The Dean Takes a Look at the Future

In this message, I will share with you a few of the major elements of the college's aspirations, goals, and plans for the undergraduate programs. My comments are based on a biennial academic planning report recently prepared for the Iowa State Board of Regents—the governing agency for the state's universities.

Undergraduate engineering education is expected to undergo major programmatic changes in the decade ahead. Most of these changes will reflect the impact of microelectronics and computer graphics on the way engineers of the future will design, develop, and control processes and systems. Future undergraduates will need to be introduced to the principles and applications of these important technologies early in their educational careers. This early education will be the foundation for later courses in which these technologies are integrated into most engineering disciplines.

Only through such pervasiveness will future graduates be properly prepared to make the transition from the University to industrial positions as productive engineers. This early education will be the foundation for later courses in which these technologies are integrated into most engineering disciplines.

In the near term, our plans to improve the undergraduate educational experience include implementing the incorporation of computer graphics into our curriculum, enriching the curriculum with modern courses and contemporary laboratories, and securing accreditation of the biomedical engineering program.

Curricular enrichment activities are continuously under way in all our undergraduate programs. For example, chemical engineering is planning to introduce microcomputers into the laboratory experience. Civil engineering is incorporating a hydraulics option into its curriculum. Electrical engineering is developing a greater orientation towards computers, while industrial engineering is interested in developing opportunities for study in the application of computer technology to manufacturing processes and production management. Mechanical engineering is broadening its areas of study to include combustion processes. In addition, new laboratories are being planned for the core program as well as for the upper-level courses in the professional programs.

Student demand for biomedical engineering has exceeded all expectations and outstripped the resources available to conduct the program at the level of academic excellence desired. Faculty will be added, course offerings expanded, and laboratories developed to provide the students with the same high-quality education as in our other college programs. Accreditation of the program will be sought when the college is next reviewed for continuation of accreditation of its professional programs.

In this issue of the Iowa Engineer, you will be apprised of other developments within the college. We are particularly proud of our faculty, students, and alumni who earned major awards and honors.

I wish to call your attention to the material distributed earlier about the College of Engineering Development Fund. This fund has been established as a long-term effort to enrich the programs and atmosphere of the college through private gift commitments. In my view, private support is the difference between a good college and a great one. I hope that you will give serious thought to contributing to the college in this very important way.

Our first issue of the newsletter elicited responses from many of you. I hope that this one will encourage even more of you to write or to visit the college at your earliest opportunity. The faculty and I look forward to renewing our acquaintance and learning of your career experiences.

Robert G. Hering, Dean
Special Activities

Open House for Industry

A highlight of the year occurred April 13, 1982, when 75 representatives of various firms from across the country gathered in Iowa City for the first annual College of Engineering Open House for Industry.

Welcoming the group, UI President James O. Freedman described the day-long event as an attempt to explore opportunities for mutually beneficial cooperation between the educational and business communities.

The morning program included an overview of current research in the college's four divisions and the Iowa Institute of Hydraulic Research. In the afternoon, the industry representatives were invited to visit any of about 40 laboratories and to attend seminars on specific research projects.

Among the corporate representatives at the open house were Du Pont, John Deere, International Business Machines, Rockwell International, and Texas Instruments.

Technology and the Spirit of Man Symposium

"Space Technology: Significance to Society" was the focus of the most recent Technology and the Spirit of Man Symposium. This annual event, organized by the UI chapter of the national engineering honor society Tau Beta Pi, brings together people from the humanities and sciences to explore important contemporary issues. Participants in the April 21, 1982, symposium examined the outlook for the U.S. space program and considered its vital role in our technological development within the context of competing national priorities.

Speakers for the symposium were Cooper Evans, member of Congress from Iowa's Third District; D. Allen Gardner, a NASA astronaut trained for space shuttle assignment; Charles Gould, manager of space shuttle utilization for Rockwell International; and Professor James Van Allen, chair of the UI Department of Physics and Astronomy, who recently served as an interdisciplinary space shuttle assignment; Charles Gould, Gardner, a NASA astronaut trained for Cooper Evans, member of Congress and students.

Regional Meetings

In October 1982, the college hosted regional meetings of two professional organizations for engineering educators and students.

The North Midwest Section of the American Society for Engineering Education held its annual meeting on October 10-12, around the general theme of "Increasing Productivity."

