



ANNUAL ALUMNI NEWSLETTER

The University of Michigan College of Engineering DEPARTMENT OF INDUSTRIAL AND OPERATIONS ENGINEERING

A Word From the Chairman

Each year we offer a new excuse for not getting the newsletter to you sooner. This year it's a good one — the move to our new building (see below) came just at the start of the academic year, adding to the usual confusion of Crisping (Computer Course Registration for you old-timers) and simply cranking up another successful year.

Last year I asked you to react to the College's (and Department's) new emphasis on developing courses and research in manufacturing. Although some of you did take the time to send some thoughtful comments, most of our alumni and "friends" apparently thought the direction was appropriate for our department and so didn't respond. I find it interesting to note that in conversations with managers in manufacturing-related industry, a surprising number knew the IE's role as simply one of performing work methods or related time and motion studies. A casual glance at our curriculum, and those of our peers at IE departments across the country, shows that our students are being prepared to perform not only these bread-and-butter aspects of industrial engineering, but also economic analyses, production planning and scheduling, optimal allocation of limited resources, quality control, mathematical modelling, applied ergonomics and computer information systems design, etc. How many of you are in organizations that make efficient use of your educational background?

While we are on the subject of correspondence: our active Alpha Pi Mu chapter has started the process of mounting plaques in our conference room, honoring past faculty, student award winners, etc. Our archives seem to have been scrambled in the move to North Campus. We would appreciate a word from you as to who might have won various awards during the years, so these people can be suitably recognized.

A final word to those of you who saw fit to contribute to the Department's special gift fund, or to the Clyde Johnson Fellowship Fund. These are our major sources of student fellowships and scholarships, monies that can be quite helpful, as many of you know from personal experience. The College provides us with very little in the way of discretionary resources, and your contributions, made directly to the Department, truly serve to allow us to aggressively recruit and keep top students, continue our industrial contracts, and encourage scholarly efforts in new and challenging directions.

— Steve Pollock

Industrial and Operations Engineering Building

With all of the recent changes in your Department, perhaps the most noteworthy event has been the move to the new Industrial and Operations Engineering building on the University's North Campus. The move is part of the consolidation of all College of Engineering resources on North Campus. The dedication of a separate building to Industrial and Operations

Engineering is a reflection on the quality of programs offered by the Department and the achievements of, you, our alumni in maintaining our reputation for quality and excellence.

The Department completed its move to new quarters in November of 1983 with an open house for Alumni and guests (you should have received an invitation). The new I&OE building is the totally remodeled former Research and Administration Building located at 1205 Beal Ave. (behind the Cooley Lab). Departmental offices are on the 2nd floor, along with a conference room, library, student offices and the seminar room. The first floor houses departmental faculty associated with PRISE and the Center for Ergonomics, as well as other faculty and researchers from around the University. The basement houses various ergonomics laboratories, dark room, electronics shop and graduate student rooms.

We are very proud of the new building and feel that it reflects positively on our faculty, students and alumni. We hope that when you come to Ann Arbor on business or for a university related function, you would stop by to visit. We would be glad to show you around.

Gourman Report

Once again our department has taken top honors in the Gourman report, a national ranking of educational institutions across various disciplines. This ranking is achieved by surveying academicians within each discipline. Institutions are scored on four major variables: curriculum, faculty instruction, faculty research, and library resources. It is with some pride that we can announce that *your* department scored very well in this year's ranking. We were in fact *NUMBER ONE* among graduate programs in industrial engineering, number two in undergraduate programs, and among the top ten programs in operations research. The quality of our graduates as well as faculty were major factors in achieving these results, so congratulations.

Faculty Changes

IOE welcomes two new faculty this year. **Monroe Keyserling** is returning to the University of Michigan after a stint at Harvard. Monroe was an Assistant Professor in the Department of Environmental Health Sciences at the Harvard School of Public Health. His area of interest is in ergonomics and occupational safety engineering. **David Kelton** also joined the faculty this year. Dave comes to us from Kent State University where he was Assistant Professor in the Department of Administrative Science. His major areas of interest include computer simulation and stochastic operations research. **Shrawan Kumar** has been visiting during the past academic year. Shrawan is Professor of Physical Therapy at the University of Alberta. An expert in the field of biomechanical physiology, he has been working for the past year with the Center for Ergonomics.

Faculty News

Don Chaffin is in the process of completing a new book (in collaboration with Gunnar Andersson) "Occupational Biomechanics." This new text should be a major advance in the teaching of ergonomics in the United States. Don has again taken on the role of Director of the Center for Ergonomics and has just completed a year as president of the Association of University Programs in Safety and Health. He is also this year's recipient of the College's prestigious Attwood Award for outstanding performance as a senior faculty member.

