

**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. 2

March and April, 2000

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Past President

Irv Otis
Central Michigan University
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Wednesday, March 22nd
Ergonomics: Human Simulation

The meeting at U of M Ann Arbor will be at 7:00pm on Wednesday, March 22. It will be held in the Industrial and Operations Engineering Building on North Campus - 1205 Beal Avenue. Attendees must be prompt as access to the building is somewhat difficult in the evenings. A detailed map shown on back page of this newsletter.

The evening will start with a half hour dynamic presentation by Professor Chaffin of the applications of human computer models in industry. Following this presentation, members of the IIE Chapter will be given a tour of the various laboratories in the Center for Ergonomics.

7:00 PM	Introductions and Food in RM. G699
7:30 PM	Overview of Center
7:45 PM	Overview of HUMOSIM
8:00 PM	Divide and Tour
8:30 PM	Drinks and Snacks, Adjourn

RSVP: by March 20th, to our IIE VOICEMAIL (313) 438-0205.

Tuesday, April 11th (RSVP before March 13th)
GM Pontiac Metal Fab Tour - Hydroforming

This April 11, 2000 plant tour is limited to 25 people, so sign up quickly. We will need to gather registration data by March 13th for this event, including your name, employer, and job title. This list will have to be sent to GM for approval prior to the tour.

Tour begins at 1:00 PM. Attendees should arrive at the main lobby by 12:30 in order to view the Safety Video. Plant Contact: Karen Johnson, 248-857-2150.

The plant is located in Pontiac at One Pontiac Plaza. Map on last page of newsletter. From parking lot, follow yellow footprints to lobby.

RSVP: by March 13th, to our IIE VOICEMAIL (313) 438-0205.

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Chapter President's Message

by Dean Pyers

A copy of the proposed IIE 2000 chapter model follows this President's message. It comes from a November 19th letter from Gillian Nicholls, Senior Vice President of Chapter Operations. I would encourage all members to learn more about this plan and send any comments you have to your Detroit Board or to the Institute.



The IIE 2000 proposal - a plan for significant changes within the Institute - was presented and discussed during the IIE annual conference in Phoenix in May of 1999. One part of that proposal was a discussion surrounding the model for local chapter operations. Two basic chapter concepts were discussed. One model would treat the local chapter as an optional benefit that may or may not be selected by the member, while the other would use a "franchise" approach that would permit chapters to operation somewhat independent of IIE.

Extensive feedback gathered from chapter officers and members over the next four months indicated that neither of these proposed chapter concepts was entirely accepted. Although chapter leaders recognized the need for change, they also emphasized the need to retain strong local chapters. There were concerns that even strong, thriving chapters could be harmed by completely optional chapter membership and that a franchise concept would place an additional burden on chapters. Based on this feedback, a new model for local chapter operations began to emerge.

At the Chapter Operations Board (COB) meeting in Atlanta, GA on October 21-23, 1999, the new approach was further refined and ultimately approved by the COB. This approach would accommodate the needs of and provide value to both chapters and individual members. The model was recommended to the Board of Trustees (BOT) for approval to proceed. The details of this approach will be forthcoming at a later date, but the following points are the fundamentals of this approach. The model balances the Institute's responsibility to best serve individual members with the basic need for strong local chapters in areas of high membership concentration.

Watch for more information as it becomes available in our newsletter or on a page at the IIE web site:
<http://www.iienet.org/chapters/chap2000.htm>

The proposed IIE 2000 chapter model would:

1. Revise/limit chapter boundaries to create realistic physical chapters. This step would assure that all members within a prescribed boundary of a physical chapter would be able to receive the personal contact benefits of belonging to a chapter. As new boundaries are created chapters will become more compact in geographic coverage allowing them to serve a more targeted group of members. Chapters will work with their Regional Vice Presidents to develop their new borders for COB approval.

