

**Institute of Industrial
Engineers
Chapter 47
NEWSLETTER
Detroit, Michigan**

Mission:

The Mission of the Detroit Chapter is to promote the advancement of Industrial Engineering by providing professional development information and resources to our customers.

Volume 44, No. 3

July and August, 2000

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Past President

Irv Otis
Central Michigan University
(248) 569-7570

**Tuesday, July 18th
Detroit Tiger Baseball Game**

Come downtown and visit Comerica Park.

See you at the ball game!



The Detroit Tigers will be hosting the Cincinnati Reds on Tuesday, July 18th during a night game starting at 7 PM. Detroit IIE has arranged for a block of tickets at a cost of \$12 per ticket.

Please let Rich Anderson know by July 1st if you would like to purchase tickets to the game. Contact Rich at 810-497-1328 (W), by e-mail at rlanderson@compuserve.com or by mail at 1824 Kingsbury Street, Dearborn, Michigan 48128.

**Thursday, August 10th
The 2000 Harbour Report**

- Which automaker has the lowest labor cost per vehicle?
- Which automaker has the most profit per vehicle? Why?
- Gain insights from Ron Harbour on published results as presented to automotive senior executives.



Where

The Gazebo Restaurant
31104 Mound Road at 13 Mile, Warren, MI 48092
(exit I-696 at Mound Rd, N to 13 Mi, NE corner)
Emergency contact telephone # (810) 979-6030

Time

6 PM Happy Hour
Cash Bar
7 PM Dinner (Buffet)
8 PM Presentation

Cost IIE Members \$15, Non-IIE Members \$20, Students \$10
RSVP: by **August 7th**, to our IIE VOICEMAIL (313) 438-0205.

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Chapter President's Message

by Dean Pyers

The International Science and Engineering Fair 2000:

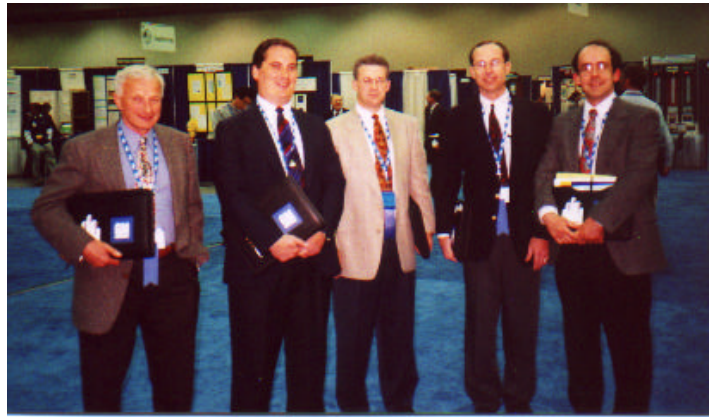
"You will have fun. And you will be humbled". With those words, 780 volunteer judges fanned out across Cobo Hall on May 9th & 10th to review projects entered in the International Science and Engineering Fair.



Over 1040 high school students from 49 countries brought their data and displays to Detroit for this year's competition. Project categories included Behavioral Science, Biochemistry, Botany, Chemistry, Computer Science, Earth & Space Science, Engineering, Environmental Science, Gerontology, Mathematics, Medicine, Microbiology, Physics, and Zoology.

The humbling experiences began almost immediately, when judges were faced with project titles such as "Brophillum Pinnatum: Homemade Remedy or Natural Poison?" and "Preparation of a Carcinogen DNA Adduct Standard for Use on Human Exposure Biomonitoring." The fun followed soon after, when judges started talking to enthusiastic and brilliant teenagers who described their research, the analysis of their statistical data, their conclusions, and plans for the future - which quite often included applying for or completing a patent registration. Any IE would have been proud of the team from Australia, who set out to design a better refrigerator. Their research included testing the hypothesis that glass doors would decrease the amount of time the refrigerator doors are left open, thus decreasing heat loss. After surreptitiously observing customers in convenience stores and supermarkets, they compared those observations to times in their own homes with solid door refrigerators and found people took 3.2 seconds longer to find an item in a solid door refrigerator. How often would you expect to find a time study included in a science project?