According to Professor James Osburn, program chair, the meeting reflected a balance between philosophical and technical concerns, and addressed needs expressed by the engineering education community in six states and one Canadian province. Presentations by educators and representatives of industry treated such diverse topics as university links with industry, evaluation of student papers and oral examinations, and the use of microcomputers in engineering education.

Student members of the Society of Women Engineers (SWE) from 31 engineering schools in the Midwest came together at the UI on October 22-24 for their 1982 Region IV Conference. The program, whose overall theme was "Formula for Success," included presentations on personal financial planning and the legal implications of "whistleblowing."

Another aspect of the conference, a careers fair, offered participants an opportunity to meet representatives of industry and talk with them about professional concerns. And, according to conference general chair Carla Sturdevant, one important purpose of the event was to provide SWE members throughout the region with a forum for exchanging ideas and expanding contacts.

Advisory Board Meetings

The College of Engineering Advisory Board, a vehicle for communication between members of the college and professionals in engineering practice, held its spring meeting in Iowa City on April 23-24, 1982. Central to the meeting were an update on the status of the college—including long-range plans for the period 1982-87—and presentations from academic programs and research units outlining major accomplishments, goals, and expectations.

The board also heard reports from its four standing committees charged with addressing such areas of concern as resource needs, placement opportunities for students, and interaction between the college and the University.

The meeting concluded with the election of new officers: Robert L. Cook (B.S.Ch.E. '70, M.S.Ch.E. '71, Ph.D.Ch.E. '73) as chair and Barbara Wollmershauser (B.S.M.E. '75) as vice chair.

At its fall meeting, held on October 15-16, 1982, the Advisory Board focused on critical issues in engineering education as identified at a July 1981 conference sponsored by the Engineering Foundation and the Accreditation Board for Engineering and Technology. The conference proceedings, Engineering Education Aims and Goals for the Eighties, served as a stimulus for the work of four ad hoc committees formed to examine four major topics, which included undergraduate and graduate engineering education and the relationship of engineering education to research and engineering practice. Each committee discussed its findings with members of the College's Administrative Council; committee reports and recommendations were then considered by the entire board.

Five new members officially joined the board at its October meeting. They are: Leland C. Adams, Amoco Production Company, Chicago (B.S.E.E. '48); Ronald R. Beck, U.S. Army Tank-Automotive Command, Warren, Michigan (B.S.M.E. '69, M.S.M.E. '70, Ph.D.M.E. '72); Walter L. Crawford, ALCOA, Davenport, Iowa; Dennis L. Foderberg, Stanley Consultants, Muscatine, Iowa (B.S.C.E. '65, M.S.C.E. '66); Allen S. Henry, Harris Corporation, Melbourne, Florida (M.S.M.&H. '68, Ph.D.M.&H. '71).

The five new members replace Dave C. Johnson, James W. Kaster, Gerald L. Kopischke, Harold E. Miller, and Richard L. Shaffer, who retired from the board at the conclusion of their terms, and Edmund Y. S. Chao, who resigned because of other responsibilities.

Gifts to the College

Private support is helping the College of Engineering approach its funding goal for completion of the Computer Aided Engineering (CAE) Instructional Laboratory established in 1981.

The laboratory provides engineering students with training and experience in established Computer Aided Design/Computer Aided Manufacturing technology, provides the means for development of new methods, and techniques through research. It will also be an important resource for continuing education.

To bring the functioning of the CAE Laboratory to its maximum potential, the college hopes to raise $500,000 from external sources, with matching funds to be provided by the University. As of September 1982, the external support totaled $232,750.

Donors include the following industrial firms: ALCOA, A. J. Case, Deere & Company, Exxon, International Business Machines, Natural Gas Pipeline, and Raytheon, on behalf of its Iowa subsidiaries, Amana Refrigeration and Iowa Manufacturing. In addition to these
industrial contributions, the college is pleased to acknowledge a substantial gift from Delno Brown (B.S.E. '42, B.A. '42). This gift is another example of how alumni and friends of the college may provide assistance to enhance the undergraduate programs.

Another fund-raising project will contribute significantly to a badly needed renovation of the college's student lounge, which currently serves about 1,500 engineering students. In conjunction with the June 1982 class reunion weekend and 1982 Homecoming, alumni from the classes of '32, '42, '57, and '72 designated the student lounge as their class gift project. Renovation of the room has been planned to coincide with other remodeling in the building. Proceeds of the alumni fund-raising campaign will be used to purchase new furnishings when the work is completed.

