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Moving Ahead with Accreditation and Computer Graphics

It is always a pleasure to share good news, especially when the news confirms progress in financially difficult times. Such is the case for the outcome of the college’s recent accreditation review as well as for the substantial expansion of computer graphics resources. On the other hand, the college’s plans for expanded physical space to meet the demands of instruction and research are at a standstill.

As most of you know, accreditation of an engineering program is an important achievement. Accreditation of undergraduate engineering programs is the responsibility of the Accreditation Board for Engineering and Technology (ABET). The evaluation criteria concern curriculum, faculty, student body, administration, and institutional commitment and facilities. The previous accreditation for all the college’s accredited undergraduate engineering programs (chemical, civil, electrical, industrial, mechanical) was valid through 1985. Hence, in 1984, the college prepared and submitted documentation in support of its request for continuation of accreditation. In September of 1984 a team of examiners visited the college to interview students, faculty, and administrators as well as to examine space and facilities. This past summer the ABET Board of Directors deliberated about the information and notified the college that all programs had received the best possible action by ABET—accreditation for the maximum six-year term for all five programs. This is the first time in the college’s 50-year history of accreditation that such a response has been received. Moreover, the report for each program was laudatory in regard to the progress achieved in curriculum, faculty, and students. The report acknowledged the college’s national leadership in the incorporation of student computer usage into all curricula at all academic levels. One may conclude from this review that the College of Engineering is continuing to make substantial progress toward academic excellence under difficult financial circumstances.

The college is now implementing its plan to be a national leader in the use of computer graphics in engineering education. Development of the Iowa Computer-Aided Engineering Network (ICAEN) was announced in last year’s newsletter, and a progress report is included in this edition. On November 8, 1985, the newly established Howard J. Elder Laboratory for Engineering Computing was dedicated. This laboratory houses the first principal cluster of 60 computer graphics workstations for student use. Fortunately, ICAEN has received substantial support for capital and operating costs from the University. Moreover, as of the 1986 fall semester, every engineering student will pay a tuition surcharge to help meet the ongoing operational costs of the ICAEN system. The college, however, must raise about $350,000 in external funds for equipment to fully implement ICAEN.

The college will be contacting foundations, industry, and business in its quest to fulfill its obligation to our students. Your assistance in this special fund-raising effort would be greatly appreciated.

You are aware of the severe space shortage in the college. Although the University elevated the request for a major addition to the Engineering Building to the top of the list for new construction and pressed hard for at least construction planning for this fiscal year, no funding was received because of the dire financial condition of the state. Although this has stymied the much-needed expansion of space, a major renovation of the third floor of the Engineering Building is scheduled for the spring. The renovated space will, among other uses, house the second major cluster of student computer workstations for ICAEN as well as staff and centralized facilities, which support the network. Included in this renovation are a remodeled student lounge and a new, appropriately furnished college conference room, both reflecting the generous gifts many of you alumni have made through class gift projects.

Elsewhere in this newsletter you will learn about the amazing success of the College of Engineering Development Fund. On behalf of our faculty, staff, and students, I wish to express our appreciation to each of you who have contributed. If you have not yet contributed, I ask you to examine the materials that will be sent to you about the fund and consider participating. There is no doubt that the difference between a good college and a great one is private giving.

I invite you to visit the college at your earliest convenience. The faculty, staff, and I welcome the opportunity to renew acquaintances, to learn of your career experiences, and to personally demonstrate to you our commitment to achieving our goal of recognized academic excellence in all programs and activities of our college.

Robert G. Hering, Dean
Iowa Hydraulics Lab Contributes To City Storm Water Projects

A deceptively simple design realized by Professors John F. Kennedy, director of the Iowa Institute of Hydraulic Research, and Subhash C. Jain, civil and environmental engineering, will help solve a major problem in wastewater processing while saving millions of dollars.

Kennedy and Jain have developed highly efficient entrance structures, or dropshafts, for the huge storm-water and sewage-retention tunnels being built beneath the city of Milwaukee, Wisconsin. The system of dropshafts and tunnels is needed to keep the city's wastewater treatment plants from being overwhelmed in times of heavy rain.