Detroit Chapter members **Tom Centlivre**, **Brian Peacock**, and **Dean Pyers**, and friends of the Chapter **Brian Corcoran** and **Craig Egan** served as judges at the Fair. All would agree that it was an enjoyable experience, and if you ever have the opportunity to judge a science fair or attend as a visitor, we would encourage you to do so.



Pictured May 9th and 10th at the International Science and Engineering Fair at Cobo Hall, from left to right, Dr. Brian Peacock, Craig Egan, Brian Corcoran, Tom Centlivre, and Dean Pyers.



Photo from around the science fair.

*** Call for Nominations ***

- Do you enjoy networking with peers in your profession?
- Would you like to help provide exciting local programs?

We welcome you and your colleagues to apply for positions available in the Chapter in 2001. Please may contact any Officer or President Dean Pyers at dpyers@tir.com.

Up Coming Meetings

September - Supply Chain Management

October - Factory Flow

November - Student Chapter Joint Meeting

Meeting Notice Tuesday, July 18th Detroit Tiger Baseball Game



Meeting Notice Thursday, August 10th The Harbour Report - North America 2000



December - Holiday Party and Inauguration

Comerica Park facts & figures

Groundbreaking for the \$300 million project took place on October 29, 1997. More than 60 percent of the financing is private, with the rest contributed from public sources. In the time since groundbreaking, the design has continued to evolve. The resulting goal realized is a combination of a classic design for the seating area with amusement and entertainment features that are unique to Comerica Park.

The concourses

The concourses are among the most generous of any facility. The minimum width of the main concourse is 40 feet, with wider concourses in many areas. The upper concourse is approximately 34 feet wide. The general standard for concourses in existing ballparks is 32 feet in width. Concourses at old Tiger Stadium were between 17 and 27 feet on the lower level and measured 11 feet behind the last row of the lower deck and 11 feet in the upper level.

The Walk of Fame

Touring the main concourse, fans are taken through time on a tour of baseball and lifestyle history. The concourse is divided into different eras from the 20th century, and as the fan progresses on his or her walk, they move into a different time frame of history. Decade Monuments covering two decades each are placed throughout the concourse, towering from floor to ceiling and featuring artifacts from appropriate eras. Heading into the next century, plans call for "The Walk of Fame" to be incorporated into the upper concourse as well.

The scoreboard

Comerica Park features a main scoreboard larger than any other facility in existence. The face of the structure, in fact, is equivalent to the size of the face of the Fox Theatre Office Building facing Woodward Avenue (180' wide). The structure includes one video screen (42'x24'), one large black and white matrix board with the line score (64'x34'), and a color matrix board (42'x24').

An old-time, out-of-town scoreboard is placed at field level within the wall in right-center field, and a Pitch Information board alerts fans to the speed of each pitch thrown in the game.

See you at the ball park!

The Harbour Report, which was first published in 1989, measures assembly, stamping and powertrain productivity performances - plant by plant - for automakers in North America. The report also contains a financial chapter that examines each automakers' labor cost and profitability results.

Foreign-owned manufacturers Nissan, Honda and Toyota continued to have the most productive overall automotive manufacturing operations in North America in 1999, according to The Harbour Report North America 2000, the annual study released by Harbour and Associates, Inc.

Nissan led all 10 companies in the report in overall assembly labor productivity, just ahead of Honda. Honda finished No. 1 in stamping hours per vehicle (HPV), slightly ahead of Toyota. And among powertrain operations, Toyota was first in the overall hours per engine measure.

Meanwhile, Ford Motor Company's Atlanta plant finished as the No. 1 plant in assembly productivity, and Ford Twin Cities was tops among truck assembly plants. Atlanta's ascension to the top spot was the first time in the history of The Harbour Report that a U.S.-owned manufacturer's plant led the assembly rankings.

"While Ford's overall operations had what might be called a flat year in Harbour measures, it's certainly quite an achievement for Ford Atlanta to lead all assembly operations in labor productivity," said Ron Harbour, president of Harbour and Associates. "And Twin Cities also deserves recognition for leading the truck segment."

