bytes participated at the Queen City Regional, in Cincinnati, and the Boilermaker Regional, winning the Imagery Award in each regional. At Boilermaker, the team was awarded the Gracious Professionalism Award, which is recognition of the team's helpfulness and is voted by the other competitors at the event.

Winning essays can be found on pages 9-11. Congratulations to our winners and thank you for a very successful contest. See all of you for the 2013 contest. IEEE Members wishing to know more about FIRST Robotics or who would like to participate in Essay Contest administration or judging should contact Brad Snodgrass at bsnodgrass@ieee.org.

Figure 2, Team 234 Robot

Team 292 Essay

IEEE Annual Statewide FRC Essay Contest 2012

A simple machine is a machine with few or no moving parts used to make work easier. Our robot for the 2012 FRC season uses several simple machines. Examples of simple machines incorporated in our robot are the wedge, wheel and axle, lever, inclined plane, and screws.

Wedge: Two inclined planes joined back to back. There are small, plastic, wedges next to the drive-base wheels of our robot. These wedges exist to assist in getting over the 4x4 inch barrier across this year's playing field. The wedges lean against the barrier as the wheels roll over it to help level the surface and lessen stress on the robot as it navigates the speed bump.

Wheel and Axle: A wheel and axle has a larger wheel (or wheels) connected by a smaller cylinder (axle) that is fastened to the wheel so that they turn together. Obviously there are wheels used in our drive base. There are also wheels under the middle of our robot that are in place to navigate the half-court barrier. These wheels prevent our robot from straddling and getting stuck on the barrier when the drive base wheels are not in contact with the barrier or playing field floor.

Lever: A straight rod or board that pivots on a point. Our robot uses a lever as an arm to reposition the ramps. Our robot is made to navigate the field over either the ramps or the barrier. Our robot has a smaller width so that once the lever pushes the ramp down; we are able to board and maneuver easily with other robots to achieve the balancing bonus at the end of the game.

Inclined Plane: A sloping surface, such as a ramp. Inclined planes lead from the mechanism that feeds the basketballs into the robot to the catapult shooter. The planes funnel the balls from the top of the vertical conveyer to the shooter.

Screw: An inclined plane wrapped around a shaft or cylinder. There are screws in place at several points on the entire robot. The screws are used to keep the robot together and hold pieces in their proper places.

All of these simple machines plus many more complex components create a robot capable of doing great things.

Team 234 Essay

IEEE Essay Contest Submission

An FRC robot is a complex machine designed to do a specific task. The outside may seem confusing, but the forces at play are easy to explain with simple machines. One simple machine can accomplish one task, but combining many into a precision piece of engineering results in a very capable robot.

The first priority for a robot is the drive system. It has to move in order to work in competition. To accomplish this, wheels and axles are used. We drive traction wheels using sprockets and chains connected to a gearbox which is driven by an electric motor. When the motors are running, the wheels are able to rotate and move our robot to a desired location.

The next priority is the shooter. This system includes another wheel and axle. The wheel is spun at a high RPM which allows the game piece, a foam basketball, to be shot out of a crescent shaped channel. The wheel controls the trajectory of the ball simply by adjusting the RPM output of the motor. It may be a simple machine, but it performs an important task.

The shooter doubles as a turret that is able to rotate. The rotation is accomplished through the rotation of a worm screw. A bracket rides along the axis of the screw as a motor rotates it. A pivot attachment connects the turret to the screw. As the screw spins, the bracket is pushed in either direction to achieve our desired angle. We chose a screw because it allows very precise adjustment to minimize human error in aiming the turret. The screw, along with the wheel and axle, creates one complete system.

A shooting mechanism requires another system in order to transport game pieces from the floor to the shooter. The method chosen for our robot includes a driven belt and pulley system that rotates rollers. They move the games pieces through the robot. The belt and pulley uses friction to drive the system and compress the balls in order to control their movement. The pulley was the most efficient way of accomplishing this need. Plus, we were already familiar with this method from previous experience.

We took some inspiration from an amphibious tank for another portion of our robot. These tanks have an adjustable, armored plate on the front which enables them to hit and transition smoothly from land to water and vice versa. With that in mind, we used wedges on the front of the robot. This allows us to traverse a four inch high barrier on the competition field. Without the wedges, the robot would have required larger wheels. Instead, a simple machine incorporated into the chassis greatly improved the versatility of the drive without sacrificing other features such as stability.