Gary Herrin has received \$15,000 from Zenith Radio Corporation and \$55,000 from Firestone Rubber Co. to assist in solving some of their materials handling problems.

John Birge of the Dynamic Systems Optimization Laboratory has received a NSF grant to study Computation and Approximation in Stochastic Programming. John has also just recently returned from a visit to the International Institute for Applied Systems Analysis in Laxenburg, Austria.

Jack Lohmann has been awarded the Presidential Young Investigator Award from the National Science Foundation to further his research in engineering economics. He is currently involved in research in replacement economy decisions and decision making under uncertainty and risk.

Katta G. Murty has published a new book "Linear Programming" which was released by John Wiley last September. One of the early reviews on this book states that "it is a landmark contribution to the text-book literature in linear programming." Katta has also received an NSF grant to study linear programming and linear complementarity. He will also be lecturing in a Summer Institute being organized in collaboration with the Indian Statistical Institute.

Student Activities

Institute of Industrial Engineers

The local chapter of IIE continues to help industrial engineering students make the most of their experience at the University. The chapter has over 150 members, more than 50% of the undergraduate student body. The newly elected officers for 1984 are:

Larry Sully, President
Susan McDonnell, VP Programs
Ken Knister, Executive VP
Cathy Jakubiec, VP Commun.
Jeri Long, Treasurer
Andy Sanford, VP Membership
Dan Hamburger, VP Chapter Dev.
Len Kumm, VP Fundraising
Stacy Reifeis, VP Luncheons

The chapter sponsors luncheons with speakers from various industries (alumni are welcome to volunteer for this rewarding activity), social gatherings, and student projects. Every year the chapter presents an award to an industrial engineering student who has made a contribution to the profession. This year's recipient of the Walton M. Hancock Award was Cecilia Fellin for her work in coordinating the 1983 IIE student conference held at The University of Michigan.

Alpha Pi Mu

Alpha Pi Mu (APM) is the Industrial Engineering Honor Society for junior and senior undergraduates. The chapter now has new offices in the IOE building thanks to the efforts

of Paige Zimmerman, the Fall 1983 President. This year's officers for Alpha Pi Mu are:

Ken Knister, President
Jennifer Ries, Secretary
Larry Jonas, Executive VP
Nancy Gallagher, VP Commun.
John Strek, Treasurer

Each member of APM performs some service work for the department as part of their initiation. Of especial interest is John Strek's work in researching the accomplishments of Wyeth Allen, the founder of Industrial Engineering at Michigan and the namesake of the chapter's student achievement award. John has written a biographical sketch of Prof. Allen to be included on a plaque in his honor.

One of the chapter's major projects this fall will be the "Alumni Forum" where alums will be invited to return to the University and share their experience and advice with current students. Alumni interested in participating are asked to contact Alpha Pi Mu, % the Industrial and Operations Engineering Dept. or you can call (313) 764-6473.

Computer Assisted Engineering Network

If you visited the College of Engineering recently, you probably noticed a subtle change, the proliferation of computers and micro-computers everywhere. The College is at the forefront of the computer revolution and the Department of Industrial and Operations Engineering is very much a part of the excitement.

In a move designed to maintain the University's role as a leader in the computing field, the College of Engineering has begun to build what is called the "Computer Aided Engineering Network" or CAEN. The goal of CAEN is to provide students access to a network of micro-computers located all over campus. Eventually there will be roughly one CAEN computer for every three engineering students.

In addition to providing virtually unlimited student access to micros, the CAEN plan also provides funds to supply each full-time faculty member with a micro-computer for his/her office. The types of micro-computers chosen for the CAEN project include the IBM PC and XT personal computer, the Apollo computer, the Apple Lisa and the new Apple Macintosh computers. One of the goals of CAEN is to maintain a network of "state of the art" computing machines, with other systems being evaluated for use in the CAEN network.

As part of the overall University strategy to maintain leadership in computer assisted education, the College and Department are participating in a special arrangement with Apple Computer Inc. to make available Apple products to the university community at a very substantial cost savings (40%).

One of the major computer related benefits of the new IOE building has been the installation of a Secondary Communications Processor (SCP) to provide direct access to the Michigan Terminal System, MTS. Up to 40 terminals may be connected to the SCP. These terminals can then communicate with MTS in the same way that terminals in the various computing centers do. The system has 30 connections completed at the present. When fully operational virtually every office in the IOE building will have direct access to MTS. This is a far cry from the days of waiting in line at NUBS for access to the system.

For those without terminals SCP provides another benefit. By connecting a personal computer to SCP, it is possible for a PC to communicate with MTS. This allows files to be easily

transcribed between MTS and personal computers. In short, SCP improves access to MTS and increases the versatility of personal computers. The result is that students, faculty and staff are becoming computer literate to a degree never before possible.