General Motors made the most progress of any company in the 2000 report as years of standardizing and implementing common systems finally hit home.

"Maybe GM's poor reputation has been its ally over the last few years," Harbour said. "Because its manufacturing prowess was generally discounted, GM has had the opportunity to work without scrutiny. What has been happening is quiet progress on all fronts, to the point that GM has transformed many of its facilities and processes into some of the best in North America."

Let's welcome Ron Harbour of Harbour and Associates!

Chapter Activity Report

We received a nice card from Jackie DeLuca:

"Senior IIE Chapter,

Thank you very much for choosing me as the recipient of the Irv Otis Award. The event at the Dearborn Inn was extremely enjoyable and I was honored to be there. I hope that I can bring to the Institute of Industrial Engineers what it has given me, opportunities, personal growth, and friendships. Once again, Thank You!"

Three IE's were honored during National Engineers' Week in February at the ESD Affiliate Council Gold Award Banquet. IE students **Heidi Savin** (UM - Ann Arbor) and **Jacqueline DeLuca** (UM - Dearborn) were the recipients of the Irv Otis Award (\$500). **Richard**



Anderson was proudly presented with our Distinguished Service Award.

Pictured from left to right, Jackie DeLuca, Richard Anderson and Heidi Savin. All were recipients of awards during National Engineer's Week at the ESD Affiliate Council Gold Award Banquet.

All three Award recipients have a lot in common. Besides being active and holding offices in their own respective IIE chapters, they also spend time with other volunteer organizations and activities:

- Richard Anderson also serves as Chair of the UM-Dearborn Engineering & Computer Science Alumni Society and co-chairs the Dearborn CROP Hunger Walk.

- Jacqueline DeLuca served as the student representative on the Executive Committee of the College of Engineering and Computer Science and assisted the school department in its recruiting efforts, including fund

raising and recruiting trips to area high schools with college faculty.

- Heidi Savin has been active with Alpha Pi Mu (the IOE honor society), Tau Beta Pi (the national engineering honor society) and Epians (an honorary engineering leadership society). She also volunteered at Teach Out!, Kid's Fair and Mott's Hospital, and mentored elementary students in Science.

After receiving the Irv Otis Awards, the students' were asked of their future plans after graduation. Heidi was planning to continue her education in Graduate School, focusing on Operations Research. Jackie desired to go directly into the job market in the systems engineering field. Best of luck to both of them!

Membership Activities

Congratulations to **Siddharth Chandramouli** from the University of Michigan Ann Arbor, who was awarded a Gilbreth Memorial Fellowship for the 2000-2001 academic year.

Detroit Chapter members spotted at the annual IIE Conference, Solutions 2000, held in Cleveland May 21-24:

Julie Irwin, Tej Jhamb, Bernice Jung, Dean Pyers, Jim Rains, and Steve Sullivan. Will we see you at Solutions 2001 in Dallas?

In the February Solutions Magazine:

- The "Quest for Best Practices" article written by **Michelle Moore Rodier**. Michelle works for Kelley Services here in Michigan.

- UM Ann Arbor **Professor Stephen Pollock** has been appointed to the Herrick Professorship of Manufacturing.

- The quotes from Detroit Chapter members **Joe Jankford** and **Jean Ann Larson** in the article "What Your Boss Really Wants".

In the April Solutions Magazine:

- UM students **Meredith Chan** and **Miguel Garrido** were honored with the Martin Luther King Spirit Award.

- **Vikas Jain** is one of the 15-members inaugurated to the IIE Solutions Editorial Advisory Board.

In the May Solutions Magazine:

- Ford ergonomics specialist **Allison Stephens** was pictured at the Applied Ergonomics Conference.

April's Pontiac Metal Fab Tour

by Bob Fitzgerald

The tour was very interesting. The hydroforming process was very simple. Pontiac receives metal tubes and turns them into assemblies such as Corvette frame rails, Chevrolet Malibu Engine Cradles, Radiator Supports, Cadillac Roof Rails, etc.