The dropshaft is the vertical entryway to the storage tunnel. The major challenge in its development was to accommodate the influx of some 3,300 cubic feet per second of water—roughly the flow rate of the Iowa River—while preventing air from accumulating and being trapped in the tunnels.

The design solution resembles a cylindrical bucket being filled from a garden hose held against its side. As the water spirals down the walls of the cylinder, the swirling motion dissipates up to 70 percent of its force, while the displaced air escapes upward through the center.

Searching for the critical dimensions, Kennedy and Jain were able to design a dropshaft that was one-third smaller than other such structures. Through this economy of design, the city of Milwaukee will reap a cost saving of many millions of dollars.

The Iowa dropshafts have attracted national and international attention. The city of Cleveland, Ohio, has adopted the new design for its own storm-water treatment system, now under construction. Another project, under way in New Guinea, uses the Iowa design in a quite different application—for draining enormous open-pit copper mines.

Private Giving Helps the College Renovate and Add New Equipment

Generous private contributions from alumni and friends continue to be a significant source of support for the college's programs.

Alumni donations through the Class Gift Program, a traditional part of the annual reunion weekend, will enable the college to equip its first specially furnished conference room, as well as a renovated student lounge. Both rooms will occupy remodeled space on the third floor of the Engineering Building. While the University is underwriting the basic structural renovation, alumni funds will pay for special cabinetry, decorating, furnishings, and even audiovisual equipment.

Construction is scheduled to begin in January 1986.

Thanks to the Hewlett-Packard Company of Palo Alto and to an alumnus, Robert G. Campbell (B.S.E.E. '81), color graphics terminals are for the first time generally accessible to UI engineering students. Two HP2703 color graphics terminals and related equipment, donated by Hewlett-Packard, were installed last year in the college's Computer-Aided Engineering Laboratory. Campbell, who is with the firm's Personal Office Computer Division in Sunnyvale, California, was instrumental in developing the request for the equipment. Previously the college had only a single color graphics terminal, which limited general use in the curriculum. The new equipment, used mainly on the graduate level, will expose hundreds of students each year to the usefulness of color graphics in engineering analysis and design.

The Engineering Development Fund, launched in 1982 as a long-term effort to enhance the overall quality of the college's offerings, closed its third year with an encouraging 40 percent increase in contributions. Gifts to the fund from alumni, friends, and industry support a variety of causes—for example, research projects, financial aid to deserving students, and campus visits by prominent people in the engineering profession.

Osburn Retires

After a distinguished career spanning nearly 40 years with the University, Professor James O. Osburn retired from the chemical and materials engineering department June 30, 1985.

An alumnus of the University of Michigan, Osburn received his B.S. (1939), M.S. (1940), and Ph.D. (1944) in chemical engineering. Before joining the UI faculty in 1946, he was employed in industry and served for a year in the U.S. Navy. Working in the areas of mass transfer, modeling of dynamic systems, and process control, he authored two textbooks and over 60 other publications and served as adviser for 21 Ph.D. and 45 master's students.

Osburn appears in Who's Who in America, Who's Who in American Education, and American Men and Women of Science. Among other honors to his credit is the Citizen Chemical Engineering Award from the Iowa Section of the American Institute of Chemical Engineers.

Osburn was among the first to use analog computers on campus, building his own with the help of graduate students and sharing the knowledge with other departments. More recently, he has been a leader in the laboratory use of microcomputers. Just last semester, Osburn completed development of a new undergraduate process control lab.

In a tribute to Osburn shortly before his retirement, department chair Gregory R. Carmichael hailed his colleague as "a key member of the faculty who has stayed active, productive, and contemporary throughout his career."

