

IOE ALUMNI NEWSLETTER

THE DEPARTMENT OF INDUSTRIAL AND OPERATIONS ENGINEERING THE UNIVERSITY OF MICHIGAN FALL 1991

From The Chairman

It is a pleasure to have the opportunity to inform you once again about activities that your department has been involved with over the last year and to let you know about some of our plans for the future. Since the last *IOE Alumni Newsletter* went to press, several of our faculty have won honors, we are delighted to have two new faculty on board, we have begun an examination of our curricula, and we have continued our very active development activities. These interesting issues will be discussed elsewhere in this *Newsletter*. Let me now address two issues of interest and importance to the Department, rankings, manufacturing, and related matters.

Rankings: An Update

In their 29 April 1991 edition, *U.S. News & World Report* ranked graduate engineering schools and departments. Michigan's College of Engineering was ranked 5th (2nd in public institutions behind Illinois), up from 9th the previous year, and the IOE Department remained ranked 3rd among industrial engineering departments (behind Purdue and Georgia Tech and ahead of Stanford and U.C. Berkeley). As we reported last year, Gourman has ranked us 1st or 2nd nationally in graduate and undergraduate programs, respectively, which continues to support the conclusion that IOE is clearly one of the two or three premier departments of industrial engineering in the Nation.

Design, Manufacturing, and Management, The Forthcoming Capital Campaign, and Interactions with the School of Business Administration.

We are all aware of the fact that the U.S. suffers growing competitiveness problems in such essential industries as automobiles and electronics. The most visible signs of problems in the auto industry are declining market share and loss of manufacturing jobs, resulting from intense international competition in the areas of quality, time to market, and cost. There is growing acknowledgement that the effectiveness of the U.S. as a world power would be limited significantly without a strong, domestically-located design and manufacturing capability in critical industries, such as autos and electronics.

The fact that improved quality, time to market, and cost require both engineering and management excellence has stimulated growing interest at U.S. colleges and universities nationally in design, manufacturing, technical management, and their effective integration. New graduate programs at MIT (the Leaders for Manufacturing Program), Stanford (the new Sloan Foundation program in manufacturing), Northwestern (the Masters in Manufacturing Management (MMM) Program), and elsewhere have resulted from this interest.

Because of the University of Michigan's location (80% of the Nation's manufacturing base is within a 500 mile radius of Ann Arbor) and the significance of manufacturing for the State's economy, the College is especially interested in contributing to national goals related to design, manufacturing, technical management, contributions that the Department is well positioned to make. As an example of the College's commitment, manufacturing is one of the four themes that have been selected for the College's part of the University's Capital Campaign, a multi-year, major development effort that the University is planning to officially kick off early in the next academic year. As another example, the College's National Advisory Committee (NAC) held its fall meeting with the Visiting Committee of the School of Business Administration (SBA) to discuss and set the stage for the development of a strategy for manufacturing, various aspects of which might involve collaborative activities between CoE and SBA. (The NAC is a group of national and international industrial leaders who meet twice a year to advise the Dean on strategic issues of importance to the College and to the profession; the Visiting Committee is a similarly structured advisory group for the SBA.) The Department faculty and I look forward to playing appropriate roles in this effort as it unfolds. I believe that IOE is particularly well-positioned, perhaps uniquely so, to contribute to the pool of broadly-trained, technologically-competent leaders who will be well-equipped to face tomorrow's complex problems and their concomitant opportunities, including the opportunities and problems associated with manufacturing. I would be delighted to hear your comments on these topics.

In general, we are interested to hear from you on all subjects of interest and to print observations that you wish to share with your fellow alumni. Also, we appreciate your continued support of the Department by lending your financial support to the Department. If you wish to donate in response to mail or phone solicitations from the College, we urge you to specify

that you wish your gift to go to IOE. These gifts are important to the Department's scholarship and fellowship funds, special projects, seminar series, undergraduate student society support, etc., and will be deeply appreciated.

Let me thank all of you for your continued interest in, and support of, the Department. The welcome mat is out whenever you are in the Ann Arbor area, and I look forward to work with you in the years ahead to continue the excellent tradition of engineering education in IOE and at the U - M.