An example of the process: The received Corvette Frame Rail tubes (20+ Ft. Long Straight Cylinders) are delivered to the input end of the automated process. A robot picks up the cylinder, pushes it against a pre-bending die. This first station is where the tube begins to take shape. After the pre-bending, the robot then positions the pre-bent tube into the hydroform press. The ends of the tube are sealed, and a 5% oil 95% water solution is forced into the tube at up to 5000 PSI.

The function of the high water pressure is not to bend, but to keep the metal from deforming during the press cycle. After the water/oil is under 5000 PSI pressure, the upper portion of the press comes down and encapsulates the part - sort of like the part being contained in a mold. The press then forms the part, and very important - it pierces holes (as design requires). The holes must be all pierced at about the same time - since when the holes are pierced - the water pressure is reduced. The design of the press is such that most of the water is contained during the process. Occasionally they do have a major "spray". The next step after the press cycles, is robotic unloading, and transferring into a laser end cutting machine. After the ends are cut, the part is then loaded into a shipping container.

We were not allowed to take pictures in the Hydroforming area.



However we were allowed to take a group photo of the 17 people after the Pontiac Metal Fab tour.

March's Ergonomics Meeting at U of M Ann Arbor

by Dean Pyers

If you had joined the Detroit Chapter members and guests at the March 22 program in Ann Arbor, you would be able to answer these questions (and many more):

- 1) What percent of engineers in the USA have had some exposure to Ergonomics training?
- 2) Human Motion Capture systems use a series of cameras and sensors to record various angles our joints make during different motions. This data can then be used by programs such as the "Humosim" animation package to predict ergonomic stressors when designing a new job or changing the programmed motions. The database and algorithms that make up "HumoSim" is based on how many recorded motions?
- 3) Ford Motor Company has sponsored research at UM in the design and application of hoists and lifting equipment. How many years has Ford been a sponsor in this activity?

For more details on all the ergonomics research underway at UM Ann Arbor, visit the following web sites:

www.engin.umich.edu/dept/ioe/c4e

<http://umrerc.engin-umich.edu>

Answers:

- 1) 10 - 15 %
- 2) 25,000
- 3) 6 years. The University hopes to have some guidelines summarized and published soon, which will help guide designs and applications of hoists and articulating arms. Anyone who has ever purchased, installed, debugged, and then removed a hoist will want to read these guidelines!



Membership Report

2/05/2000- 6/02/2000

Detroit, MI CHAPTER 047

NEW MEMBERS

Mr. Sung H. Moon
Mr. Robert E. Weeks
Mr. John H. Bradford
Mr. Bradley C. Burchnell
Mr. Gavin W. Douglas
Mr. Joseph C. Hagan
Mr. Behzad Karim
Mr. Arnold C. Love
Mr. James C. Rucker
Mr. Victor D. Lloyd
Dr. Sara Merchawi

TRANSFERS INTO THIS CHAPTER

Mr. David S. Kim FROM: 068 Worcester MA
Dr. Bijay K. Nayak FROM: 191 Essex-Kent Canada
Dr. Jonathan Owen FROM: 819 Northwestern Univ
IL
Ms. Allison E. Vanderspool FROM: 092 Kansas City
MO
Mr. Taimour El-Cheikh FROM: 902 Univ of
Louisville
Ms. Melissa J. Gospodarek FROM: 906 Kettering Univ
Mr. Jeffrey Handoko FROM: 855 Ohio State
Univ
Mr. Mark A. Kieber FROM: 061 Metropolitan NJ
Mr. Thomas Kozina FROM: 044 Rochester NY
Ms. Warangkhana Sriwarom FROM: 872 Lamar Univ
TX
Mrs. Tara J. Wills FROM: 906 Kettering Univ

TRANSFERS OUT OF THIS CHAPTER

Dr. John R. Birge TO: 025 Chicago IL
Ms. Kristen Burnett TO: 003 Pittsburgh PA
Mr. John C. Hawley TO: 037 Peninsula CA
Ms. Julienne M. Menendez TO: 100 Delaware

Region 6 Student Conference

The Region 6 Student Conference was hosted by the University of Toledo on April 6 to 8th, with 90 students from Michigan, Ohio, Kentucky and West Virginia in attendance. Featured speaker at Friday night's dinner was Mr. William Marohn, a UT alumnus who became President, Chief Operating Officer and Vice Chairman of Whirlpool Corporation in Benton Harbor. Mr. Marohn spoke to the assembled students about the importance of setting goals and following through on them, and his belief that your performance during the first year at a new company may be the most important factor in determining your potential.