The final requirement is a system to tip a self-leveling ramp down to the floor so that our robot can drive up onto it. The same system could also help level the robot as it traverses the barrier. This system could have been designed to use a lever or another simple machine such as a pulley. The most effective option in this case was to use a lever. The lever consists of pneumatic cylinder that, when extended, pivots a bar downward. The bar is then able to rotate enough to tip the ramp. Additional reasons that a lever was chosen were the time we save and the strength given to the system by using it rather that a pulley.

When combined, the wheels and axles, pulleys, screws, wedges, and levers all serve independent roles that work together to create one complex machine that accomplishes all of its tasks.

Team 1024 Essay

Simple Machines in Our 1024 FRC Robot

An important part of any robot is the basic moving components in the design. Without them the robot would struggle to perform the task it was made for, or even not work at all. Anything as complicated as a robot can be broken down into the basic building blocks called simple machines. It is these simple machines working together that allow this mechanism to the amazing stuff that it can do.

This years in FIRST robotic the game is called Rebound Rumble and its theme is basket ball. The goal is to get balls into the baskets and also balance on teeter-totters in the center of the arena. To do this our FIRST Robotics team will have to take advantage of the six simple machines; Pulleys, wheels and axles, levers, Inclined planes, Wedges, and screws. And each one functions to do their job in the whole complete.

The first simple machine that usually comes to mind is levers. Levers are found everywhere and even in other machines like wheels and axles, and gears. There are several major levers that operate the balance beam lowerer to cross or balance on them. A pneumatic cylinder, which can move up and down like a lever its self, pushes another bar lever that is attached to the base that bar is attached to a secure bar that doesn't move and on top of that there's a lever that is part of the lowering device which is attached to the lever that's also pivots on the lever that is being move by the pneumatic cylinder making a quadrilateral. That's a lot of levers, but they're all needed to swing the lowering device quickly and efficiently.

Wedges can force two things apart like the top part of the balance beam and the weight of the other side. If the robot moves up to the teeter-totter and it is level, it can take out two rounded triangle shaped bars (one on each side) and use them to force or "wedge" them to the ground. So the wedge is almost like upside down. This apparatus in the front can also be considered an inclined plane to help the robot up the ramp. (By the way, the balance beams in the center of the field are a second class lever with and inclined plane on the top.)

In order to shoot the balls into the hoop the robot needs to be able to pick the balls up. To do this it can run over the balls with an opening in the front. Then above the ball two PVC pipes wrapped together by McMaster Carr Polycord and, one having a grippy rubber on it will spin and feeds them in. Then three more PVC pipes with Polycord will spin. The Polycord will press the ball against two metal bars and guide them upward to the shooter. Both of these are examples of pulleys.

Wheels and axles are all over the robot. Six of them are responsible for allowing allow the robot to move. Others like the lazy Suzan which allows the shooting device to rotate and aim it. What's interesting about the lazy Suzan is it has a large hollow center so the axle is a ring like the wheel. The barring that allows parts to rotate easier is the same thing. There are two wheels and axles that make up the shooter. They work by spinning at fast speeds and squeezing out the balls at the right velocity.

Screws are the most common simple machine on the robot. They can be anywhere there are screws for tightening obviously. Screws are used to hold the robot together. Without them the pieces of the robot will fall apart.

As it seems to be simple machines are everywhere in our First robot. Image what it would be like if someone tried to make a robot for this competition without simple machines. This challenge would probably be extremely difficult, if not impossible.

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Central Indiana Section Presents "Mission Bag" Lesson at first ever Hamilton Southeastern School District Summer Engineering Seminar

On June 7, more than 50 teachers and faculty from the Hamilton Southeastern School District (HSE) participated in the Mission Bag Lesson. The teachers were attending the first ever Summer Engineering Education Camp, a three-day seminar for elementary teachers to learn to present engineering content lessons in their classrooms.

Mission Bag is an adaptation of the highly popular "Design and Build a Better Candy Bag" lesson from TryEngineering.org. Part of the activity was for teachers to adapt TryEngineering lessons for their individual classrooms.

Mrs. Meg Strnat, fourth grade teacher at Cumberland Road Elementary School, and long time Teacher Grant recipient, was a facilitator of the event and was responsible for inviting Central Indiana Section to participate. Mrs. Strnat has been presenting TryEngineering lessons to her classes for the last four years, with grant support from Central Indiana Section.

With more teachers and faculty aware of TISP opportunities, CIS will be looking for many more grant applications and is hoping to develop a longterm relationship with Hamilton Southeastern School District. It is hoped that these opportunities can be expanded to include In-Service Presentations during the school year to a wider audience at HSE.

To participate as a volunteer in the Teacher In-Service Program, or for information on bringing TISP to your school district, contact Brad Snodgrass at bsnodgrass@ieee.org.