Osburn Retires
UI Engineering Students Win Wide Recognition

A 1985 graduate in chemical and materials engineering, Rhett Livengood from Freeport, Illinois, won recognition for his talents from many sources at local, regional, and national levels. Livengood was one of 32 students nationwide to earn Tau Beta Pi graduate fellowships, awarded by the National Honor Society on the basis of past accomplishments and professional promise. (A UI engineering student has been offered one of these national fellowships six of the last seven years.) Livengood, who is now doing graduate work at the University of California, Berkeley, also placed first in the AIChE Regional Student Conference paper contest and won the American Institute of Chemists Outstanding Senior Award. Locally, Livengood received the prestigious Hancher-Finkbine medallion, awarded annually to four UI students who have distinguished themselves in leadership, learning, and loyalty.

The college was especially well represented at last April's Finkbine Dinner, a yearly event that brings together student leaders in all fields. James K. Knapp, a chemical engineering doctoral student from Knoxville, Illinois, and Jeffrey S. McKinney, a biomedical engineering junior from Chariton, were among seven to receive Distinguished Student Leader Awards, which honor runners-up in the Hancher-Finkbine medallion competition. Rob Moellinger (B.S.E. in Ch. E., '85), a varsity tennis player from St. Louis, Missouri, received the Robert F. Ray Faculty Representative Scholarship, awarded each year to a student athlete outstanding in athletics, academics, and leadership.

A number of other engineering students received significant awards for further study, including Alec Scranton (B.S.E. in Ch. E., '85) from Dubuque, who is using his 1985-86 NSF Graduate Fellowship to attend Purdue University. Brian L. Nebel from Wayland, now a mechanical engineering senior, placed first in a scholarship competition sponsored by the Iowa Consulting Engineers Council; he also won a scholarship from the American Consulting Engineers Council in national competition. UI students won two of six national scholarships awarded this year by the American Electroplating Society. They are James K. Knapp and Paul Guidotti, a chemical engineering junior from Buffalo Grove, Illinois.

Faculty Awards Span Teaching and Research

Professor M. Asghar Bhatti, civil and environmental engineering, received a 1985 Dow Outstanding Young Faculty Award from the American Society for Engineering Education. Each year the society honors 12 young faculty members—one from each of its geographic regions—for enthusiasm and excellence in teaching, as well as for their contributions to the improvement of the society and the profession in general.

Professor Thomas D. Brown, who holds a joint appointment in biomedical engineering and in orthopaedic surgery in the College of Medicine, was honored by the American Society of Biomechanics for his research into osteonecrosis, a disease characterized by the death of bone tissue. Brown received the society's competitive Borelli Award for his work concerning the structural engineering aspects of weight-bearing compromise, critical to prognosis and treatment in this particular disease.

Professor Forrest M. Holly, Jr., civil and environmental engineering, is among six UI faculty members to receive University Faculty Scholarships beginning in 1985-86. Holly will use the award to pursue his interest in developing computer models for simulation of water and sediment movement in large alluvial river systems. The scholarships provide released time from teaching and other duties over a three-year period. During the first award year, Holly will spend two months in Grenoble, France, working with former colleagues at the engineering firm SOGREAH, where he spent six years before coming to Iowa.

Professor Jerald L. Schnoor, chair of civil and environmental engineering, was chosen in national competition for one of five Walter L. Huber Civil Engineering Research Prizes awarded in 1985 by the American Society of Civil Engineers. Schnoor has won wide recognition for his research in the area of water quality modeling, particularly the development of mathematical models to predict concentrations of toxic pollutants affecting aquatic life; his recent work has focused on the problem of acid rain.

On-Campus Recruiting Up

A co-op student working at the NASA Lyndon B. Johnson Space Center in Houston was honored with an Outstanding Co-op Award for the spring of 1985. Carl A. Ondracek, a mechanical engineering senior from Naperville, Illinois, was commended for his initiative and competence in developing a new EVA space-suit glove.

Student Organizations

Two UI engineering student groups earned recognition from affiliated national organizations in 1984-85. The student magazine Hawkeye Engineer, published by an all-volunteer staff, was a winner at the national convention of the Engineering College Magazine Association. The November 1984 issue, on the theme "High Technology: The New Generation," won an honorable mention in the best single issue category.