The First Place Technical Paper Award went to Ryan Kamerad of Western Michigan for "Study of Inpatient Surgical Processes at a Southwest Michigan Hospital". Western also won Second Place for Jason Hart's "The Design of an Assembly Method and Workstation for the 24-way CAM Lock". The award for the School that Traveled the Farthest went to Louisville, while West Virginia won the prize for School with the Most Attendees.

Your Detroit Chapter supported this event with a donation of \$150. Photographs from the conference are posted at: <http://www.eng.utoledo.edu/~iie/>

News From IIE Headquarters

IIE NAMES PURDUE PROFESSOR PRESIDENT-ELECT

According to IIE Immediate Past President Rich Hansen, "It is with deep regret that the IIE Board of Trustees accepts the resignation of John Birge, dean of the school of engineering at Northwestern University, as IIE president-elect because of pressing family matters."

Birge was appointed to the position following the untimely death of Eric Malstrom just three weeks after Malstrom was named president-elect during IIE's general elections earlier this year. The IIE nomination committee selected Purdue University professor Marlin Thomas as candidate for the position of president-elect on May 24; their decision was approved by the Board of Trustees. Thomas was chosen unanimously by both the nomination committee and the board, according to Hansen.

"I'm very honored to serve the IE profession," said Thomas. "We're all saddened by the circumstances under which I'm assuming the position, but I'm looking forward

to continuing with the transition to make the Institute a more customer-serving society for the profession."

Career Development

Company: Bank One

Position: Process Measurement Analyst

Position Description: Responsible for analysis, design and development of work flow simulation models in order to recommend cost effective strategies for use of technology to improve Bank One processing goals and meet customer expectations. Responsible for facilitating and leading teams in the evaluation and improvement of current business processes. Creates projects plans, engages the team, identifies "best practice", defines changes in policies, procedures, organizational design and the application of technology and documents and communicates progress of the initiatives.

Requirements: Bachelors degree. Minimum 2-5 years simulation and modeling experience and Business Process Re-Engineering experience with analysis design/redesign, development, integration and implementation of business process/systems. In-depth understanding of workflow simulation tools, specifically Meta software. Excellent oral communication skills and critical thinking ability.

Salary Range: \$50-70K Commensurate with experience

If you would like to pursue this opportunity please

contact: Aaron McClendon @ CRCG INC.,

1-800-501-2724 Ext. 222 or amclendon@crcginc.com

A major manufacturer of tools, hardware and fasteners for over 150 years is seeking an Industrial Engineer for its regional distribution center in Concord, NC. Areas of responsibility will include methods review and process improvement, facility layout, productivity and standards evaluation and safety. AutoCAD knowledge is a plus. Excellent opportunity for new grads or IE's with 1+ years experience. Please send resume and salary requirements to the following:

Michelle Wilder, CEO Inc,
301 S. McDowell St. Ste 1003
Charlotte, NC 28204

704-372-4701, 704-372-4707 fax
mwilder@ceo-inc-usa.com

If any Chapter member would like to post a job opening or situation wanted, please contact :

Greg Andrysiak at (248) 442-8607, greg.andrysiak@trw.com, or Ron Brzuch at rbrzuch@mediaone.net

ADVERTISEMENT

IIE Detroit Chapter 47 Members Can Save Money With This Membership Benefit

Citizens Insurance Company, headquartered in Howell, Michigan, is providing special group discounts for auto and homeowners insurance to IIE members through a special affiliation with ESD The Engineering Society of Detroit. Since the inception of this member benefit program in 1971, over 18,000 policies have been written, which clearly shows the success of the program!