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Central Indiana Section Prominently Featured at IEEE Symposium on Pre-University Teacher Training

The IEEE Symposium on Pre-University Teacher Training was held last May in Tampa, Florida to recognize the first ten years of the IEEE Teacher In-Service Program (TISP) and serve as a launch pad for volunteers from around the world to shape the future of the Program.

The Teacher In-Service Program provides a forum for IEEE volunteers to demonstrate the application of engineering, science, and mathematics concepts by sharing real-world experiences with local pre-university educators. TISP functions provide a professional development workshop aimed at helping teachers bring exciting hands-on engineering lessons into their classrooms. Numerous free lesson plans are available at TryEngineering.org.

Florida West Coast Section launched the Teacher In-Service Program in 2001. Since then, regional seminars have been held around the world. The Region 4 workshop, which was sponsored by Central Indiana Section, was held in Indianapolis in 2006. CIS volunteers have presented In-Service Seminars in school systems across central Indiana. CIS remains one of a very few sections to have sustained a TISP initiative continuously since its workshop, and the only section in Region 4 to have done so.

In 2009, Central Indiana Section originated the Teacher Grant Program. This program provides money for teachers to purchase materials for classroom presentation of TISP Lessons. Although several sections are contemplating roll out their own teacher grant programs, CIS remains the only section in IEEE to actively support such a program.

Through presentations at the Tampa Symposium, the methodologies and development of the TISP in Central Indiana Section were prominently displayed to regions across the world. The Symposium included TISP champions from sixteen countries.

To learn more about the CIS TISP initiative, contact Brad Snodgrass at bsnodgrass@ieee.org. Please join the CIS K-12 Outreach Mailing List by sending an email message to LISTSERV@LISTSERV.IEEE.ORG with the following in the **body** of the message SUBSCRIBE CIS-K12-OUTREACH <full name>. (Example: SUBSCRIBE CIS-K12-OUTREACH Brad Snodgrass) Your email needs to originate from the email address at which you wish to receive messages.

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New Senior Member

The CIS-IEEE has always looked to facilitate members advancing to higher levels of membership. Congratulations to our newest senior members!

Lauren Christopher
Donald Burns
Yung-Ping Chien
Fariborz Farahmand

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PES/IAS NEWS

Ben Huckaba, PES Member

The PES-IAS conducted a tour of the WISH TV Channel 8 Studio in Indianapolis on April 10th. The tour included parent company LIN Media, which provides television programming to 32 stations in 15 metropolitan areas. The meeting was well attended and very informative, showing the technical and on-air side of broadcasting. The tour was conducted by IEEE member Tom Weber, who provided a very interesting and entertaining commentary. Members visited the news room, had a chance to "use" the green screen to see how the weather is presented, and visited the control booths were programs are produced. The tour of LIN Media also demonstrated the many intricacies of downloading then uploading to individual stations television broadcasts. The PES-IAS wishes to thank WISH-TV8 for hosting this tour.

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IEEE-USA Meeting Update

David Koehler, CIS Chair

David Koehler, Diana Vasquez, and Stavan Dholakia represented the Central Indiana IEEE Section at the annual IEEE-USA Meeting. The event was extremely successful and included special presentations with break-out sessions that focused on various tools available to manage IEEE sections, societies and chapters. In order to benefit IEEE Members, sessions that addressed professional development of members were useful. Experts and Guest Speakers shared their views on "*Work Life Balance*", "*Lifelong Employability*", "*Student Professional Awareness Conference*", "*Financial Management*" and "*PACE Activities and Membership Development Initiatives*". The most common theme throughout the meeting was PACE Activities. It was discussed how PACE (Professional Activities Committees for Engineers) are an essential function of each section to serve member' needs. The annual meeting also provided a chance to learn and understand how other sections and regions are conducting events and activities in their geographical regions.

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PES/IAS Update

The key activity for the PES-IAS this spring was the Smart Grid workshops held in conjunction with the EIT Conference at IUPUI. The PES-IAS held a day of workshops that also served as the Spring Short Course. The sessions were very well attended, and well received by those in attendance. Each member received 6 hours of professional development hours (if desired).

The workshops consisted of five presentations and a panel discussion. The workshop also included three student presentations, in the form of a poster session. Abstracts for each presentation plus the poster session titles, are listed below.