The University's Beta Chapter of Tau Beta Pi, the national engineering honor society, received one of seven Secretary's Commendation Awards presented during the organization's national convention at Arizona State University.
Department Highlights: 
A Sampling of Recent Activities and Accomplishments

Biomedical Engineering

The department gained two faculty members in August 1985. Professor Edwin L. Dove, who received his Ph.D. from Case Western Reserve University, will bring bioelectrical engineering to the department. In addition, Professor Glen Njus (Ph.D. in M.E., '85) will contribute in the area of biomaterials and biomechanics.

A recent graduate, Chris Kingsbury (B.S.E. in B.E., '83) has returned as an engineer II, associated primarily with the biomedical engineering laboratories.

Faculty Activities

Professor Krishnan B. Chandran presented a paper on the effect of wedging of tilting disc valves in the aorta at the Fourteenth International Conference on Medical and Biological Engineering in Helsinki, Finland, in August 1985. Chandran also lectured in India on in vitro evaluation of heart valve prostheses. His NIH grant was renewed for the fourth year.

Professors Vijay K. Goel and Y. King Liu presented papers before the International Society for the Study of the Lumbar Spine in Sydney, Australia, last April. Goel’s NIH grant was renewed for the third year, and he received a new grant from the Orthopaedic Research Education Foundation to study the effect of repetitive loads on the lumbar spine. He will be working with J. Weinstein of the Department of Orthopaedic Surgery at The University of Iowa Hospitals and Clinics.

Professor Roderic S. Lakes has made revolutionary research advancements in the area of cellular solids and has developed a biomedical measurements instructional laboratory. Lakes received the Student Society of Biomedical Engineers Outstanding Biomedical Engineering Faculty Award for 1984-85.

Professors Y. King Liu and Joon B. Park have continued their pioneering work on the use of resorbable additives to bone cement as a means of improving total joint replacement. They presented a paper on an in vivo study of bone particle impregnated PMMA at the International Conference on Tissue Integration in Brussels in June 1985.

Professor Kwan Rim, department chair, attended the tenth annual meeting of the Japanese Orthopaedic Biomechanics Research Society as their honored guest in September 1984. He also visited Sapporo, Japan, to strengthen the tie between the UI and Hokkaido University. Rim has initiated a research project with Vijay K. Goel to study the vibration white finger problem, and another with Joon B. Park to develop a new type of bone plate.

Special Projects

Professor Krishnan B. Chandran introduced three modules of computer-assisted instructional programs in the undergraduate course, Mechanics of Deformable Bodies. The students used interactive programs with computer graphics to solve problems in beam deflection, Mohr circle constructions, and simulated axial deformation experiments.

The department is now seeking accreditation from the Accreditation Board for Engineering and Technology. A site visit by the board took place on September 16 and 17 of this year.

Chemical and Materials Engineering

Professor James O. Osburn retired in July 1985, after 39 years on the faculty. Osburn was department chair from 1974 to 1978 and recently served as acting chair in Gregory R. Carmichael’s absence.

Professor David G. Rethwisch joined the department last January after completing his Ph.D. at the University of Wisconsin. His interests are in fine particle characterization and precipitation, with a focus on catalysis.

Professor Randall Yoshisato, who earned his Ph.D. here in 1985, is staying on this year as a visiting assistant professor to help further develop the department’s activities in biochemical engineering.

Faculty Activities

In May 1985, Professor J. Keith Beddow traveled north of the Arctic Circle for a visit and presentation at a laboratory run by Helsinki Technical University. He continued to Stockholm, Sweden, where he spoke at a seminar on pressing technology sponsored by Sandvik Corporation, the world’s largest manufacturer of cutting tools.

Department Chair Gregory R. Carmichael, who was recently promoted to full professor, traveled widely this year. He spent May and June in the Far East, where he co-chaired a session at the International Conference on Atmospheric Sciences and Applications to Air Quality in Seoul, Korea; spoke at the seminar on Acid Deposition Modeling at the National Institute of Environmental Science in Tsukubu, Japan; and spent a week as a visiting researcher at Toyoohashi University of Technology. Carmichael is principal investigator on new projects funded by NASA and the Electric Power Research Institute.