2. Create At Large (Virtual) Chapter. Members outside the boundary of a strong physical chapter may choose to belong to physical chapter of their choice despite the distance. Otherwise members outside the new boundaries will be assigned to the At Large Chapter. The At Large Chapter will provide a networking opportunity primarily on-line for members with no access to an active physical chapter. It is anticipated that as the At Large Chapter develops, it will split into multiple virtual chapters to match the regional or language affiliations of the members.

3. Phase out inactive/unsustainable chapters. There are currently a number of inactive chapters whose members receive no real chapter benefits (meetings, tours, newsletters, networking, socializing, etc.). Those chapters not able to reactivate successfully after a transition period will be dissolved and the members assigned to the At Large Chapter.

4. Increase support to remaining chapters. In order to assure the financial viability of the remaining local chapters, the dues rebate of \$15.00 per chapter member would continue. Other incentives to encourage chapters to focus on membership growth and quality programming are being considered. These potential incentives include minimum dollar level guarantees, special cash bonuses, and other non-cash incentives. With fewer but stronger chapters it is anticipated that additional support, tools, and resources can be provided by IIE.

Though the operational details of this model continue to be developed, the essential points are

- Strong chapters will retain their core membership and funding, while under-served members will be provided a networking benefit not available in the current mode.

- IIE will no longer guarantee each member the benefits of a local physical chapter, since there are areas where we cannot realistically deliver them.

- Chapters will no longer be expected to provide services to members living far outside the range of reasonable travel distance.

Distinguished Service Award

The Detroit Chapter IIE will proudly present Richard Anderson with our Distinguished Service Award. Richard's award, along with the awards from 47 affiliate engineering societies, will be presented during National Engineers' Week in February at the ESD Affiliate Council Gold Award Banquet.



An excerpt of the presentation to be made at the Banquet is as follows:

"The Detroit Chapter of the Institute of Industrial Engineers is pleased to present the Distinguished Service Award for 2000 to Richard Anderson. A long-time member of the Detroit Chapter Board, Rich has served as Treasurer, Program Chair, Chapter President (1984-85), and National Conference Plant Tour Coordinator (1991). Rich has worked in data processing for Chrysler Corporation's Mopar Parts Division for 22 years, and also serves as Chair of the UM-Dearborn Engineering & Computer Science Alumni Society and co-chairs the Dearborn CROP Hunger Walk.

Founded in 1948, IIE is dedicated to serving the professional needs of all individuals involved with improving quality and productivity. IIE has 24,000 members in more than 80 countries, with 400 in the Detroit area.

An integral part of IIE has been the recognition of outstanding students, academics and those in industry. The Detroit Chapter is also pleased to announce that this year's Irv Otis Scholarship award winners are Jacqueline DeLuca from Uof M-Dearborn and Heidi Savin from Uof M-Ann Arbor."

Up Coming Meetings

- May - Supply Side Management
- June - no program
- July - IIE Outing, New Comerica Ballpark
- August - Harbour Report
- September - TBD
- October - Factory Flow

Membership Activities

Jim Kiser has retired from General Motors. **Jim**

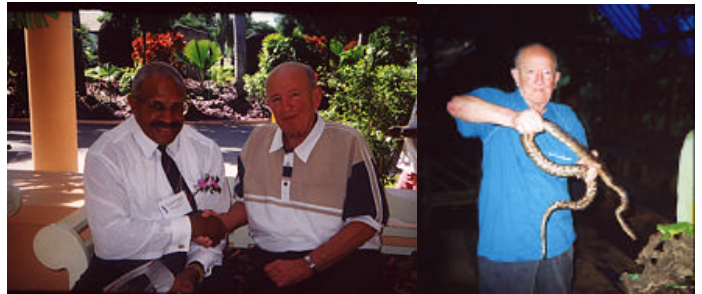
Rucker, Director of Industrial Engineering for GM North American Operations, will replace **Jim Kiser** on the Council of Industrial Engineers. The CIE is made up of representatives from 15 leading companies who advise IIE on the future of the profession and the services IIE can provide.

