A Word from the Chairman

Apologies and congratulations! Apologies because we missed sending you last year's edition of the IOE Alumni Newsletter. Congratulations because you are graduates of the Top-ranked Industrial Engineering Department in the country, in both graduate and undergraduate programs (according to the most recent Gorman Report.)

We in the department--both faculty and students--would like to be able to keep you informed as possible about what is happening here in Ann Arbor, and to relay to you news about what your fellow alumni are doing. Like all real organizations we concentrate on day-to-day obligations and newsletters are not, frankly, on the front burner. However, now that the first year "break-in" time of my chairmanship has passed, it is clear to me that we should be in contact with you once again. In turn, we hope this newsletter will stimulate you to reciprocate.

We think the information contained here will be of use and/or interest. We welcome suggestions for procedures or mechanisms by which these pages can become an active means of communication among and for our alumni.

Let me start by reflecting on two items. First, on looking over a recent computer listing of the IE/IOE alumni (there are close to 3000 now!) I was overwhelmed by the fraction of you that hold high level positions: Presidents or CEO's of major Corporations, Chief Engineers, Directors of Research, Deans, and Academic Department Chairs. Do you think that this success in management or supervision has to do with being from The University of Michigan, or being in the more "people-oriented" of the Engineering Professions? I will try to report in the next newsletter on the number of our IE bachelor's degree holders who have gone on to get Business Degrees.

Second, I'm sure most of you have been professionally impacted by the current interest in "integrated manufacturing", CAM, Factory of the Future, or similar buzz-words. Some of us in academia hold to the view that these approaches are simply modern, computer-aided professional practice of Industrial Engineering and Operations Research applied to manufacturing systems. It would be interesting (and certainly useful to us as educators) to hear from you about how your organization has used I.E.'s in modernizing their attitudes towards manufacturing. Or at least whether they have recognized the contemporary I.E.'s role in these activities. --Steve Pollock

IOE Gets It Together!

This summer the I & OE department will be finally making "the move" to North Campus, talked about for the past thirty years(!) We will occupy the building which presently houses the Division of Research and Development Administration. This three story building, totalling 30,000 square feet, will be used for faculty and administrative offices, our human performance and manufacturing laboratories, an information systems research project and the Center for Ergonomics. Classes for IOE students will be held in the new Dow building and other North Campus locations.
This is a most welcome move for the IOE Department, finally allowing the entire faculty and staff to be centrally located. The department library and lounge will be open to both faculty and students, allowing them to meet on a more informal basis. Seminar rooms will also provide an appropriate setting for small graduate classes and the various departmental seminars. The new building will also provide a convenient and welcoming location for alumni whenever you can visit to renew contacts or simply look around.

Academic Programs

Our students and practitioners in industry are showing increased interest in the usefulness of modern IOE approaches. A new MS program leading to a joint degree in IOE and Hospital Administration has been developed. We have also added an MS concentration in Occupational Health and Safety Engineering. These programs are in direct response to needs expressed by industry and other organizations in these areas of specialization. We are also re-emphasizing our MS option in Manufacturing Systems.

Enrollment has increased to over 350 in the undergraduate program, of which about a third are female. This is almost double the number of women enrolled last year—a sure sign that engineering is no longer a male preserve. We also have about 75 students in the MS program and 30 working toward a Ph.D. degree.

Ironically, last year there was a national shortfall of over 300 PhD-level industrial engineers. It follows that one of our major problems is increasing our PhD output despite competition from industry (expressed in terms of lucrative job offers for graduates with lesser degrees). One means of countering this financial pressure is by offering industrial or alumni supported fellowships, grants-in-aid and research projects.

FACULTY HAPPENINGS

Changes

IOE welcomes two new faculty members this year. Jeff Liker comes to us after Postdoctoral study at Cornell University. Both an I.E. (B.S. at Northeastern) and a Sociologist (Ph.D. at Univ. of Massachusetts), Jeff will be teaching and developing research in organizational behavior and management. Candice Yano got her Ph.D. at Stanford in Operations Research, and worked for Bell Laboratories for the past 18 months. She will be joining the department in January, with research and teaching interests in production systems analysis.

Professor Herb Galliher retired in Fall 1981 and was appointed Professor Emeritus after almost 20 years of illustrious tenure in the department, with accomplishments ranging from innovations in inventory control to medical diagnosis. These changes bring our faculty strength to 17 full-time faculty members, an all time high.

Awards

We are very proud to announce that Professor Walt Hancock received several prestigious awards this year: the 1982 Gilbreth Medal from the Society for Advancement of Manage-
ment—American Management Associations. This award, rarely given, was for "outstanding contributions to Industrial Engineering". He also received the S.S. Atwood Award, given by the College of Engineering of the U of M, for distinguished research, publication, teaching and service in his field.