Professor Ravindra Datta presented a paper and chaired a session at the December 1984 joint meeting of the Indian and American Institutes of Chemical Engineers in New Delhi. He has introduced a new graduate course, Catalytic Reactor Design and, with Gregory R. Carmichael, is working on a project funded by the Iowa High Technology Council to develop a continuous electrophoresis separation device.

Professor David W. Luerkens received a prestigious NSF Initiation Grant to investigate chemical complexation in precipitation and crystallization processes. He also was awarded an Old Gold Fellowship for the summer of 1985 to study mathematical representations of three-dimensional objects.

Fine Particle Group

Professors Beddow, Luerkens, and Vetter continue to be active with the student-faculty Fine Particle Research Group, which has begun operating a newly remodeled Particle Characterization Laboratory and recently hosted a related short course. Development is under way for a proposed multidisciplinary Center for Particulate Material Processing Sciences. In the past year, members of the Fine Particle Group have secured $120,000 in grants from NSF and the Iowa High Technology Council; presented 14 papers at technical conferences; offered six seminars to industrial organizations; and authored nearly 40 publications.

(Cont. on next page)
Student Activities

Jim L. Chapman, a senior from Laurens, was this year's recipient of the Outstanding Leader Award from the UI chapter of Omega Chi Epsilon, the chemical engineering honor society.

Lee Gasper-Galvin (B.S.E. in Ch., '78; B.S. in Ch.E., '79), now a doctoral candidate, is secretary of the Iowa Chapter of the American Institute of Chemical Engineers. She served as program editor for the 1985 national AIChE meeting held in Chicago in November.

Doctoral student Russ Ogle was awarded the Frederick and Florence England Scholarship of Alpha Chi Sigma. Frederick England received an M.S. in chemical engineering here in 1938; the scholarship in his name recognizes outstanding graduate students in chemistry and chemical engineering.


Mansur Huq, also a doctoral student, traveled to Bergen, Norway, to present a paper at the European Federation of Chemical Engineering Conference on Reliable Flow of Particulate Solids.

Civil and Environmental Engineering

After 14 years as an administrator in the college, Professor Harrison Kane stepped down as department chair June 30, 1985, to return to full-time teaching. Succeeding Kane is Professor Jerald L. Schnoor, who joined the civil engineering faculty in 1977.

Faculty Activities

Professor Jasbir S. Arora was named chair of the Technical Committee on Optimization, ASCE, for a three-year period and was appointed to the editorial advisory board of the International Journal of Computational Mechanics. Arora has established the Optimal Design Laboratory, a new departmental lab for research on efficient algorithms and their applications to optimal design of systems.

Professor Robert Ettema is currently organizing the Eighth International Symposium on Ice, to be held in Iowa City in August 1986. The symposium is principally sponsored by the International Association for Hydraulic Research.

Professor Forrest M. Holly, Jr. made two trips to Bangladesh this year, on behalf of the United Nations Development Program Master Plan Organization, to investigate the use of computer models to study water resource development. He is also developing a new water-sediment routing computer code for Harza Engineers of Chicago.

Professor A. Jacob Odgaard presented a paper at the International Association for Hydraulic Research Symposium on Hydraulic Structures in Esslingen, West Germany, in September 1984. He has been appointed to the ASCE Committee on Hydromechanics and is a participant in the United States-Japan Cooperative Science Program on River Mechanics, which took him to Japan this past July. Full-scale testing is under way for Odgaard's research project on stream-bank protection using Iowa Vanes on a reach of the East Nishabotna River. The tests are being sponsored by the Iowa Department of Transportation.

Professor Wayne L. Paulson is a member of the ASCE Oxygen Transfer Committee and has been one of several investigators on a series of EPA-ASCE grant projects. He authored sections of three EPA documents on oxygen transfer and the ASCE standard, Measurement of Oxygen Transfer in Clean Water. Paulson is one of 11 investigators on the 1985 $1 million EPA-ASCE project to prepare "Design Information on Fine Bubble Diffused Aeration" and is coauthor of an EPA interim design manual released this October.