Dawn Jensen, past Detroit Chapter Treasurer, passed the P.E. exam. Congratulations, Dawn!

Congratulations to **Thomas Keyser** from Ohio University, our new Region 6 Vice President. **Eric Malstrom** was elected President Elect of the Institute. For the complete results of the national election, see: <http://www.iienet.org/election.htm>

Mike Waterman is Plant Manager at C & M Electronics, Farmington Hills.

Irv Otis, Detroit Chapter Past President, was in Fiji being the "Charmer". The left photo, Prime Minister Mrumbi of Fiji Island greets Irv at the Sheraton Hotel on 5-30-99. The right photo, Irv playfully engages with a local snake before its feeding time. Irv Otis presented a paper at the XVI Pan-Pacific Conference in May 1999.

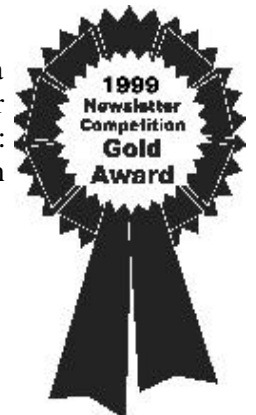


Newsletter Competition

The results are in! A total of 23 chapters submitted entries for the 1999 Chapter Newsletter Competition. Here are the Award Levels and the number of chapters for each award - Platinum (2); Gold (7); Silver (9); Bronze (5).

Congratulations! Detroit has won a Gold Award in the 1999 Newsletter Competition. Judge's comments: Well documented, nice overall touch of quality.

**LEAN AND CLEAN
MANAGEMENT LEADS
TO DRAMATIC
PRODUCTIVITY GAINS**



This is an excerpt of the presentation

made by Irv Otis at the XVI Pan-Pacific Conference on Fiji Island in May 1999. A full copy of this presentation is available on our website at <http://iiedetroit.org>.

Lean and clean is far more a management philosophy, it is the way everyone in every company and government must learn to act and think in order to thrive in the next decade and the next century. Workers, engineers, universities and policy makers must work together to preserve jobs and be competitive.

Every company can increase its profits and productivity dramatically by reducing pollution. Every company. The *technological* problems are not the biggest barriers, the *institutional* problems are - but all barriers can be overcome through lean and clean management.

Lean and clean companies reduce disposal costs, avoid fines, and minimize negative publicity. Such companies boost productivity by eliminating inefficiency, streamlining production, improving the workplace environment, and increasing wages. Lean and clean companies become supremely competitive. The environmentally proactive companies had higher return on investment, higher sales growth, and higher operating income.

Many practices of energy efficiency and clean production are familiar. The reason lean production is compatible with clean production is that both have the same goal; systematically reducing waste. In the case of lean production and Total Quality, the waste is *wasted time*, and the measures of inefficiency are high inventories, defects, and customer complaints. In clean production, the measure of inefficiency is pollution - air pollution, water pollution, and solid waste. If a company has successfully improved quality and reduced waste time, lean and clean management is the next step in the ongoing process of increasing profits and productivity.

Henry Ford's obsession with wasted resource and time, in his 1926 book *Today and Tomorrow*, reviews his many approaches to reducing waste.

These techniques - using every bit of a raw material, minimizing packaging, reusing packaging, replacing raw materials with reusable or recycled products, and recycling as much waste as possible - would not become standard waste minimization practices for sixty years. Terms such as *clean technology* and *clean production* would not come into widespread usage until the 1980s, after more than a decade of environmental regulations helped reveal the true cost of pollution and hazardous waste.

Ford understood the hierarchy of clean production. Avoiding waste is most desirable, and reusing waste - which finds value in the waste and avoids disposal costs - is next best. "Picking up and reclaiming" scrap is good; "planning so that there will be no scrap" is better.

In 1926 Henry Ford wrote what might be called the credo of lean and clean:

You must get the most out of the power,

out of the material, and out of the time.