Remember engineering economics? It is one of the potentially most useful subjects in industrial engineering, and yet for some reason in the past students considered it dull. Apparently all it needed was the right instructor. Professor Jack Lohmann has now dramatically altered the picture and is attracting standing-room-only crowds in IOE 451 (Engineering Economy), with a Fall 1982 enrollment of over 150. He has just completed a "hat trick" by winning the Alpha Pi Mu outstanding faculty member of the year award for the third consecutive year.

News

Walt Hancock has just published (in collaboration with Debmar W. Karger) a new book Advanced Work Measurement (Industrial Press, New York, 1982) that should be of special interest to Industrial Engineers, work measurement analysts, administrators, and indeed anyone wishing to achieve maximum productivity from their available work force. It offers a comprehensive study that goes well beyond the discussions found in conventional work measurement texts, and gives a detailed treatment of advanced MTM systems now used worldwide. It is the culmination of over fifteen years of experience in research and writing. Hancock continues his other research on systems for nurse staffing, operating room scheduling, and industrial quality control.

Katta Murty's new book Linear Programming has just gone into production at Wiley, and will be available in the summer of 1983. About 650 pages long, it will be one of the most up-to-date and comprehensive books in the area, covering all the practical, modelling, mathematical, geometrical, algorithmic and computational aspects of linear programming. He was on sabbatical last year, splitting it between the University of Texas at Dallas and the Indian Statistical Institute at Delhi, working on optimization algorithms and their applications, and book writing.

What does a retired professor do? You will probably smile and say that he spends interminable hours on the golf course! True in the case of Bert Steffy, who retired in 1977. Yet he still spends long hours in his office, working on monographs on productivity measurement and improvement.

Three of our faculty (Katta Murty, Bob Smith, John Birge) gave invited presentations on their research at the XIth International Symposium on Mathematical Programming, held at Bonn, West Germany in August 1982.

Steve Pollock has been elected to a three year term on the ORSA Council. He was the Program Chairman for the National TIMS/ORSA meeting held in Detroit in April 1982. In May he was in the People's Republic of China as a member of a U of M team investigating water treatment planning methods.

Don Chaffin has served as a member of the National Advisory Council in Occupational Safety and
Health for the US Department of Labor. He spent the Winter 82 term on sabbatical at USC working on biomechanics research and an ergonomics text.

Dan Teichroew was on sabbatical last year, but he chose to spend it right here in Ann Arbor, monitoring and developing the growing ISDOS project.

James Bean is working on integer programming, scheduling and infinite horizon optimization (capacity expansion, equipment replacement) and has a related project with Bethlehem Steel.

Robert Smith is working on infinite horizon optimization, equipment replacement models, risk assessment with particular attention to nuclear reactor meltdown, and on utilizing statistical techniques in mathematical programming.

Jack Lohmann is completing his NSF project "The Relationship of Employee Ownership to the Technological Adaptiveness and Performance of Companies" and is developing a new course in productivity and economic progress.

Gary Langolf continues to work on methods to protect workers from potentially toxic health effects, and on a longitudinal study of industrial mercury exposure for NIOSH. He presented his results at a recent conference held in England. He is now the Undergraduate Program Advisor in the department.

John Birge participated in the stochastic optimization project at IIASA in Vienna this past summer, and continues research on stochastic programming and applications of optimization.

Dick Wilson is the Director of the Manufacturing Systems Division of the new College-wide Center for Robotics and Integrated Manufacturing.

The Center for Ergonomics

The Center for Ergonomics, nurtured by Don Chaffin and now directed by Gary Herrin, was recently established by the U-M Regents. It is a College-wide unit created to carry on research and training in which man's needs, capabilities, and health and safety requirements are used as the basis for designing machines, vehicles, tools, procedures, and working environments. This concentration on what used to be called "human factors engineering" involves joint research and teaching activities with Bioengineering, Environmental & Industrial Health, and other units throughout the University. Supported by contracts and grants from industry and NIOSH, the Center is rapidly gaining recognition as a national center for excellence in this important area.

ISDOS

The now 15 year old Information System Design Optimization (ISDOS) headed by Dan Teichroew is recognized worldwide as a trend setter in high-level approaches to the design of information systems. A recent ISDOS meeting attracted over 150 sponsors and guests.

Louis Boydstun has been involved in adding simulation capability to the existing ISDOS software. ISDOS recently acquired large quantities of capital equipment and now has its own computers, including an IBM 4331-2 and VAX 11/750.