Professor Jerald L. Schnoor was appointed chair of the Water Pollution Control Federation Committee on Acid Rain for 1984-85. He was named associate editor of the American Geophysical Union journal Water Resources Research and is on the editorial boards of two other journals, Environmental Toxicology and Chemistry and Ecological Modelling. This year he is serving as secretary of the UI Faculty Senate/Faculty Council. Schnoor has developed an interdisciplinary course, Hydrogeology and Groundwater Quality, in conjunction with the geology department.

Professor James W. Stoner worked with the Department of Transportation in London, England, during the summer of 1984. He is a member of the Iowa State Transit Advisory Board and is directing research to develop time series models for transportation forecasting and analysis for the federal Department of Transportation. A new interactive transportation planning package, TRANPLAN, has been installed on the Computer-Aided Engineering Laboratory computer for instructional use.

Professor Han C. Wu presented a paper at the Sixteenth International Congress of Theoretical and Applied Mechanics in Copenhagen in August 1984. He was on a Faculty Development Assignment during spring semester 1985, continuing his research in the field of plastic deformation of engineering materials. In May and June of this year, Wu visited China, where he lectured at several universities and institutions on continuum mechanics and his recent research results.

Student Awards

The American Public Transit Association's George Krambles Scholarship, held by Michael Kyte (Ph.D., '85), was renewed on a competitive basis for 1984-85.

Thammaiah Sreekantamurthy, a graduate student in structures, received the Jefferson Goblet Student Paper Award from the American Institute of Aeronautics and Astronautics. His award-winning papers were presented at the institute's Twenty-sixth Structures, Structural Dynamics, and Materials Conference held this April in Orlando, Florida.

Electrical and Computer Engineering

The department added four new faculty members this year. Professor Rajendra K. Lagu came to the UI in January 1985 with a Ph.D. from the University of Florida. His research interests are fiber optics and optical communication systems.

Professor Soura Dasgupta, who obtained his Ph.D. from the Australian National University, joined the department in June 1985. He works in the areas of systems theory and signal processing.

Also specializing in signal processing is Professor Magdy Hanna, who came to the department in August 1985. His doctorate is from the University of Pittsburgh.

Professor Robert Cuykendall spent 11 years with the Jet Propulsion Laboratory in Pasadena, California, before joining the faculty this August. He is interested in the areas of quantum VLSI and non-Turing quantum computers. Cuykendall's graduate degrees are from UCLA.

Professors Dae Hee Youn and Chu Shik Jhon left the department during the past academic year. Both returned to South Korea to accept faculty positions there.
Faculty Activities

Professor Dong H. Chyung presented two papers and chaired a session at the International Federation of Automatic Control Conference on Systems held in August 1985 in Beijing, China. Professors Steve M. Collins and David J. Skorton are editors of a book entitled *Cardiac Imaging and Image Processing*, just published by McGraw-Hill. Skorton holds a joint appointment in electrical and computer engineering and internal medicine in the College of Medicine.

Professor Adrianus Korpel spent the past year at the Physikalisches Institut of the University of Erlangen-Nuremberg under a von Humboldt Fellowship from the West German government.


Ware Scholarship

Thanks to the support of department alumni, faculty, and friends, the first two Ware Scholarships were awarded for 1985-86 to Brian Dye, a sophomore from Sheldon, and Christopher Wilbricht, a junior from Monticello. The scholarship fund was established in honor of Lawrence A. Ware, an influential emeritus professor and UI alumnus.

Industrial and Management Engineering

Professor Gary W. Fischer, who earned his Ph.D. here in 1969, returned to the University this fall and is responsible for teaching and research in the manufacturing processes area, with a special interest in robotics. Fischer was with the Rock Island Arsenal and subsequently with Deere and Company, Moline, Illinois, where he studied advanced manufacturing processes.

Professor Miryam Barad from the University of Tel Aviv spent 1984-85 as a visiting professor with the department, teaching courses in quality control and assurance systems design.