In lean manufacturing, the people who do the value-added work are highly involved in the production process. Typically, workers are cross-trained to perform many different jobs. They work in teams and rotate job responsibilities on a regular basis. Workers make suggestions and have the authority to modify or stop a production line when quality problems occur. In some cases, companies' award pay incentives to workers for high quality and productivity as well as reaching high production quotas.

The quality system of lean manufacturing focuses on "building-in" quality rather than "inspecting-in" quality. Workers check the conformance standards throughout the production process. They also thoroughly understand and use standardized quality programs and procedures. Companies employ statistical process control practices to monitor and chart quality variations and to modify machine settings during production. In a lean system, product quality is set as the number one priority.

The material handling system of lean manufacturing is based on JIT production. Companies produce parts in small lot sizes, as they are needed rather than mass-produced and inventories for future use. To facilitate this type of production, companies keep set up times to a minimum and in process inventories as low as possible.

The majority of companies still clinging to mass production methods do so for several reasons. First, the setup of a lean production system requires assistance and time. A company that is not thinking in the direction of long-term growth will not have the patience to preserve until the new system, is firmly in place. Second, the process of transforming a company from mass to lean requires many physical procedural changes, often accompanied by major upheavals in company structure and processes. Third, the metamorphosis into leanness undergone by a mass production company must be desired, decided upon, and - most important - driven by its leader. If the CEO, president, or owners are unaware of or uncommitted to lean *management*, lean production is not likely to happen.

A mass company cannot become a lean one overnight; a rushed and superficial management effort will not yield the result. To support lean production, management must build, nurture, and support the logic and machinery that drives lean production. Lean management is actually a sophisticated practice built around several key conceptual and physical tools. It is about looking at your company in an entirely different way, describing its processes with a new vocabulary.

Productivity Called Price Stabilizer

Johnson Controls chief cites technology's role

Detroit Free Press February 8, 2000

BY TED EVANOFF / DETROIT FREE PRESS
AUTOMOTIVE WRITER

Technology is rapidly improving productivity in U.S. factories and holding down the need to raise prices, Johnson Controls Inc. chairman James Keyes told the

Economic Club of Detroit on Monday.

Keyes, whose Milwaukee-based company employs 10,100 workers in Michigan, referred to the DieHard auto battery as an example of technological improvements in U.S. manufacturing. He said Johnson Controls charged \$79.95 for the battery in 1988, compared to \$69.95 today, and hasn't had a major price increase on any of its products in 10 years.

"If you had asked me 10 years ago if we could go this long without a price increase, I would have said, "No way," Keyes said after his speech at the club's luncheon.

The address was Keyes' first since becoming chairman of the National Association of Manufacturers, a 15,000-member trade group based in Washington. His duties for the association are voluntary.

Keyes, a member of the Federal Reserve Board of Chicago, also talked about the future of the auto parts industry.

The controls in Johnson Controls refer to temperature controls, security systems and other building products. But automotive interiors and auto parts represented three-fourths of the company's \$16 billion in sales last year. About 63,000 of 95,000 employees worldwide are in the auto industry. The automotive group is based in Plymouth.

Johnson Controls has fostered productivity by buying about 30,000 personal computers for its plants and offices in recent years. That number is expected to double within five years because of the increasing affordability of computers, Keyes said. This has put a premium on finding workers who understand how to use the technology.

Those who do understand it are very productive, he said. For example, a plant mechanic can touch a computer screen and get a detailed guide on machinery maintenance, better than the old method of having to "thumb through reference manuals that may be out of date," he said.

Other manufacturers also have embraced computers, a large reason factory output has accounted for a third of the nation's economic growth in the last five years, although manufacturers have only 18 percent of the labor force, he said.

Computers also have allowed engineers and product planners to pass on ideas more quickly, Keyes said. He noted that in the last five years Johnson Controls has doubled the number of innovative products in its lineup.