—Chip White

Development Committee

The IOE Development Committee, consisting of Don Chaffin, Dan Teichroew, Steve Pollock, Bob Smith, and Walt Hancock, has had an active fall. On October 18, we hosted a dinner meeting and presentation by Chip White and George Perrett, President of the IOE Alumni Academy, concerning the IOE program to those alums who were in town for the All-Alumni Weekend. Fifty alums plus many non-IOE alums who were interested in the program attended. In November (8 and 9), the committee helped organize for the department a Ph.D. alumni reunion. Twenty-five Ph.D. graduates attended the Friday evening dinner and the Saturday morning sessions. Steve Pollock, Chip White and J. Michael Moore (Ph.D. 1967) gave presentations and lead the discussions.

On both occasions, the faculty were very pleased to hear of the alumni's activities and successes since graduation. For everything we heard, IOE is alive and well and there are many opportunities to do even better.

—Walton Hancock

The Alumni Academy Report

In 1991 the Alumni Academy continued its mission: (1) to represent alumni and business and industry views to the department; (2) to provide a direct link to the students through alumni participation in academics; and (3) to provide a link to the department, faculty and chairman for all alumni. In 1991 we added several new members, including some not from the immediate Ann Arbor area who were still able to attend two academy meetings this year. Meetings are held on Saturday mornings in the spring and fall (usually May and September). Each new member arrives espousing the value of the "applied" side of the IOE curriculum. This emphasis has lead the IOE alumni to be a primary source of projects for IOE 424, the senior projects course. The course continues to be of great benefit to the students and project sponsors. Also during 1991, alumni contact with students continued on two fronts. First, several academy members attended an Alpha Pi Mu meeting where they discussed how their IOE education has been applied to their professional activities. Second, an academy member, Andy Crawford, has been teaching an elective course in entrepreneurship, IOE 491, that has become very popular. Plans are underway to make this course a college wide offering in the 1992-93 academic year. Finally, the Academy is beginning to explore greater participation in the development area by actively supporting the new engineering campaign where the IOE department will be the benefactor of a new building addition. We are also becoming more familiar with the specific needs of the department for student scholarships and special projects. The next meeting of the Alumni Academy will be in May 1992 at the IOE building on North Campus. Alumni and faculty are encouraged to attend, find out what is happening with the academy, and renew acquaintances with friends.

Alumni interested in membership in the Academy can contact Mike Zonneville (Secretary) at (313) 665-4809, George Perrett (President) at (313) 761-8560, or

Jeff Liker, Faculty Liaison at (313) 763-0166 for more information.

—George Perrett, President

Jeff Liker is the Co-Director of a Grant to Help America Compete in Global Economy

The University has received a \$1.8 million grant from the federal government to help American industries understand how the Japanese manage technology. The goal: to help America better compete in the global economy.

"American manufacturers recognize the Japanese competitive threat and more than a few are changing the way they work by incorporating Japanese manufacturing practices," said political science Professor John C. Campbell, who will direct the program. "But we have learned too little from Japan, and implemented less, and we are quite unprepared for future competition."

Co-directors of the program are John E. Ettl, Director of the U-M Office of Manufacturing Management Research, and Jeffrey K. Liker, Associate Professor of Industrial and Operations Engineering.

"Multidisciplinary efforts such as this are rare in university settings, but problems of industrial competitiveness are too complex to be handled by a single discipline and require multiple perspectives," Liker said.

The U-M was one of four institutions (out of 25 applicants) to be awarded support by the Air Force Office of Scientific Research, which will administer the United States-Japan Industry and Technology Management Program.

"The United States can significantly benefit by understanding, in detail, the management and business practices used by Japan in the areas of science, engineering and manufacturing," said the Congress-

sional committee that established the program.

The program is intended to prepare American engineers, managers and scientists to learn from their Japanese counterparts and to help keep American government and industry abreast of Japanese developments in the management of technology.

"Located as we are in America's industrial heartland, faculty and administrators at the U-M are acutely aware of these problems," Campbell said. "We are particularly competent in several areas central to this project, with close ties to the automotive industry, both in the United States and in Japan; major facilities for research and training in manufacturing technology and its implications for global corporate strategy; and extensive experience in executive and continuing education, including numerous programs dealing directly with Japan."

Among other initiatives, the U-M project will work to develop degree programs combining engineering disciplines with Japanese studies and encourage students to learn Japanese through fellowships for intensive summer language programs and through experimental courses developed "to produce engineers and Japan-expert managers who are competent in all components of the language", Campbell said

Another aspect of the project will focus on research on product development in the automotive industry, global technology strategies and barriers to crosscultural learning about technological management.