Faculty Members Honored

Four UI faculty members have recently been honored with awards or appointments that recognize their outstanding contributions to the engineering profession.

Professor Keith Beddow received the third annual Hausner Award of the Fine Particle Society at its 1982 annual meeting in Chicago. The award was based on Beddow's achievements in the field of fine particle science and technology, as well as his service to the organization. Beddow was instrumental in the founding of the Fine Particle Society and, as former president, has played a key role in its development.

In May 1982, Professor Karl E. Lomgren became a fellow of the Institute of Electrical and Electronic Engineers. He already holds fellow status in the American Physical Society.

At the state level, Professor Dan E. Branson was appointed by Governor Robert Ray to the Iowa State Board of Engineering Examiners. Branson's term follows that of Professor Harrison Kane, who was on the board from 1975 to 1982 and served as chair during 1980-81.

Professor Gregory R. Carmichael was recently named a University Faculty Scholar in campus-wide competition. Only about five such awards are made each year, in a program designed to provide opportunity for concentrated research and creative activity over a three-year period. Under the terms of the program, Carmichael plans to spend part of 1983-84 in Japan, working with colleagues there on development and application of regional scale atmospheric transport/chemistry models.

Students Win Recognition, High Honors

Again in 1981-82, College of Engineering students proved they are leaders by earning University-wide and national recognition for excellence.

A recent Iowa graduate was ranked as the nation's top industrial engineering student by the Institute of Industrial Engineers (formerly the American Institute of Industrial Engineers). Sandra V. Orton (B.S.I.E. '82) from Dubuque, Iowa, who received the institute's Armstrong Student Award for Excellence, was the second UI student in two years to earn this distinction. Orton also was chosen to deliver the student address at the University's summer commencement exercises. She is currently in the AT&T management training program.

Anne T. Kleaveland, a senior in electrical and computer engineering from Cedar Falls, Iowa, was named "Scholar of the Year" in a national competition sponsored by the American Consulting Engineers Council. The selection was based on scholarship, work experience, community service, and career motivation.

One of 28 Tau Beta Pi graduate fellowships was awarded to Poh-Leng Leong (B.S.I.E. '82) from Malaysia. The national engineering honor society awards these fellowships competitively on the basis of academic achievement, leadership, and promise of future contribution to the engineering profession. Leong will use her fellowship to attend graduate school at MIT. This is the third year in a row, and the fourth out of the last five years, that an engineering student from the college has won one of these fellowships.

Bryan Pearson, a senior in biomedical engineering from Ames, puts the finishing touches on the 1982 corn monument.
Program Highlights: News of Recent Accomplishments

Biomedical Engineering

Two faculty members left the Biomedical Engineering Program recently to accept new positions at other universities. Professor H. K. (Bemie) Huang went to UCLA, and Professor A. L. Pai is now at Arizona State University in Tempe. Joining the program in summer 1982 was Professor Vijay K. Goel (Ph.D. University of New South Wales), who specializes in biomechanics; he will also teach in the Mechanical Engineering Program.

Faculty Activities

Professor Krishnan B. Chandran has been awarded a two-year National Institutes of Health grant to study in vitro myocardial stiffness with Professor Parviz Nikravesh (Mechanical Engineering) as coinvestigator. In July 1982, Chandran presented a paper on heart valve prostheses at the Third International Conference on Mechanics in Medicine and Biology, in Compiegne, France. Professor Y. King Liu recently presented a paper on a finite element model of neck injuries at the International Conference on Finite Elements Methods in Shanghai. A subsequent all-China biomechanics symposium, with Liu as the principal lecturer, was sponsored by Shanghai University of Science and Technology and Chengdu University of Science and Technology. Prior to the lecture tour of the People's Republic of China, Liu also lectured in Korea and Japan.

Professor Kwan Rim, program chair, is on leave for the fall 1982 semester to serve as president of the Korea Advanced Institute of Science and Technology in Seoul.

Student Award

Neil Mooers (B.S.E., Biomedical, '82) was honored as Outstanding Senior by the all-college organization Associated Students in Engineering.

Employment Survey

The Biomedical Engineering Program recently surveyed over 6,500 biomedical industry companies concerning the probable employment outlook for all engineering specialties over the next five years. The resulting information is on file in the Engineering Placement Office for college-wide use.