Here is a summary of some of the special discounts that are available:

IIE Group Discounts Auto discount10%
Homeowner's Discount20%

Multi-Policy Discount ..take an additional 10% discount off **both** policies

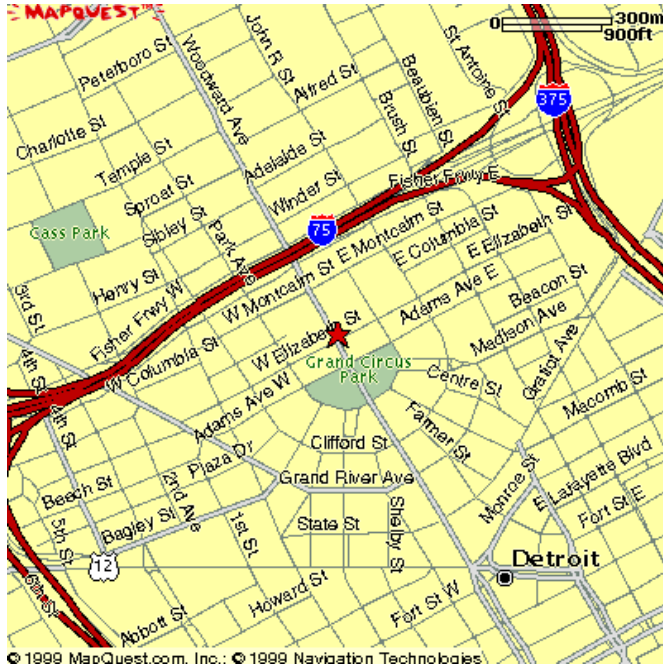
New Home Discount ... save up to 30%!

If certain qualifications are metas much as an additional 25% may be available!

We can also provide quotes for long term care insurance and for you classic antique cars, trucks, boats, and motorcycles.

This program is administered by Hartland Insurance Group of Auburn Hills, Michigan. Call **Hartland Insurance Group** at **1-800-682-6881**, or call you local Citizens agent for a free, no-obligations quote. When calling, be sure to mention that you are a member of IIE so that the special discounts will be reflected in your quotes.

Tuesday, July 18th Detroit Tiger Baseball Game

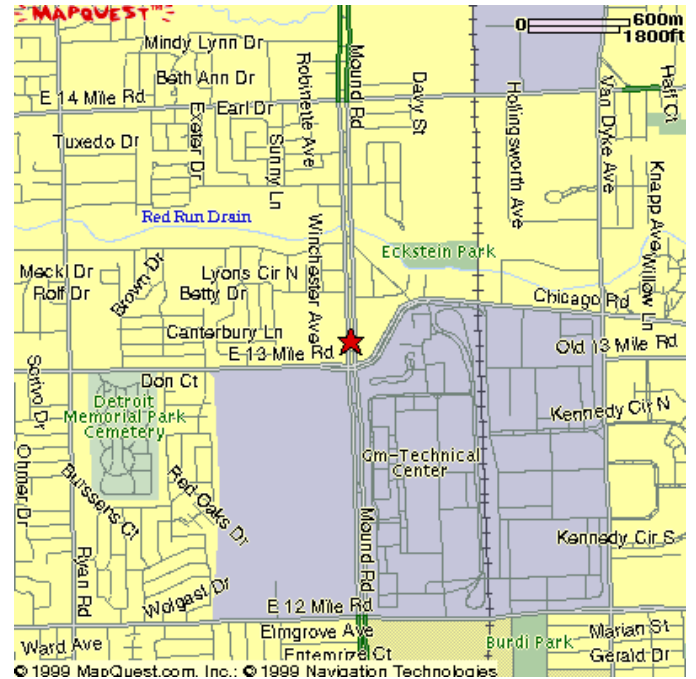


Comerica Park is located at 2100 Woodward Ave,
just south of I-75 (Fisher Freeway) and directly across
the street from the Fox Theatre.

Institute of Industrial Engineers #47
c/o Ron Brzuch
7247 Almaden Court
Canton, MI 48187

DATED MATERIAL

Thursday, August 10th The 2000 Harbour Report



The Gazebo Restaurant
31104 Mound Road at 13 Mile, Warren, MI 48092
(exit I-696 at Mound Rd, N to 13 Mi, NE corner)