The project will also seek to develop internship opportunities in Japanese enterprises for U-M science and engineering students, similar to a program in place for several years for U-M business students.

"Experience in a Japanese organization is important to full competence in dealing with Japan, and in opening channels of communication that can last throughout a

technical or managerial career," Campbell said.

Outside the U-M, the program will provide executive and continuing education activities for scientists, engineers and managers in industry and government, including laboratories sponsored by the Departments of Defense and of Energy. The program, due to begin this month, will involve scholars at the Center for Japanese Studies, School of Business Administration, College of Engineering, Office for the Study of Automotive Transportation in the U-M Transportation Research Institute and Department of Asian Languages and Cultures.

—From *The University Record*, October 14, 1991, Terry Gallagher

Program in Occupational Safety Engineering

The IOE graduate program in Occupational Safety Engineering has received grants from the National Institute for Occupational Safety and Health (NIOSH) totaling \$140,000 for the 1991-92 academic year. While funding for these competitive grants has been reduced in recent years, the IOE department continues to receive the largest award in the nation among all competing safety engineering programs.

NIOSH grants are used to support the training of Master's, Ph.D., and post-doctoral students who plan professional or research careers in Occupational Safety and Ergonomics. Trainees receive tuition and a monthly stipend to partially offset educational and living costs. Four IOE graduate students are appointed as NIOSH trainees this year. In addition, the grant supports library and laboratory facilities in the IOE Building.

For additional information on this program and current students, contact Professor Monroe Keyserling.

Grant From Ford Motor Co. Has Goal of Controlling Physical Stress in Plants

The Center for Ergonomics is continuing its third year of a four year grant from Ford Motor Company. The 1991-92 funds will support six ergonomics research projects geared toward minimizing physical stress on the job:

—Creating design guidelines for workstations where hand tools are used;

—Developing faster and more accurate methods of entering worker postures into CAD (computer-aided design) systems;

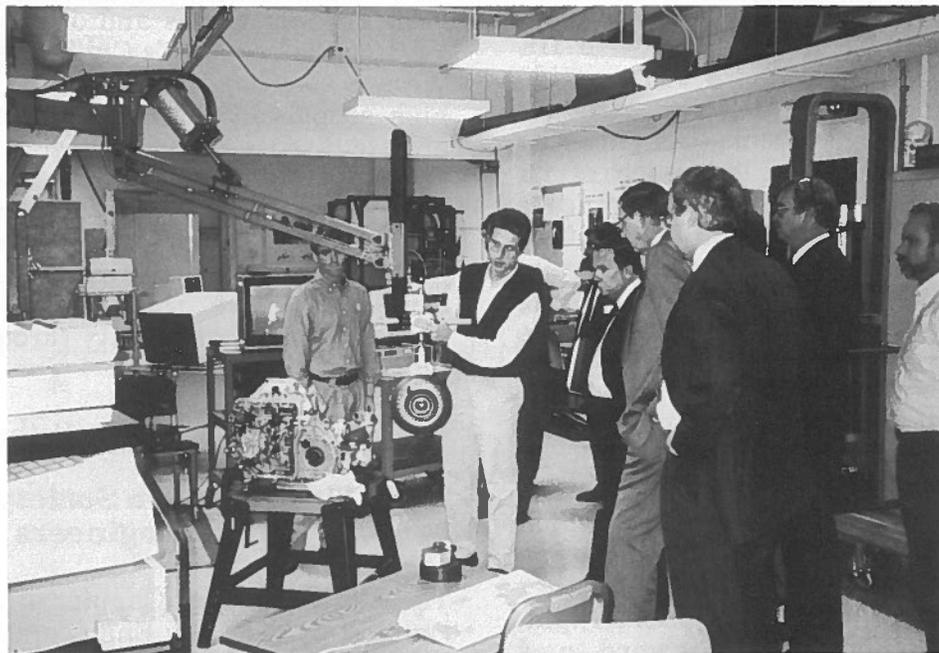
—Refining methods to measure hand force in the use of material handling devices and analyzing the biomechanics, energy expenditure and time required by the different devices;

—Evaluating and measuring a variety of postures in manufacturing operations;

—Studying the effects of poor ergonomic design on product quality; and

—Developing and evaluating job analysis procedures to identify ergonomic problems in the workplace.