Instead of relying entirely on its mainstay car seats for business, the company has been developing an interior safety package that includes child seats, microphones and a rear-looking video camera that enables the driver to see and talk to children in the back seats without turning around.

Keyes said Johnson Controls does not have an acquisition strategy to keep growing; rather, it is trying to grow by updating products and controlling costs.

Keyes noted automakers will continue to press large suppliers to cut prices. The pressure has been continuous since the early 1990s and is leading Johnson Controls to turn to its own suppliers for price reductions. It just formed a committee, to examine the trend.

This will lead to smaller suppliers closing and consolidating, Keyes said. His company hopes to deal with no more than a handful of plastics vendors in a few years, compared to more than 200 now.

Career Development

What I am currently looking for is a program manager for the Livonia, Michigan area that is one of our well known established companies in the Michigan area. They are an extruder of rubber and plastic products for the OEM automotive industry. They have kept an excellent reputation for great service and delivery on time. They also have 10 strategically located manufacturing facilities and a technical center with state-of-the art equipment. The salary ranges from \$40-up depending on the individuals background and experience. Good organizational and good communication skills a must. Staci Lair, National Staffing Group Ltd., 440-248-7261, 440-248-1832 (fax)

If any Chapter member would like to post a job opening or situation wanted, please contact the editor, Greg Andrysiak at (248) 442-8607 or greg.andrysiak@trw.com, or Ron Brzuch at rbrzuch@mediaone.net

Chapter Activity Report

by Charlie Richards

The chapter submitted its Chapter Activity Report (CAR) on February 14, 2000. This was the first report in the new IIE National format (see below). Our total score for the year was 73 out of a possible 100 points.

<u>Section Description</u>	<u>Score/Available</u>	<u>Percentage</u>
1 Plans & Operations		
Chapter Management	10/10	100%
Financial Management	7/10	70%
2 Chapter Programs		

Program quality 17/10 170%
 Program Member attendance 3/7 43%
 Program Non-member attendance 2/3 67%
3 Membership Communications, Growth & Retention
 Newsletter 5/5 100%
 Other Communications 5/5 100%
 Membership growth 0/7 0%
 1st year member growth 1/3 33%
4 Student Outreach / Community affairs
 Community participation 0/10 0%
 University region conference support 2/3 67%
 Other student outreach 5/5 100%
 Scholarship support 2/2 100%
5 Member/Chapter/Institute support
 Member/chapter support 8/10 80%
 Institute support 6/10 60%
Totals 73/100 73%

Membership in the Detroit Chapter improved about 1.5% since the last newsletter and now stands at 388 members. The Chapter continues to be solvent with positive cash flow and a debt free balance sheet.

Finally if you have any news items of note, things like member promotions, activities, awards, publications, or projects of interest to the general membership, please contact either Ron Brzuch (313) 337-8385, rbrzuch@ford.com, or Charlie Richards (248) 813-3928, charles_richards@kellyservices.com.

Membership Report

2/09/00 Institute of Industrial Engineers
 CHAPTER SUMMARY Detroit (MI) CHAPTER 047

388 TOTAL NUMBER OF CHAPTER MEMBERS
 28 TOTAL NUMBER OF PROFESSIONAL ENGINEERS

NEW MEMBERS

Mr. Khaled M. Mabrook
 Mr. Taher B. Patrawala

TRANSFERS INTO THIS CHAPTER

Mr. Travis A. Dahl FROM: 848 Rensselaer Poly Inst (NY)
 Mr. Salil M. Deshpande FROM: 860 Oklahoma St. Univ (OK)
 Mr. Vincent L. Kaiser FROM: 036 Toledo (OH)
 Mr. Gordon R. Lanker III FROM: 833 Western Michigan Univ
 Mrs. Tammy A. Merkel FROM: 006 Atlanta (GA)
 Mr. Peter H. Vagt FROM: 052 Akron - Canton (OH)