Chemical and Materials Engineering

Professor Gregory R. Carmichael recently became chair of the Chemical and Materials Engineering Program. He replaces Professor Sun-Tak Hwang, who resigned to become a department head at the University of Cincinnati. According to Carmichael, a top priority for the program will be to keep the curriculum abreast of changing technology. This will mean increased use of microcomputers, especially in the laboratories, as well as continued exposure of students to developing areas, such as genetic engineering, in which chemical engineers will play a major role in implementing new technologies.

Faculty Activities

Professor Keith Beddow is past president and current secretary of the Fine Particle Society. In 1979, as president of that international organization, he traveled around the world meeting with researchers at major universities in nine different countries including Germany, Turkey, and Japan. In 1981, Beddow was keynote speaker at the International Joint Meeting for the Advancement of Particulate Technology and International Cooperation in Kyoto, Japan. Professor Gregory R. Carmichael presented a paper at the NATO-sponsored thirteenth International Technical Meeting on Air Pollution Modeling and Its Application, held in France in September 1982. He is current treasurer of the Fine Particle Society.

Professor Ravindra Datta recently presented a paper in Los Angeles at the national meeting of the American Institute of Chemical Engineers. Datta is in the process of setting up the Reaction Laboratory for graduate research and has begun work in the area of catalysis and gas-solid reactions.

Professor Emeritus Karl Kammermeyer has initiated research in a new area by

Looking Back on College Friendships

A familiar face for many engineering alumni is Mary Sheedy, who was secretary to the dean of the college from 1928 until her retirement in 1969. She came to the position from a teaching background and liked the job so well that she stayed 41 years.

Looking back, Sheedy says, “There wasn’t a minute when I wished I were somewhere else.” Her favorite recollections are of the feeling of camaraderie and of the friendships formed with hundreds of students across the years.

Sheedy still lives in Iowa City, and one of her chief pleasures still is being with people—especially young people—because, as she explains, “that’s what keeps you young.” Since her retirement she’s spent much of her time traveling and has seen most of the U.S. and some European countries as well. She hopes to make a return visit to Ireland, her ancestral home, next summer. And she intends to drop in at some class reunions in the future.

Looking Back on College Friendships

(Cont. on next page)
developing and presenting a course in genetic engineering for chemists and chemical engineers. He is also writing a textbook on the subject.

Professor James Osburn served as program chair for the North Midwest Section meeting of the American Society for Engineering Education (ASEE), held recently on the UI campus. In August 1982, Professors Osburn and Carmichael spent a week at the University of California at Santa Barbara, attending the ASEE summer school for chemical engineering faculty held once every five years.

Professor Arthur Vetter has returned to the campus from a Faculty Development Leave during which he conducted research at the John Deere Technical Center in Moline, Illinois; he plans to continue that collaboration.

Civil and Environmental Engineering

The Civil and Environmental Engineering Program has three new faculty members. Professor Forrest M. Holly, Jr. (Ph.D. Colorado State University), has a background in numerical modeling of hydrodynamics and transport processes. Professor Robert Ettema (Ph.D. Auckland University Engineering School) specializes in sedimentation engineering, ice engineering, and hydraulic structures. Both Holly and Ettema will have joint appointments with the Iowa Institute of Hydraulic Research. Professor Richard L. Valentine (Ph.D. University of California) has joined the faculty in environmental engineering; his interests include chemical kinetics, water treatment processes, and aqueous and chlorine bromine chemistry.

Faculty Activities

Professors Jasbir S. Arora and M. Asghar Bhatti have introduced computer-aided design concepts in a number of undergraduate and graduate courses in civil engineering.

Professor Dan E. Branson has been appointed to the Fulbright Commission in Bonn, West Germany, for the purpose of helping select German students for Fulbright awards to study in the United States. Branson recently traveled to Yugoslavia, where he visited a number of major engineering sites and served as a guest lecturer at the Universities of Belgrade and Skopje.

Professor Richard R. Dague serves on a pollution control process review panel for the Environmental Protection Agency for research funded by the agency's Office of Research and Development. Dague is also chair-elect of the North Midwest Section of the American Society for Engineering Education.

Professor Keith R. Long has been appointed to the Iowa Agricultural Advisory Council on Pesticides and to the American Farm Bureau Federation Professional Medical Advisory Committee.

Professor Tatsuki Nakato is technical assistant to a National Academy of Science task committee charged with evaluating various computer-based alluvial river models. The committee is chaired by Professor John F. Kennedy.