J. Eric Dietz,
Director, Purdue Homeland Security Institute, Purdue University
EV 101 – An Electric Vehicle Workshop
This workshop provided an introduction to Electric Vehicle (EV) technology analysis and configuration. It explored the integrated mechanical and electrical power and control systems in electric vehicles including the management of integrated power and control systems within an electric vehicle. Discussion covered system configuration, power requirements, structure, power system, control and energy storage media, and some of the various social implications and aspects of electric vehicles. Additional technologies discussed included battery chemistry, vehicle dynamics, battery management systems, and the information technology to effectively integrate the electric vehicles into the power grid and the implications with Smart Grid technology Participants left the course with a basic understanding of, the differences in hybrid and electric vehicle design, characteristics of modern electric vehicles and components interaction, battery storage technology power charging, systems theory, safety considerations, and implications and interface with Smart Grid (electric grid)

Jim Farley, Duke Energy
Duke Energy's Distribution Automation Program
This provided a summary of Duke Energy's plans to update voltage regulators, reclosers and other components of the distribution system with automation to improve reliability and performance.

Paul Myrda, Technical Executive, EPRI
Smart Grid's Impact on Asset Management
While the benefits of smart grid are frequently presented they do pose some significant impacts on asset management both favorably and unfavorably. This presentation covered the issues from the viewpoint of the asset manager and how the technology will enable many beneficial asset management techniques but also create some new impacts and challenges.

Barry Feldman, Indianapolis Power & Light
Building and Managing a Smart Grid
This presentation detailed plans to enable two-way communication with devices from power plants to customers' homes through a "Smart" Grid project for Indianapolis, funded in part by a $20 million grant from the US Department of Energy (DOE). IPL is in the process of implementing automated devices to monitor and operate the electrical grid remotely to optimize the system and restore outages more quickly. Information learned included capacitor bank controls, reclosers, cyber security measures and new Supervisory Control and Data Acquisition (SCADA) systems. In addition, IPL described plans to provide energy information for customers on a one-day delay basis to help customers manage their energy costs.

Joan Soller, Indianapolis Power & Light
Charging Stations for Electric Vehicles and How They Will Impact the Electrical Industry
This workshop centered about electric vehicles and their impact in Central Indiana. IPL describe its strategy and experience as supporters of electric transportation over the past two years. Collaboration among local and national stakeholders formed the cornerstone of IPL's efforts, funded in part by a $20 million grant from the US Department of Energy (DOE). Area transportation and electrical models developed jointly with Purdue University to assess potential electrical system impacts were shared. Challenges addressed to date and future

opportunities related to the usage of Electric Vehicle Supply Equipment in customer facilities and public locations were also addressed.

Panel Discussion – the Future of Smart Grid

- Joan Soller, Indianapolis Power & Light
- Barry Feldman, Indianapolis Power & Light
- Paul Myrda, Technical Executive, EPRI
- Jim Farley, Duke Energy
- Jeffrey Katz, IBM

Poster Sessions - Smart Grid Laboratory, Purdue University N. Athula Kulatunga (advisor)

- "Hybrid Test Bed for Advanced Metering Infrastructure AMI Emulation" Uditha Sudheera Navaratne
- "Easy to Use Electronic Interface for Interacting with AMI in Smart Grids", Chamika Liyanagedera,
- "Energy Portal with Non-Intrusive Appliance Detection Algorithm for Feedback Purposes", ' S.S. Kuruppu

Jerry Brusher, MathWorks

Matlab

This seminar, showed how the MathWorks Physical Modeling tools can be used to enhance the teaching of System Dynamics. In particular, Simscape was used to model multi-disciplinary systems for analysis and design. Moreover, a demonstration was conducted of how MATLAB and Simulink can easily interface with hardware to support project-based learning, providing students with a richer educational experience.

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Announcements

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ISPE 2012 Annual Conference

The Indiana Society of Professional
Engineers will be celebrating 75 years of promoting professional engineering, education, licensure advocacy, leadership training, multi-disciplinary networking, while advocating public protection, and enhancing the image of its members and their ability to ethically and professionally practice engineering.

Contact: Lauraine Howe ISPE indspe@gmail.com 317-255-2267
When: Friday June 29, 2012 at 7:00 AM EDT -to- Saturday June 30, 2012 at 12:00 PM EDT
Where: Indianapolis Marriott North 3645 River Crossing Pkwy Indianapolis, IN 46240

http://www.indspe.org/conference.html

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Fearless Females Summer Camps 2012

We are excited to invite you to attend this event at Vincennes University. We want to challenge you to think outside the box, and to expose you to traditionally male-oriented fields with some hands-on workshops that will include Welding, John Deere, Diesel, Robotics, Surveying, Automotive, CNC Manufacturing, and more! It is our goal to provide extensive knowledge and experience to assist you in choosing the best career for you as an individual. Fearless Females in Engineering and Technology Summer Camp will be held June 17th through June 22nd and again June 24th through June 29th.