MEMBERSHIP INFORMATION

SEX
 315 MALE

68 FEMALE
 5 NOT STATED
 388 TOTAL

AGE RANGES

0 LESS THAN 20
 25 20 - 25
 48 26 - 30
 87 31 - 40
 79 41 - 50
 76 51 AND ABOVE
 73 AGE UNKNOWN
 388 TOTAL

DEGREES

5 Associate Degree
 4 Bachelor of Arts
 41 Bachelor of Science
 40 BS in Engrg
 125 BS in Industrial Engineering
 5 BS in Ind. Engr. Technology
 2 BS in Mechanical Engineering
 15 Degree Unknown
 3 Master of Arts
 35 Master Business Administration
 1 Master of Engineering
 40 Master of Science
 56 MS in Industrial Engineering
 35 Doctoral Degree
 12 Doctoral Deg in Indus. Engr.
 419 TOTAL

JOB FUNCTION

1 Corp Officials, General Mgrs
 2 Supv of Tech or Prof Personnel
 4 Engrs, Analysts, or Other Prof
 29 Educators
 50 Consultants
 7 Students
 49 All other Job Functions
 112 Management
 134 Engineers other than Mgmt
 388 TOTAL

MARCH MEETING NOTICE Ergonomics - Human Simulation

On March 22nd (evening) at U of M Ann Arbor: Ergonomics Program, we will feature a demonstration of the Workplace & Human Ergonomics Simulation package and a tour of the ergonomic labs.

The speaker will be Don Chaffin, G. Lawton and Louise G. Johnson, Professor and Director of the Center for Ergonomics. Professor Chaffin is one of the worlds premiere experts in the field of Occupational Biomechanics - he is the author of a textbook of that name

that is now in its third edition. Don has been the Director of the Center for Ergonomics for many years and has produced many outstanding publications and computer based analysis and simulation tools. A particularly notable tool is the University of Michigan Three Dimensional Static Strength Prediction Program. Recently Don has focused his attention on a major industry supported project aimed at the addition of naturalistic human motion to the 3DSSPP and the EAI "Jack" anthropomorphic model.

The meeting in Ann Arbor will be at 7:00pm on Wednesday, March 22. It will be held in the Industrial and Operations Engineering Building on North Campus - 1205 Beal Avenue. Attendees must be prompt as access to the building is somewhat difficult in the evenings. A detailed map shown on back page of this newsletter.

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7:30 PM	Overview of Center
7:45 PM	Overview of HUMOSIM
8:00 PM	Divide and Tour
8:30 PM	Drinks and Snacks, and Adjourn

models of GM vehicles. MFD also designs and builds the dies that are used to stamp or mold these parts. The division ships around 7,500 tons of parts to GM's 29 assembly plants each day.

There are nearly 30,000 employees who work in MFD's 17 locations play a critical role in the design, engineering and manufacture of GM cars and trucks, from the time the vehicle concepts are created to the time they roll off the assembly line.

The Pontiac Metal Center is responsible for steel and aluminum stamping, metal assembly, and other manufacturing operations, including axle and engine cradle assembly, roll forming and hydroforming, and weld tool and die construction.

The plant first began production in 1926 as part of the Oakland Motor Car Company and became part of GM's Pontiac Motor Division in 1932. During General Motors 1984 reorganization, the facility was assigned to Chevrolet-Pontiac-GM of Canada (C-P-C) Group. In 1987, C-P-C Pontiac assembly operations were suspended, and responsibility for pressed metal and engine operations was combined under one plant that became known as Pontiac Manufacturing Operations. In 1992, responsibility for these operations was assigned to the Cadillac/Luxury Car Division. The facility became part of GM Metal Fabricating in 1994 when the Division was formed.