Manual Materials Handling Assist Devices Laboratory



The demonstration is being performed by Marc Resnick (Ph.D. student in IOE) and Ulrich Raschke (Ph.D. student, Bioengineering) for a group of Ford Executives, with Professor Don Chaffin observing. Ford has been a major supporter of this laboratory. The laboratory provides a means to simulate and study how workers move large or heavy objects with the use of a variety of material handling aids. Through such studies we hope to develop better ergonomic guidelines to improve the design of such devices in the future.

The Student Organizations

Note: The student groups are always interested in having alums return to campus and present a short luncheon topic about their company or current topic in the area. Any alumni wishing to contact any of the student organizations may do so through Jolene Glaspie at (313) 763-1332.

Alpha Pi Mu

Alpha Pi Mu has begun to plan and coordinate yet another year of activities focused on understanding the broad base of knowledge provided by industrial engineering and on enriching our interaction with the department, the college, and the community. In conjunction with IIE, we have already held a successful faculty/student barbecue to help professors, staff, and students get acquainted with each other early in the semester. In addition, we have collaborated with IIE and ORSA on Tech Day, a college-wide event sponsored by UMEC to introduce visiting high school students to engineering and allow them to explore each of its disciplines. The three societies manned a booth in the EECS atrium with other departmental groups and guided tours through the IOE building while answering questions and giving information to interested students.

This year we will be organizing several academic information events which we have done in the past. The MBA vs. MSIOE Program is an event at which information is given in regards to choosing a direction of masters study in either business, IOE, or both. IOE Options Night, which is mainly geared toward new students in the department and undeclared engineers, presents professors from different disciplines within the IOE department speaking on their areas of interest and the classes that are offered in each. The Alumni Forum is an evening spent with graduates of the department who return to give current students an idea of the opportunities that exist for IOE's and relay useful advice on how to prepare for them.

In order to help our peers and to maintain a standard of excellence in the department, Alpha Pi Mu has a committee of people who provide tutoring to underclass persons in 300 level IOE classes and core engineering classes.

Alpha Pi Mu is also concerned with reaching out to the community to help those in need. One way we are accomplishing this is through the continuation of the can drive that has proven successful in the past. We have two large collection displays, one in the EECS Atrium and another recently added in the blue lounge in GG Brown. Proceeds from the returnables will be given to a local charity organization still to be voted on by the membership. Another philanthropic endeavor in the works is spending time with people in the community who are often forgotten in the day to day hustle and bustle. A committee is currently looking into scheduling visits to local nursing homes and orphanages, the VA Hospital, or Mott's Children's Hospital. We are also hoping to communicate with high schools in the Metropolitan Detroit area to discuss the possibilities of sending groups of students to speak about engineering and IOE to future college students. Throughout the year, we hope to use these activities and events as a way to continue active interaction with the university and community through education, service, and fun.

—Bethany Weeby

The American Society of Safety Engineers

The Greater Detroit Chapter of the American Society of Safety Engineers sponsors a student section of ASSE through the IOE department. The focus of the student group has been to expose students interested in a career in safety to the many facets that the field has to offer. This has been accomplished through guest speakers and plant tours, dealing with topics such as ergonomics, product safety, insurance company consulting and support, plant engineering, and industrial hygiene.

Professors James Miller and Monroe Keyserling are the faculty advisors.

In the past two years, ASSE has directed much of its programming to meet the needs of students in both Industrial Hygiene and IOE programs. A separate Industrial Hygiene student chapter was formed last year and joint meetings with ASSE were held during Winter term. This year, the industrial hygiene chapter will function independently. The ASSE student section will be restructured to encourage greater participation from the undergraduate students, since the number of graduate students participating has been substantially reduced. Speakers have been invited to present a variety of topics in conjunction with Professor Miller's IOE 439 Safety Management course during the Fall '91 term. Special Winter '92 term activities may include a plant tour and joint meetings with the Greater Detroit Chapter. In addition to helping students understand various facets of the safety field, ASSE offers students unique assistance in finding employment. ASSE's Jobline newsletter provides a monthly listing of safety and health related career opportunities and job openings throughout the country, including many entry level positions. Students can also place an advertisement in Professional Safety free of charge. This journal has been the most widely read periodical in the field. Several Michigan students have used these services in the past with positive results.