Faculty Activities

Professor Ronald G. Askin is currently on a Faculty Developmental Assignment at the University of Arizona in Tucson, where he is working with John Ramberg, formerly of this department. In May 1985 Askin and former graduate student Robert Walas (M.S. '83) won the Institute of Industrial Engineers award for the outstanding paper in the *IEEE Transactions*.

Professor James R. Buck, chair, attended a NATO conference on applied cognitive sciences in Pisa, Italy, this September. His new book on applied statistical decision theory will be released by Iowa State University Press very soon.

Professor John M. Liittschwager is back from a Faculty Developmental Assignment; he worked with the Rock Island Arsenal, Deere and Company, and other Quad Cities firms during the past year. While visiting West Germany in summer 1985, Liittschwager presented a course in reliability theory at Deere's European headquarters in Mannheim.

Student Activities

Robert J. Reimers II (B.S.E. in I.E., '84) received the J. W. Deegan Academic Achievement Award, granted each year to the department's top undergraduate student. Deegan retired from the department in 1980, having served for many years as its chair.

Warren Hauck, who earned his B.S.E. in industrial engineering in 1985 and stayed on for graduate study, won third prize in the IIE regional student paper competition on a robot control language.

The UI student chapter of the Institute of Industrial Engineers received an award of excellence from the institute for its high level of activity. The student chapter of the Computer Simulation Society attended the National Summer Computer Simulation Conference in Chicago.

Special Projects

The Computer-Integrated Manufacturing Laboratory, established this past year, is being used for research and class projects under the direction of Professor Tzvi Raz. With the lab in place, new courses in computer-integrated manufacturing and robotics are being introduced.

In addition to the collegewide ICAEN network, the department has acquired two Data General superminicomputers and considerable software for computer graphics and other applications. Professor Voratas Kachitvichyanukul is developing a new computer simulation laboratory, using these resources as well as the new TESS software designed for digital simulation, analysis, and animation.

Mechanical Engineering

Professor Patrick (Barry) Butler joined the department in August 1984, specializing in combustion, detonation, and noise reduction. He earned his Ph.D. from the University of Illinois.
Two faculty members resigned in the summer of 1985. Professor Belakavadi R. Ramaprian accepted a position at Washington State University, Pullman, and Professor Martin J. Vanderploeg went to Iowa State University.

After many years of service, Professor J. Merle Trummel is beginning phased retirement during the 1985-86 academic year.

Faculty Activities

A book by department chair Ching-Jen Chen entitled Fluid Mechanics and Heat Transfer, an outgrowth of his lectures as visiting professor at the East China Institute of Technology in 1981, was published in China in 1984. Chen was also named an honorary faculty member of the Wuhan Institute of Hydraulics and Electrical Engineering, Wuhan, China.

Professor Allen T. Chwang made a lecture tour in China this past summer, speaking on fluid mechanics and the effects of earthquakes on dams.


Professor Virendra C. Patel was honored by the University's ASME Student Chapter, by receiving its newly established award for the outstanding faculty member in mechanical engineering.


Professors Ching-Jen Chen and Leer-Der Chen, along with Forrest M. Holly, Jr. of civil and environmental engineering, were the local organizers of the International Symposium on Refined Flow Modeling and Turbulence Measurements, held in Iowa City September 16-18, 1985. The symposium was sponsored by the Iowa Institute of Hydraulic Research with support from the NSF and various professional organizations.

Special Award

The department expressed appreciation to Emeritus Professors Louis Landweber and Enzo O. Macagno, who retired in 1982 and 1984, respectively, for their long and excellent service. Both were presented distinguished service plaques at a department ceremony held last fall.

Exchange Visits

In April 1985 the University hosted a delegation from the East China Institute of Technology, led by the institute's vice-president. The visit resulted in an agreement to establish an exchange program with The University of Iowa; a team of UI faculty will in turn visit the East China Institute in the spring of 1986.

A group from the Wuhan Institute of Hydraulics and Electrical Engineering visited the campus this fall, in the context of an existing exchange program.