Seminars

Each year, as you know, the
department sponsors weekly seminars presented by individuals from both inside and outside the university. In the latter category this past year we heard, among others, Dr. John Friedenfelds from AT & T talking about applications of mathematical modelling for management and operations in the Bell system, and alumnus Dr. Prakash Sathe from Volkswagen of America discussing problems in the field of quality information. We encourage those of you in the Ann Arbor area to attend. The seminars tend to be quite lively sessions and attract undergraduate and graduate students as well as faculty. Any of you who may be interested in offering a seminar yourself should contact Professor James C. Bean. (The seminars are usually held on Wednesdays from 4 to 5 p.m.)

Ph.D. Recipients (since our last newsletter!):


Mustafa (Zafer) Yakin ("Multiplier Method Algorithms for Inequality Constrained NLP Problems") is in the Quantitative Management Science Department, University of Houston, as an Assistant Professor.

Mustafa Al-Idrisi ("Unconstrained Minimization Algorithms for Functions with Singular or Ill-Conditioned Hessian") is an Assistant Professor in Industrial Engineering at the University of Jeddah, Saudi Arabia.

David Johnson ("The Software Development Facility Approach to Improved Software Development") is project director in the computer research division of Upjohn Corp. in Kalamazoo.

George Miller ("Sequential Rectifying Inspection with Applicability to Motor Vehicle Emission Certification") is a senior analyst at Vector Research, Inc., Ann Arbor.

Kyo Kang ("An Approach for Supporting System Development Methodologies for Developing a Complete and Consistent System Specification") is a visiting Assistant Professor with us until he returns to Korea.

Kwan Lee ("Biomechanical Modelling of Cart Pushing and Pulling") is Assistant Professor in Industrial Engineering at Ohio University at Athens.

Terry Stobbe ("The Development of a Practical Strength Testing Program for Industry") is an Assistant Professor of Industrial Engineering at the University of West Virginia, Morgantown, West Virginia.

Capsule News about the University

During the 1981 Christmas recess, the old Economics building was, unfortunately, totally gutted by fire. Nothing has emerged, Phoenix-like or otherwise, from the ashes but a lush lawn that occupies that area and allows a clear view of West Engineering from the Diag. Ex-Dean of the College of Engineering, David Ragone, left the U of M in 1979 to become the President of Case Western Reserve University. The new Dean is James Duderstadt (formerly Professor of Nuclear Engineering). As a part of the College
of Engineering's move to North Campus, the Dean's Office has moved temporarily to the first floor of the Chrysler Center.

There is a lot of construction going on around campus. The U of M hospital is in the midst of a huge $200 million modernization and expansion project. Part of this required a relocation of Fuller road. The Business School is two thirds of its way through a $15 million fund raising venture and has laid the foundations for three new buildings. The construction of the Dow building in North Campus has been completed, and Chem. and Mat. & Met. Engineering departments moved into it this past summer. A brand new Alumni Center has been constructed on Fletcher Street behind the Michigan League. The new Center for Robotics and Integrated Manufacturing (CRIM) has been started as a multi-disciplinary unit involving faculty members and students from three departments of the College of Engineering, include IOE.

IIE Chapter News

The local chapter of IIE (formerly AIIE) has grown in both members and activities. It is now one of the strongest societies in the College of Engineering. The weekly luncheon meetings (held every Thursday) routinely attract audiences of over 150. The daily doughnut sales, organized by the chapter provide the funds to support such activities as plant trips, Tech Day, a hayride-square dance with the Society of Women Engineers etc. As the president of the chapter, Mary Goulet, has said "these activities keep the IE's entertained as well as educated." Four members attended the National IIE convention in New Orleans. In February 1983 the chapter will be hosting, for the first time, the student conference for all of Region VI.

APM News

Equally active this past year has been Alpha Pi Mu, currently presided over by Joel Brown. It organized several special days and contests, the most exciting of which was the Engineering Aptitude Tournament (E.A.T.), one of the more diverse competitions held in the Engineering College. It is a contest consisting of 6 timed events, where as many as 15 teams of 3 engineers compete against each other and the clock. The events challenge each team's speed, skill, and ingenuity on both technical and non-technical levels.

APM also sponsored the Engineering Industrial Support Program (EISP) to attract promising minority students to the IOE program. The EISP students heard, among other faculty and student presentations, how MBA travelling costs could be reduced by using optimization techniques and how to program a robot. The students were also given a tour of the ergonomic facilities at G.G. Brown Laboratory.

ORSA - Student Chapter

Strong and sustained interest has resulted in the establishment of a new student section of the Operations Research Society of America. With Sharon Johnson as the current president, the section is rapidly growing, both in activity and membership. The section has been engaged in a variety of operations research activities for Hoover-NSK.
Alumni Notes

Lawrence Alberti, Jr. BS (1948) Lance BS (1972), MS (1973) are a father-son alumni team. The former is president of Alberti International and lives in Chicago. Among his far-flung business interests are a plywood plant in Panama, a processing plant for boneless beef in Central America, and a shrimp fishing fleet. Lance Alberti has held a variety of positions in Inland Steel and is currently working in the Facility Planning Department where he has been defining a long-term economic liability of old facilities. Helpful to his work has been the MBA he took at Northwestern in 1975.