—Paul Adams

Institute of Industrial Engineers

The IIE wishes to announce their 1992 officers: President, Jamie Armistead; Vice President Kevin Vilet; Treasurer Doug Donaldson; Program Chairs Diana Didia and Maggie Ruckel; RAG Chair Bethany Weeby; Secretary Pam Crowley; Activity Chair Mike Naif; Membership Chair, Jenny Koch; UMEC Rep. Heather Bandkau; and Publicity, Todd Barber and Debbie Caslisi.

—Jamie Armistead, President

Operations Research Society

Our local chapter here at the University of Michigan is a small, but dedicated group of graduate and undergraduate students from IOE and other engineering departments. We are currently working on increasing the diversity of our group by recruiting students from departments outside of the College of Engineering who may have an interest in Operations Research. Presently, we are focusing on the Mathematics department. We hope that by integrating these students into our group, we will gain some new perspectives and a wider body of knowledge to work from.

Our goal this semester is to spread the word about Operations Research. We are currently developing a seminar which we can present to students and even secondary school teachers to promote a better understanding of Operations Research, its methods and applications. In the future, we hope to acquire and work on projects that could benefit from the application of Operations Research methods. We meet every Friday, and we welcome anyone who wants to find out more about Operations Research or has ideas to contribute.

—Scott Denmark

Faculty Focus

James Bean is studying match-up scheduling funded by a three year National Science Foundation grant. He continues to direct the National Needs Grant from the U.S. Department of Education.

John Birge has presented the department's proposal to host the 15th International Symposium in Mathematical Programming at the 14th ISMD in Amsterdam in August 1991. The proposal won the unanimous approval of the Mathematical Programming Society's council over the competing proposal from Georgia Tech. The meeting will take place in August 1994.

Don Chaffin was honored with the prestigious David M. Baker Award by the Institute for Industrial Engineering. The award was presented at its May 1991 annual meeting in Detroit and is given in recognition of outstanding contributions to industrial engineering research. During his 23 years in the field of industrial ergonomics and biomechanics Chaffin has directed more than 25 students in their doctoral studies, 17 of whom have pursued academic careers on the faculties of universities in the United States and abroad.

Monroe Keyserling has returned from sabbatical this year and is involved in two ergonomics research projects sponsored by the Ford Motor Company. The first project involves working with plant personnel to develop a comprehensive approach for "in-house" evaluation of ergonomic stresses. The second is concerned with predicting posture during manual materials handling tasks. He is also a co-investigator, with Don Chaffin, in a project to evaluate ergonomic stresses in the hotel/resort industry. Keyserling was recently appointed to the Medical Advisory Board of the American Trucking Foundation. This board advises the trucking industry on issues related to health and safety. He continues to serve as Chair of IOE Graduate Admissions and Financial Aid and as the Director of the Occupational Safety Engineering Program.

Teresa Lam is continuing research in process measurement and control methods for multiple higher dimensional design specifications, focusing on the development of capability indices based on process yield. This work is being supported by Ford Motor Company. She is also continuing work on several other topics, including superposition of point processes with applications to queueing and reliability, and optimal maintenance and inspection policies for deteriorating systems. She is teaching IOE 365 and IOE 466 this fall term.

Jeffrey Liker has continued to research organizational issues associated with

product development and manufacturing technology. This year he is co-director along with faculty in business administration and liberal arts on a new \$1.8 million contract from the Air Force Office of Scientific Research to study Japanese approaches to the management of technology. (Also see *University Record* article, included) In the summer of 1992 (July) there will be a three-day engineering summer conference course on this topic. Those interested should call Professor Liker at (313) 763-0166.

James Miller presented at the September 1991 Annual Human Factors Society Meeting in San Francisco his "Model for Designing and Evaluating Product Information." This is also the theme of his in-process fourth book in the warnings and instruction area, and he has been asked to teach this approach in a U-M Engineering Summer Conference Course in 1992. Returning to one of his other research areas, he will be investigating the mechanisms for occupant protection with ultimate application to the boating and personal watercraft areas. This research is being supported through the American Boat and Yachting Council and the U.S. Coast Guard.