Professor Wayne L. Paulson has been elected president of the Iowa Water Pollution Control Association.

Professor Jerald L. Schnoor, currently a University Faculty Scholar, spent the spring semester of 1981-82 at the Swiss Federal Institute of Technology, where he held seminars on environmental modeling and conducted research on acid rain in Norway, Sweden, and the Swiss Alps.

Exxon Teaching Fellowship

A doctoral candidate in Civil and Environmental Engineering, Joan Ellen Zehrt, has been named recipient of the new Exxon Teaching Fellowship. The award is funded by the Exxon Education Foundation with the purpose of encouraging the development of qualified and dedicated faculty in vital areas. Zehrt received a B.S.C.E. in 1979 from the University of South Alabama, Mobile, Alabama.

Electrical and Computer Engineering

The Electrical and Computer Engineering Program saw a number of changes this past year. Professor JITendra K. Tugnait resigned to join Exxon Research in Houston. Professor Zeungnam Bien has returned to the Korean Advanced Institute of Science and Technology, after serving for a year as a visiting professor.

New faculty members are Professors Dae Hee Youn and Chu S. Jhon. Youn (Ph.D. Kansas State University) works in digital signal processing and adaptive filters. Jhon (Ph.D. University of Utah) is interested in VLSI circuit design and design automation.

David J. Skorton of the Department of Internal Medicine in the College of Medicine has been awarded a secondary appointment in the College of Engineering. His area of expertise is ultrasound applications to imaging and tissue characterization. Professor Ting-Chung Poon (Ph.D. The University of Iowa, '82) will stay on for a year as a visiting faculty member, working in optics and acoustooptic interactions.

Faculty Activities

Professor Adrianus Korpel presented a paper at the Soliton '82 Scott Russell Centenary Conference held this past August in Edinburgh, Scotland.

Professor Karl E. Longren conducted research at the Danish Atomic Energy Commission during June and July 1982. He also presented two papers at the Fifth International Conference on Plasma Physics, held in Göteborg, Sweden.

Professor Hewlett E. Melton presented a paper at the Third World Federation for Ultrasound in Medicine and Biology Conference held in July 1982 in Brighton, England.

Professor Sudhakar M. Reddy, program chair, was reappointed as an editor of IEEE Transactions on Computers.

New Laboratories

Two new interdisciplinary laboratories, which are equipped to perform state-of-the-art research in ultrasound instrumentation and cardiac imaging, have been established jointly with the College of Medicine. The Cardiovascular Image Processing Laboratory and the Ultrasonic Imaging Laboratory are directed by Professors Steve M. Collins and Hewlett E. Melton of the College of Engineering, and Dr. David Skorton of the College of Medicine.

Special Projects

The electrical engineering curriculum has been modified to include a strengthened emphasis on computer technology. B.S.E.E. candidates must now complete four courses in computers and digital systems by the end of their junior year. This requirement includes work in Fortran, Pascal, an assembly language, and hardware and software design.

Remodeling of Studio E is currently under way. A new floor to be added to this room will accommodate two laboratories in electronics circuits and digital systems, as well as providing space for about 32 graduate assistants.

Industrial and Management Engineering

Industrial and management engineering had three faculty changes in 1982. Professor Charles Standridge left the program to join Pritsker and Associates of West Lafayette, Indiana, where he plans to continue his work in database design and digital computer simulation techniques. Standridge will remain associated with the college as an adjunct professor.

Professor Tzvi Raz (Ph.D. University of Missouri) has joined the program with a
background that includes work in health administration; his research is in the area of risk assessment in health care and quality control. Another new faculty member is Professor Vorates Katchitvichyanukul (Ph.D. Purdue University), who specializes in digital computer simulation and applied statistics. He plans to extend his research on computer random number generation.

**Faculty Activities**

Professor Ronald G. Askin is recipient of a Research Initiation Grant from the National Science Foundation for research on production control.

Professor Dennis Bricker, who is on a Faculty Developmental Leave for 1982-83, plans to spend the spring semester in Taiwan. During his stay there, Bricker will teach and visit universities and industries to learn how they are making use of mathematical programming in production and distribution.

Professor James R. Buck, program chair, is past director and a current advisory board member of the Engineering Economy Division of the Institute of Industrial Engineers. He is a contributor to the new industrial engineering handbook just published by John Wiley & Sons, as well as author or coauthor of three chapters in a new Wiley textbook on human factors.