PRISE/ISDOS

A new organization has become part of the Department of Industrial and Operations Engineering over the past year. PRISE, the Program for Research in Information Systems Engineering, has taken the place of ISDOS, Information Systems Design Optimization, which has been "spun off" as an organization incorporated outside the University. PRISE was originally one of many ISDOS projects but was founded in 1983 as an independent program. The program is directed by *Daniel Teichroew* who has been a professor of Industrial and Operations Engineering at Michigan since 1968. Dan was chairman of the Department from 1968 to 1973.

The PRISE program maintains its own computer installation site, known as the PRISE Computer Center, on the first floor of the I&OE building. The Center maintains an IPL 443 mainframe and a VAX mini to support its research activities. In addition, some work is also done on the Michigan Terminal System.

PRISE's current research projects are in the areas of Artificial Intelligence as it pertains to information systems design, including expert systems use in information system engineering. Another area of research is in the development of a methodology to use a 4th generation language system in the development of information systems. Reverse engineering is yet another topic.

Because PRISE is a new organization, it is still in the process of generating research topics and areas. As time goes on there is no doubt that the list of research topic areas will increase and expand.

Center for Ergonomics

A number of changes have occurred at the Center for Ergonomics over the past year. Perhaps the most important development is the establishment of the Center as an independent research entity in the College of Engineering.

While continuing its heavy research and training activities in Occupational Ergonomics, and maintaining a strong relationship with a number of corporate sponsors such as Firestone, Zenith, Marathon and Gulf, the Center has received a four-year contract with Ford Motor Company to improve the ergonomic design of Ford's Body and Assembly plants. This project covers a number of areas including: medical surveillance, slip and fall prevention, biomechanical job analysis methods, computer aided job design and cumulative trauma prevention.

The Center is also part of the designated Educational Resource Center for Occupational Health and Safety Engineering. The ERC grant is shared between the Center for Ergonomics and the Environmental and Industrial Health Department of the School of Public Health. The grant supports the training of master's and doctoral students in occupational safety engineering, industrial hygiene and occupational medicine as well as providing training and continuing education programs in occupational health and safety for individuals and organizations.

Dynamic Systems Optimization Laboratory

The Dynamic Systems Optimization Laboratory is a joint research venture by Professors *James Bean, John Birge, Jack Lohmann, Katta Murty, Stephen Pollock, Robert Smith and Candace Yano*. The purpose of the Lab is to facilitate research on systems optimization theory and the modelling of problems involving dynamic sequential decisions over time.

Current and expected funding for the members of the laboratory is expected to total approximately \$200,000 this year. Funds for the group are being provided by the National Science Foundation, Urban Mass Transit Administration, General Motors, Rackham Graduate School and the College of Engineering. Of particular interest is the work being done on Real Time Adaptive Scheduling for General Motors. The results of the research are expected to be applied to the "Factory of the Future" being developed by the company.

Alumni News

Roger W. Kallöck (61), chairman of Cleveland Consulting Associates, has been elected to the post of president of the National Council of Physical Distribution Management. He has been on the NCPDM's executive committee since 1980 and his election as president completes a number of years of dedicated service to the organization. Besides his degree in Industrial Engineering, Roger also holds an MBA from Michigan and is a co-founder of Cleveland Consulting Associates.

Dave W. Pethick (54) has been named Vice President of the Automotive Group at the Marmon Group. Dave is group executive of a number of manufacturing companies reaching from Germany to Australia. Dave is also an avid yachtsman and is the first back-to-back winner of his class in the Mackinac Yacht race.

James D. Burggraaf (BS 70, MS 72) has been promoted to director of manufacturing for Bissell Inc. in Grand Rapids, Mi. He was previously manufacturing engineering manager at Bissell and will now be responsible for all production and engineering operations.

Terry Welf (BS 70, MS 72) is now working for Baxter-Travenol of Chicago in their Cost Engineering group.

Larry Coates (78) has been appointed Manager in the Management Information Consulting practice of Arthur Andersen & Co.'s Detroit office.

Darryl L. Giannetti (71) is Vice President of Design Components Inc. in Medfield, Ma. which is involved in sales and marketing of linear motion products for the automation field.

Jeff Lebow (81) recently joined Robot Systems Inc. in Atlanta, Ga. where he is an Applications Engineer. Jeff formerly was with Weyerhaeuser.

Chakor Doschi (MS 72) recently visited Ann Arbor with his wife and children. Chakor is Joint Managing Director of Walchandnagar Industries, Ltd. in Bombay, India.

Harold K. Sperlich (51) has been named President of Chrysler Corporation. Harold noted when giving the commencement address to the Engineering Class of '84 that he "worked hard (at Ford) . . . they made me vice president . . . then the darnedest thing happened, I got fired." Harold recommended that today's graduates not be too sanguine about what the future holds but be prepared to continue to persevere in the profession.