Stephen Pollock has supervised the "Capstone Design" course during the fall 1991 term, and has been impressed by the talent, enthusiasm and hard work brought to this course by both the senior IOE students, and the IOE alumni serving as project site coordinators. He has continued work, with Tony Woo, on a NSF-supported research project that is investigating the application of decision and theoretic approaches, combined with computational geometry, in order to analyze and synthesize tolerance-assignment on the part of design engineers. He and Ph.D. graduate Jeff Alden have recently been awarded a joint NSF-GM funded grant to study the development and use of probability-threshold policies for machine monitoring and predictive maintenance

Medini Singh won the Best Dissertation Award for his thesis "Planning and Control

Decisions in Manufacturing Systems with Uncertainties" from the Production and Operations Management Society. He is presently involved in a sponsored project with GM for capacity and flow analysis of the Flint Tool & Die Plant. He is continuing work on several other topics, including production policies for multi-stage system with uncertain yields, job prioritization and release control in VLSI fabrication lines and economic analysis of investment decisions in flexible manufacturing systems. He teaches courses on simulation, production, and inventory analysis where he tries to add realism by encouraging group projects, assigning open-ended problems and incorporating cases and problem instances from his own experience. He was chosen "Teacher of the Year" by Alpha Pi Mu for 1990-91.

Robert L. Smith recently gave a talk at Harvey Mudd College on Intelligent Vehicle Highway Systems, on smart cars and highways for relieving traffic congestion through better use of existing road ways. The talk summarized his interdisciplinary groups efforts to design a real-time dynamic route guidance system for offering driver's routes that promise to minimize trip time. The University of Michigan recently approved a certified program in IVHS and one of the courses to be offered in the IOE Department, Traffic Modeling, is the first in the U.S. that is specifically tailored to address the problems posed by Intelligent Vehicle Highway Systems. Professor Smith is co-director of the Dynamic Systems Optimization Laboratory. He and several research assistants are also working under contract with General Motors Systems Engineering Center on a simulated annealing algorithm for assisting in automobile design.

Candace Yano has received a Visiting Professorships for Women Scientists and Engineers Grant from the National Science Foundation, and is spending the 1991-92 academic year in the Department of Industrial Engineering and Operations Research at the University of California at Berkeley. The research portion of the grant is focusing on coordination issues in

vertically integrated manufacturing companies, with emphasis on the electronics industry.

Chip White is involved with the development of the itinerary selection aids for transit systems through the U-M IVHS program and will be studying Japanese concurrent engineering management through the Japanese Technology Management program. He continues to study models of sequential decision making under uncertainty and risk under NSF sponsorship. He has recently been elected President of the IEEE Systems, Man, and Cybernetics Society for 1992-93.

Co-appointment, Visiting, and Adjunct Faculty

Co-Appointment Faculty

Thomas Armstrong, also Professor of Industrial Health teaches IOE 433 Fall Terms.

Adjunct Faculty

Richard Coffey teaches IOE 481 (Hospital Systems) during fall and winter terms.

Andy Crawford is teaching IOE 491 Special Topics course on Entrepreneurship during Fall 1991. Andy is president of Ascott Corporation, Ann Arbor.

Paul Green is also an Associate Research Scientist at UMTRI and teaches IOE 334.

Robert Hancock, is a Manufacturing Engineer, Ignition Engineering Dept., Ford Motor Company and will teach IOE 463 (Work Measurement and Prediction) during Winter term 1991.

Visiting Faculty

Visiting with us this year again is **Vivian Carpenter**, Assistant Professor at Wayne State University. She is teaching IOE 451 (Engineering Economy).

Alumni News

This news is from alumni responses to the Fall 1990 IOE Newsletter.

Hamdi Akfirat is a Deputy Managing Director for the Turkish Sugar Industry Inc. He invites IOE Alums to visit him in Ankara Turkey. He can be telephoned at (4)1332174 or contacted by mail at Mithatpasa Cad. No. 14, Ankara.

Annette L. Bielecki (Ruthenberg) (BSIE '86) is a Business Planner for General Motors CPC Division where she has responsibilities for developing and monitoring the business plan for body engineering.

Cynthia Birk (BSE '87) is a Planning Manager at Automated Analysis Corporation, where she is involved in project scheduling, budgeting, cost control, tracking and corporate statistics.

Neil Bloomfield after working for the Westinghouse Savannah River Company as a Procurement Engineer began to pursue an MBA at University of Illinois in July 1991.

William G. Brunner III (BSE '73) is a Corporate Counsel for Black & Decker Corporation and has responsibilities for labor, employment and employee benefits both domestic and international.

Carolyn M. Chang (BSE '89) is a Management Associate with Citibank and is involved in wealth management.