Professor John Littschwager has been especially active in redistricting activities concerning Iowa's legislature, community colleges, and high schools.

**Student Awards**

Ellen England, a sophomore from Cedar Rapids, Iowa, was awarded the Kodak Scholarship for 1982-83.

Mary Gibbs, a senior from Iowa City, received a competitive scholarship from the Cedar Rapids Institute of Industrial Engineers.

**New Advisory Board**

The Industrial and Management Engineering Program recently established an advisory board whose role will be to suggest directions for academic programs, recommend potential areas of research, and facilitate relations between the University and industry.

The seven board members represent a cross section of industry. They are: Phillip Clemens, Jeffrey Enck, James Kaster (B.S.M.E. ’57), Gerald Kopischke (M.S.I.E. ’72), John McAreevy, George Seaberg (B.S.M.E. ’60), and John Staehle.

The board met with faculty and students in spring 1982 to review goals and plans. A result of this interaction is a refocusing of program emphasis toward production and quality management—a change designed to respond to the need of industry for greater productivity-coupled with improved product quality.

**Mechanical Engineering**

The Mechanical Engineering Program experienced some significant personnel changes in 1982. Professor Ching J. (Marty) Chen took over administration of the program in August, following Professor V. C. Patel's decision to step down as chair. Professor Louis Landweber retired in June after a quarter century as a distinguished teacher and as a leading researcher with the Iowa Institute of Hydraulic Research.

Meanwhile, the program gained two new faculty members: Professor John E. Niethammer (Ph.D. Minnesota), whose research is in convective heat transfer; and Professor Lea-Der Chen (Ph.D. Penn State), whose specialty area is combustion. Professor Martin Vanderploeg (Ph.D. Michigan State), who works in mechanical system dynamics and control, will join the program in January 1983.

Chen

With Assistant Research Scientist Kyung Kook Choi, Haug is completing a book on structural design sensitivity analysis. Professors Haug and Rim will cochair the 18th Midwest Mechanics Conference to be held in May 1983 in Iowa City.

Professor Enzo Macagno delivered a series of lectures at the Faculty of Sciences of the University of Paris in December 1981. More recently, he presented a summary of his research on fluid mechanics in DaVinci’s notebooks at an international congress on DaVinci’s work in Milan, Italy.

Professors Theodore F. Smith and John E. Niethammer each chaired a session at the American Society of Mechanical Engineers Heat Transfer Conference in St. Louis in June 1982.

Professor Ralph Stephens spent the spring semester of 1981-82 on a Faculty Developmental Leave at Monash University, Melbourne, Australia, where he studied fatigue and fracture mechanics. He will chair the American Society for Testing Materials National Symposium on Fatigue at Low Temperature, scheduled for May 1983 in Louisville, Kentucky.

**Student Activities**

Sherilyn Severin (B.S.M.E. ’82) was winner of the student paper contest at the National Society of Women Engineers meeting at Ann Arbor, Michigan, in June 1982. She is continuing at the UI as a graduate student in mechanical engineering.

A team of undergraduate students (Mark Brower, Brent Hill, Dean Meyer, Steve Mitts, and Dave Plum) designed and built an off-the-road vehicle which they entered in the Mini-Baha Competition held in April 1982 at Texas Tech, Lubbock, Texas.

**New Scholarships**

A significant source of support for College of Engineering students is private funding made available by alumni and friends of the college. Two recent endowments have been established by David Buchanan (B.S.E.E. ’58, M.S.E.E. ’63), a member of the College of Engineering Advisory Board, and by Thomas L. Dimond (B.S.E.E. ’26).

The David Buchanan Scholarship is awarded each year to a highly qualified junior or senior student in electrical engineering; this year’s recipient is Lon Hintze, a junior from Bettendorf, Iowa.

The Tom Dimond Fund for Excellence in Engineering is used primarily for scholarships and also for support of selected student activities. In 1982-83, the Dimond Fund will provide financial assistance to eight undergraduate students.
Research Center News: Facilities and Studies

Center for Computer Aided Design

The newest research unit of the College of Engineering is the Center for Computer Aided Design, established in July 1981 for interdisciplinary research focusing on mechanical system dynamics and structural optimization. The center houses a PRIME 750 superminicomputer complemented by an animated graphics system, hard-copy units, and associated terminals and digitizing equipment.