The camp is FREE; only cost is transportation to and/or from the VU campus to drop off/pick up the girls.
Start: 06/17/2012 8:38 AM ET
End: 06/29/2012 8:38 AM ET
Location: Vincennes University Technology Center, 1002 North First Street Vincennes IN, 47591
Contact: Haley Spears hspears@vinu.edu 812-888-5166

http://www.dreamitdoitindiana.com/calendar.aspx

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An EMC Practical Applications Seminar and Workshop

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Hilton Hotel, Northbrook, IL

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Learning how to design your product so that it complies with EMC regulations can save you from having a finished product that fails during its regulatory compliance testing. Re-designing or adding fixes to a failed product can be expensive and time consuming. By taking the EMC by Your Design Seminar, you will learn the fundamentals of electro-magnetic compatibility, including understanding the many EMC regulatory requirements such as FCC, CE, US Military, RTCA-DO-160 and those of most foreign countries. You will learn the methodology of how to minimize EMC problems, starting with the design process through final testing and approval, all of which will be brought to life through hands-on practical application to real life products. Also included will be a guided tour of the largest independent EMC and Product Safety facility in North America.

This newly updated curriculum was developed by Donald L. Sweeney and his associates. It includes how an electronic circuit becomes a radio transmitter, how the physics of even the simplest devices such as capacitors, inductors and shielding can help or hinder compliance and how to control the design to minimize emissions. Students will be lead step-by-step through sample calculations, be introduced to take-home proprietary software and be led through trouble shooting a product that does not meet the requirements. Additionally, attendees will be offered an exclusive, hands-on personal consultation with the instructor or a member of his technical staff to apply what has been learned to their specific product, possibly saving tens or hundreds of thousands of dollars in reduced testing, reduced time to market and reduced final product cost.

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How Do You Communicate??

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

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

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

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

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

CIS Home Pages

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

E-Notices

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

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

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Job Opportunities

http://jobs.ieee.org/jobs/detail/48786407/15
Title: Fall 2012- College Co-op- Indiana Distribution Ops- Electrical Engineering- Plainfield, IN
The Co-Op in T&D Operations, among other items, would gain some experiences in the following.
1. Work with an Engineer as directed in daily operational support duties
2. Work with a System Operator as directed in Transmission support duties
3. Work with a Distribution Operator as directed in daily Distribution support duties

This student would work under the guidance of engineers, system operators and distribution operators in the daily support of Transmission and Distribution Operations. Duties would include learning outage scheduling, EMS operation, monitoring of the Transmission and Distribution system. Candidate would also gain experience in the daily Transmission and Distribution outage planning as well as load transfers, outage analysis and relay operations on the Transmission and Distribution system.

Basic and Desired Qualifications apply:

Jobid: dukeenergy-109936
Company:Duke Energy
Location:Plainfield, IN, 46168, USA

2012 Meeting Calendar

Date	Host	Subject	Location
Thursday, June 21, 6:00 pm	CIS	**Executive Committee Meeting**	ET201S, IUPUI Internet/Phone Bridge
Thursday, July 19, 6:00 pm	CIS	**Executive Committee Meeting**	ET201S, IUPUI Internet/Phone Bridge

... Check the Section web page for details and current information.

ADVERTISER EVENT

October 23-25, 2012	DLS **www.dlsemc.com/1001**	EMC by Your Design Seminar	Hilton Hotel, Northbrook, IL

Central Indiana Engineering Web Links

ACEC	American Council of Engineering Companies, Indiana	acecindiana.org
ASCE	American Society of Civil Engineers	inasce.org
ASME	American Society of Mechanical Engineers	sections.asme.org/central_indiana
ASM-INDY	American Society for Metals - Indianapolis	asm-indy.org
CIECN	Central Indiana Engineering Consultants' Network	indy-engineer.dnsalias.com
CINLUG	Central Indiana Linux Users Group	cinlug.org
IBEN	Indiana Biomedical Entrepreneur Network	indianabionetwork.org
IHIF	Indiana Health Industry Forum	ihif.org
INCOSE	International Council on Systems Engineering	incose-coa.org
INDSPE	Indiana Society of Professional Engineers	indspe.org
INDYASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers	indyashrae.org
NSBE-IAE	National Society of Black Engineers - Indianapolis Alumni Extension	nsbe-iae.org
PIMCIC	Project Management Institute - Central Indiana Chapter	pmicic.org
SAE	Society of Automotive Engineers, Indianapolis	indianasae.org
Scientech	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

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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.

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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.