Bob Denner BS (1975) is currently located in Grosse Pointe where he is a manager in the consulting division of Arthur Anderson & Co. He also acts as their contact person for the company-sponsored IOE student scholarship.

Stephen E. Garrett MS (1976) has been promoted to Manufacturing Operations Analyst at General Electric Company's Aircraft Engine Business Group in Cincinnati. He will be managing the introduction of a production simulation system (OPT) into the group's seven plants. Since leaving Michigan Steve received an MBA from the Wharton School of Business, and has completed the course requirements for his Ph.D. in Operations Research.

Pearson Graham BS/M (1950), MSME (1955), is living in Cleveland and works for TRW, Inc. as Finance Director of Operating Investments. In 1973 he received an MA in Economics from Cleveland State, and before TRW he was with General Motors where he worked on the Titan 3C missile project.

Warren Singer BS (1958) has for the past 12 years been Vice-President of Thompson-CSF, Inc., the second largest TV producers in Europe. His offices are in New York.

Tad M. Vaughan BS (1981) is now Project Engineer for IVAC, a medical instrumentation manufacturer in San Diego. A past president of the student chapter of AIIE, Tad has maintained his interest in the organization and currently works with the senior chapter located in San Diego.

Walter J. Rataj MS (1974) is involved as a consultant at the MIT Lincoln Laboratories, and is developing well-engineered software for the evaluation of air force radars.

Thomas J. Billups BS (1981) is working as a sales engineer for York division of Borg-Warner Corp. He is involved in a project to install York air-conditioning equipment for the new U of M replacement hospital.

John Henry (1977) is an AT & T District manager for strategic planning.

Stephen B. Lissner BS (1980) is employed at the Quartz and Chemicals Department of GE as Engineer in manufacturing projects.

Mark McDowell (1977) is a Manager in the Management Information Consulting Division of Arthur Anderson & Co.
J. Leigh Melvin (1960) is the Head of Operational Planning for Tablets and Dry Products at Upjohn Co.

R. Jean Ruth Ph.D. (1979) is an Asst. Professor in the School of Business Administration at the University of Wisconsin-Milwaukee.

Rick J. Scheidt BS (1979) is working in Product Planning for Chevrolet. He is married to Kay Browning (a U of M graduate of 1979). They live in Bloomfield, Michigan.

Vance L. Shutes BS (1981) is a Cost and Scheduling engineer at Bechtel Power Corp. in Ann Arbor.

Scott A. Sutton (1979) is Facilities Planning Industrial Engineer for AVCO Systems. He is involved in construction, layout and simulation of a new 180,000 sq. ft. manufacturing facility.

Jim Wright BS (1951) is in the Pennsylvania House of Representatives. He is the Chairman of the Mines and Energy Committee, Vice Chairman of the National Council of State Legislatures Energy Committees, and a Delegate to the North East Low Level Nuclear Waste Planning group.

A Final Word

We have intentionally avoided mentioning in this newsletter one thing that is very much on everyone's mind these days: the present economic situation and its effect on Michigan's educational institutions. Most of you have received word of one sort or another from the Dean or alumni organizations making clear the financial status of the Engineering College.

The impact on IOE is mixed. Due to our success in generating research funding, and efficiency in teaching both undergraduate and graduate courses, our general fund budget has been sufficient to maintain our reputation and quality as a teaching and research department. However, departmental support for student fellowships and scholarships, innovations in teaching and research initiatives now depends on grants and gifts from industry, institutions, alumni and other friends of the department. It's hard for me not to take advantage of this opportunity to ask you to respond to the College of Engineering Annual Fund, and to remind you that you can specifically designate your contribution to the Department of Industrial and Operations Engineering. The Clyde Johnson Fellowship Fund is particularly suitable for student scholarships. Many organizations have a gift matching program—why not take advantage of it if you can?

Some alumni have recently asked me what they could do for the department, aside from responding to the annual and not-too-subtle call for financial support. A common request is that we help form an alumni group, which for lack of a better term we could call an "Alumni Academy". The Department would welcome such an organization, and we will do everything we can to help its establishment and chartering, and to host it at convenient times and places. It could be an independent entity, whose purposes would be established by the founding group. Activities could include: providing the department with alumni views on curriculum development or research directions; acting as a base for alumni participation in continuing education and seminar development; providing a focus for reunions or other social activities; serving as informal recruiters for prospective students; acting as advocates for industrial engineering education within the state and country, (an IEPAC?) and so on. Not the least of potential activities could be helping us to celebrate our occupancy of the new building this fall. I would welcome hearing from you about this idea, and will be contacting some of you to help bring it to a reality.