Personnel associated with the center include Professors Robert L. Benedict, Edward J. Haug (director), George M. Lance, Parviz Nikravesh, and Martin Vanderploeg, as well as six full-time research professionals and approximately 35 graduate assistants.

Externally sponsored research conducted by the center reached the level of $800,000 per year in 1982, from sources such as the Army Research Office and Laboratories, the National Aeronautics and Space Administration, the National Science Foundation, Ford Motor Company, and Deere & Company. Specific projects under way include a dynamic simulation of a complex tracked vehicle with transient and overterrain responses; a study, using dynamic graphics, of the roll stability of a truck tractor with semitrailer; and automotive crash simulation studies. The center has recently developed for distribution a large-scale mechanical system dynamics simulation code.

Center of Materials Research

The Center of Materials Research was founded in 1976 on the philosophy that progressive interdisciplinary research is needed to find substitutes for raw materials that are being rapidly depleted. The present focus of the center’s research is biomedical engineering, with particular emphasis on biomechanics.

Under the directorship of Professor Y. King Liu, the center has been awarded a number of federally sponsored grants and contracts. These include a three-year National Institutes of Health grant for studies on traumatology of the head and spine; a Department of Defense contract for applied research concerning the design of aviation helmets; and a grant from the Department of Education’s Rehabilitation Services Administration, for basic studies of low back pain. The latter is a joint venture of the College of Engineering and The University of Iowa Hospitals and Clinics.

Iowa Institute of Hydraulic Research

The Iowa Institute of Hydraulic Research (IIHR) has earned recognition as an international leader in numerous areas of fluid mechanics and hydraulic engineering. Under its present director, Professor John F. Kennedy, IIHR continues to function at the interface between applied engineering hydraulics and basic research in fluid mechanics.

The largest projects undertaken by IIHR staff in 1981-82 were design and testing of protective ice-control structures for the proposed port and dock facility at Nome, Alaska (the first major project conducted in the institute’s new refrigerated flume and towing tank); and design and testing of dropshaft structures for a $1.5 billion inline storm water storage system that will be a major component of the municipal water pollution control program in Milwaukee, Wisconsin.

IIHR was recently chosen by the Office of Naval Research as a Special Focus Research Center, one of two research centers in the country to be so designated. Under the direction of Professor V. C. Patel, IIHR will conduct research pertinent to problems of specific interest to the Navy, and will train high-level personnel in the area of ship hydrodynamics.

Professors Louis Landweber and V. C. Patel spent May 22 to June 1, 1982, in Japan under the U.S.-Japan Cooperative Research Program for research in fluid dynamics of ship viscous flow. Their trip, made possible through National Science Foundation funding, reciprocated a 1981 visit to IIHR by leading Japanese research engineers. Professors Landweber and Patel spent the following week in Korea, where they met with prominent researchers in ship hydrodynamics.

Personnel News

Professor Louis Landweber retired in 1982 after 28 years of distinguished teaching and influential research. He plans to continue his research in ship hydrodynamics as a professor emeritus and says that he can now solve the problems that he did not have time for as a regular faculty member.

Professor Virendra C. Patel is now devoting full effort to teaching and to research at IIHR. Until summer 1982, Professor Patel had served as chair of...
Placement Office: New Director Will Continue Flexible Service

Although 1981-82 began on a hopeful note for many companies recruiting on campus, many revised their projected need downward when it became evident that the hoped-for turnaround in the economy was not yet within reach. The most optimistic outlook was for electrical engineers, followed by mechanical engineers. Leslie Hauschildt, former director of The Engineering Placement Office, looks for this trend to continue until an overall improvement in the nation’s economy takes place.

Starting salary offers for engineering graduates again kept their edge over those for other university graduates, although salaries for computer scientists were beginning to equal those for engineers. On a positive note, starting offers for graduating engineers showed a 12 percent rise over the previous year—a significant increase, given the slowing of the inflation rate during the same period. While electrical engineers had the highest average starting salary offer, the highest average accepted salary went to biomedical engineers.

The Placement Office saw a transition in leadership this past summer. The directorship passed on August 1 to Corinne Hamilton, who until that time was head of the University’s Career Services and Placement Center. During Hauschildt’s tenure as director she stressed flexibility, describing the role of placement as “finding what the situation needs and providing it.”

Hamilton says she agrees with this philosophy and sees the placement operation a catalyst, maintaining clear channels of communication among its various constituencies—primarily students, faculty, alumni, and potential employers.