Randall I. Cole (BSIE and Naval Architecture '69) has been with Burlington Resources as a Director of Legislative Affairs. He directed the focus of corporate resources and management regarding legislative/executive branch programs on issues dealing with energy, taxes environment and trade.

Lee Domanico (BSE '74) is the Chief Executive Officer of the Columbus Cabrini Medical Center.

Kelly A. Eckbreth (MSE '90) is an Ergonomics Engineer at AT&T Network Systems, North Andover, Mass. She is responsible for all ergonomic situations for a large manufacturing office setting employing approximately 7000 people over three work shifts.

Frank Firek (BSE '87) is a Marketing Representative for IBM.

Mark Gathmann (BSE '74) is the Engineering Manager at AG Communication Systems in Northlake, Illinois.

Kristin L. Gudan (BSE '89) completed an MS in Industrial Engineering and Management Sciences at Northwestern University in 1990, She now works for Dow Chemical as an Operations Research Analyst.

Daniel Hamburger (BSE '85, MSE '86) completed an MBA at Harvard in 1990. Now he is a strategy consultant in the manufacturing area with Bain & Company, London, England.

Andrew Heckroth (BSE '87) is a Methods Engineer at Boeing Commercial Airplane Group. He is implementing cellular manufacturing in a large aerospace machine shop. Initiatives he has taken include setup time reduction, product flow-time reduction, statistical process control and just-in time manufacturing.

Judy Marie Jbarla (BSE '82, MBA '89) is the Associate Administrator at North American Truck Planning within General Motors. She is responsible for coordinating the annual truck product planning forecast.

Devaprija Kanoria (MSE '81) advises us of a busy schedule including two young children and involvement in a family business having two large manufacturing operations.

Tom Kindinger (BSE '81, MS '82, and MBA (Michigan State)) is an Application Development Analyst at IBM. He does

competitive assessment of PC LAN and UNIX software packages.

Steve Kuciemba (BSE '87) is a Transportation Safety Consultant at the Scientex Corporation in Washington, D.C.

Denise Lazaron (BSE '87) is the Corporate Director for Planning and Business Development at Ancilla Systems, Inc. She is involved in strategic planning and new business development for a seven hospital system.

William J. Rau (BSE '61) has been the East Regional Manager for the Allen-Bradley Company. His responsibilities are related to customer support operations including service, applications engineering, training and parts.

Mark Rock (BSE '87) has been a Senior Consultant with Arthur Anderson Consulting. He recently has moved to Paris to assist in opening a new office which will address the information systems and technology needs of the company's multinational clients doing business in Europe, the Middle East, Africa and India.

Susan Mahila Sanchez (BSE '81) went to Cornell for her MS degree ('84) and also her Ph.D ('86). She is now an Assistant Professor at the University of Arizona in the Management Information Systems/Decision Sciences Department. She has also given birth to her second child.

Peter J. Schroeter has a new position as VP of Marketing and Sales for Vidco International & Associates of Wayne Michigan.

Mary Beth Soloy (BSE '87) is expecting to complete an MBA through John Carroll University in 1993. She was an Industrial Engineer at the Ford Motor Company Walton Hills Stamping Plant but was transferred to the Ohio Truck Plant in March 1991. Her job assignments include being chairperson of the ergonomics committee, serving as a department training coordinator, working on the production

standards for the Econoline, and designing ergonomic production aids.

Byron Stuck (BSIE '72 and a Master's from Public Health in 1978). Byron is an Associate Administrator for the Group Health Cooperative of Puget Sound. His responsibility is to provide clinical line support for some 60 specialty physicians and also for emergency services.

Paul R. Sullivan (BSIE '63, MBA '65) has been Managing Director of Global Partners, Inc. Paul founded this international consulting and management education firm and manages an international network of management consultants.

Christopher H. Turner (BSE '87 and AB (Economics '87)) is with Sulzer Escher Wyss, Inc. as Manager of Quality Assurance. He coordinates all quality programs for North American facilities of this manufacturer of paper making machinery. He is leaving for Germany in January 1992 for a 2-3 year posting at the parent company in Ravensburg, Germany.

Jeff Varhol (BSE '88) is at Management Analysis, Inc. of McLean Virginia. There he is an Industrial Engineer performing data collection and statistical analysis.

Jeffrey A. Wawrzynski (BSE '89) is an Associate Industrial Engineer at General Motors Delco Products. He does time and delay studies, ergonomic and methods improvements and labor schedules.

-James M. Miller, Editor