Plant Manager: Don Wine
Employment: 2,000
Site Size: 316 acres
Sq. Ft. Under Roof: 3.7 million

APRIL MEETING NOTICE

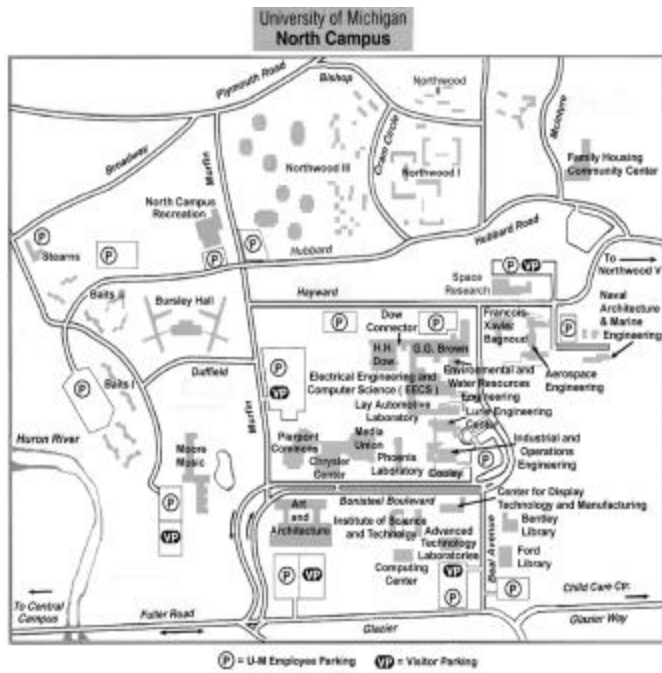
Plant Tour of Hydroforming Process at GM Pontiac Metal Center

On April 11th (early afternoon) there will be a plant tour at GM's Metal Fabrication Division (MFD) Pontiac Metal Center to view Hydroforming Processes. We will need to gather registration data by March 13th for this event, including your name, employer, and job title.

The Metal Fabrication Division (MFD) of GM takes raw sheet metal and stamps it into parts - such as doors, fenders, hoods - that are used to build approximately 50

Wednesday, March 22, 2000

Ergonomics:



Human Simulation

University of Michigan, Ann Arbor, North Campus
IOE, Industrial and Operations Engineering Bldg

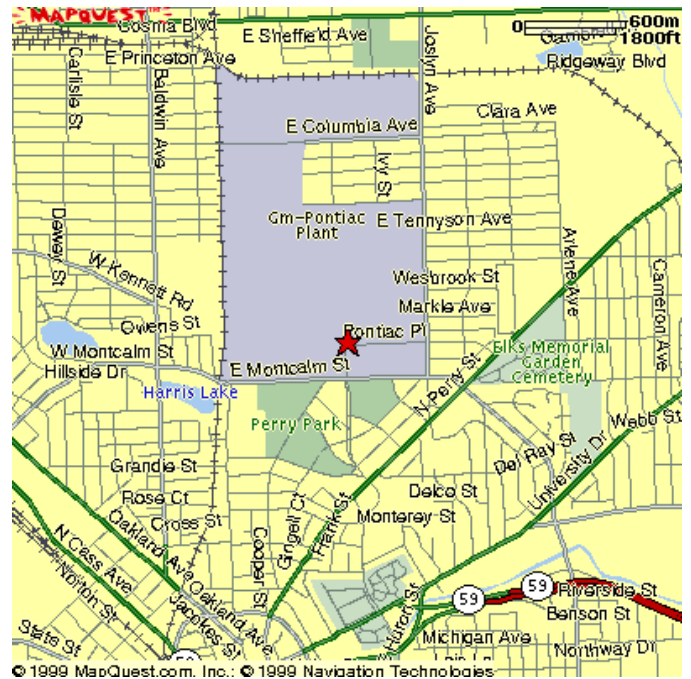
Institute of Industrial Engineers #47
c/o Ron Brzuch
7247 Almaden Court
Canton, MI 48187

DATED MATERIAL

Tuesday, April 11, 2000

(RSVP before March 13th)

GM Pontiac Metal Fab Tour -



Hydroforming

1 Pontiac Plaza, Pontiac, MI 48340