Student Award

A team of undergraduates took first place this April in the Society of Automotive Engineers Mississippi Valley Section student paper competition. Marc Hershberger and Julie Van de Walle (both B.S.E. in M.E., '85) and Dan Gallagher, Prairie du Chien, Wisconsin, and Susan Kent, Mason City, both seniors, won the award for their design of a system to control the movement of a microscope slide while maintaining the two-dimensional position.

Alumni Honored

Mikio Arie (M.S. in M. and H., '55), president of Hokkaido University in Sapporo, Japan, was chosen by the UI Alumni Association to receive one of ten 1985 Distinguished Alumni Awards in recognition of his career achievements. Arie has been instrumental in arranging exchange visits between the UI and Hokkaido University and has been active in several academic and scientific organizations, including the Japan Science Council and the Senate of the National Institute for Polar Regions.

Richard E. Emmert (B.S. in Ch.E., '51), vice-president for photo systems and electronic products with E. I. du Pont de Nemours of Wilmington, Delaware, was recently elected to membership in the National Academy of Engineering. Emmert, a longtime friend of the college, served on the Engineering Advisory Board from 1973 to 1978.

What's New with You?

To help us keep our files up-to-date and accurate, please use this return form to provide information on your current career status.

Name ____________________________

UI Degree(s) and Years ____________

Home Address ____________________

Work Address ____________________

Position Title ____________________

Recent career information about yourself, or comments you'd like us to see:

□ Please send me information on how I may help Iowa engineering students through the UI Alumni Association's Career Information Network.

□ Please send me information on the Engineering Development Fund.
New Computer Network Inaugurated

The college is progressing rapidly in the three-year phased development of a sophisticated computer network that will make it a leader in the use of interactive computer graphics in engineering education. Through the Iowa Computer-Aided Engineering Network (ICAEN), students and faculty will have ready access to the latest computer technology, including word processing, interactive computer-aided design with high-resolution graphics, data-base manipulation, and electronic mail.

The system involves a mix of intelligent terminals—Apollo workstations and Macintosh personal computers—along with high-quality printers and plotters. The Apollo workstations will be interconnected using Apollo’s DOMAIN network; the Macintoshes will be connected to the Apollos utilizing a special software package developed and donated by the University of Michigan. The Michigan software will enable Macintosh users to access the network and to execute any Apollo-based application packages, including those that utilize interactive graphics. Hence, all terminals will have access to each other as well as to computational nodes and file servers distributed along the network.

When development is complete, the network will include about 125 student workstations grouped in two clusters, as well as workstations located in each department and in individual faculty offices. Remote access will be available in the future through modems, and a high bandpass cable will link the system to other campus computer facilities.

A significant part of the network is already in place. Macintosh computers have been distributed to all faculty and a number of Apollos have been installed for departmental use.

Development of ICAEN is being made possible by allocations from University and college budgets and funds being raised from corporate and private sources, as well as a substantial initial private gift from Manuel A. Villafana. In addition, the state Board of Regents authorized a $100 per semester fee to be collected from all engineering students starting next fall.

The college’s commitment to the use of computer-aided engineering has earned it admission to the College CAD/CAM Consortium, a group of 20 colleges sharing in the development and dissemination of instructional modules employing interactive computer graphics. Membership in the consortium will dramatically increase the amount of appropriate software available and assist the college in its mandate to integrate the new technology as rapidly as possible into all curricula.

Professor Jon G. Kuhl of electrical and computer engineering, author of the original network proposal, is the faculty director of ICAEN. He will be planning the development of ICAEN facilities and integrating the network into the engineering curricula. Douglas A. Eltoft, director of computer operations, is responsible for day-to-day management of the system.

Field hockey player Marcia Pankratz, an industrial engineering junior from Southboro, Massachusetts, was the University’s 1985 nominee for Big Ten Female Athlete of the Year. Pankratz, previously honored by field hockey coaches as the league’s most valuable player, is one of about 30 UI students who balance the demands of the engineering curriculum with the rigorous practice and playing schedules of intercollegiate sports.

This issue was written by Jean Tucker, a free-lance writer from Iowa City. Editing and production provided by Diane Rarick, Office of Public Information.