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A Progress Report from the Dean

This is the first issue of the Iowa College of Engineering Newsletter, designed to provide more effective communication with our alumni and friends. In this and future issues we will bring you news and feature articles about student activities and projects, faculty accomplishments and awards, progress and changes in our academic programs, and alumni advancements and successes. It has been a decade since the College has made any formal contact with you. My intent here is to briefly summarize the major events which have occurred over that period.

The most apparent change has been the resurgence of student interest and enrollment in engineering. The College currently enrolls about 1,200 undergraduate students and 300 graduate students; both values are historical highs for the College and constitute an increase of nearly two and one-half times the total enrollment within the decade. Not only have the numbers increased, but the quality as well. As a group, the entering freshman class in recent years has had an average composite ACT score which is exceeded within the University only by pre-Medicine students by a slight amount. Women now constitute nearly 20 percent of the undergraduate student body. This renewed interest in engineering education would be a supreme pleasure if it were not for the budget limitations of recent years, which have precluded adding the faculty needed to accommodate the students in the fashion that has been our hallmark in the past. Some classes are larger than desired, and some laboratory sessions are being conducted during evenings and weekends.

Student activities continue to abound: the corn monument for Homecoming was revived a few years ago, the Kurtz Lecture is now a fall fixture, MECCA Week is celebrated in mid-March, the Open House and the Technology and the Spirit of Man Symposium are held each spring, and the women student engineers have developed an annual conference which gives them the opportunity to encourage other young women to consider engineering as a career and to address issues of interest to women engineering students. The campus climate has changed tremendously in the last decade. The student body now is more studious and less interested in solving today's social problems by revolutionary methods. In other words, calm has returned to the campus scene.

The strength of the College lies in its faculty. Although the faculty has grown only about 10 percent in the last 10 years to the present level of 65 persons, natural attrition through retirements and resignations has resulted in about a 50 percent turnover. Essentially all members of the faculty are productive scholars and many have earned national—and some even international—reputations for the excellence of their scholarly activities. The College is extremely proud of the three members of its faculty (Emeritus Dean and Professor Hunter Rouse and Professors John F. Kennedy and Louis Landweber) who have been elected to the National Academy of Engineering—the highest professional honor an engineer can receive.

Colleges are always concerned with the quality of their educational programs. It has been suggested that the proof of a program's quality lies in the quality of the product—the graduates—and that the quality of the graduates can be determined by examining their career successes. A recent analysis of the listings in Who's Who in Engineering established that the University of Iowa College of Engineering ranked 18th in the nation in terms of the number of graduates cited per 1,000 living alumni. This achievement is gratifying to us at the College and is testimony to the excellence of the accomplishments of our alumni.

In 1974 the College adopted a matrix administrative structure which...
replaced the former departmental structure. Another significant change occurred in 1978 when two of the graduate programs were consolidated into other graduate programs. Details of the administrative structure and of the program consolidation are discussed in a later section of this newsletter.

The current trend in engineering education is to incorporate the rapidly developing field of Computer Aided Design (CAD) into the curriculum. CAD is the use of computer graphics (displaying pictures instead of numbers) in an interactive mode to assist in engineering design. To facilitate this instructional activity in all disciplines, a CAD Laboratory has been designed. Computer terminals and software are being acquired through University funds and industry support. CAD techniques are being taught in four courses in two curricula this academic year; these techniques will be integrated into all undergraduate curricula within three years. A companion research activity is under way in the recently established Center for Computer Aided Design, where new methods and techniques are being applied to structural and mechanical systems.

Engineering education here, and at all other schools in the country, faces some difficult problems. The most severe is the increasing difficulty of attracting and retaining qualified engineering faculty members. The demand for baccalaureate graduates and the high entry-level salaries have tempted more and more of the best students to enter industry rather than to pursue graduate studies leading to teaching careers. While undergraduate enrollment has soared, the availability of qualified potential engineering faculty members has plummeted. The inability to fill available faculty positions has led to a situation where, in spite of the need for graduates and the availability of qualified applicants, limitations on enrollments have taken place at Iowa. The second critical problem is the obsolescence of instructional and research laboratory equipment. Inadequate funding, in a time of burgeoning enrollments and rapid technological progress, has rendered equipment purchased within the past decade inadequate.

I hope this communication will provide a vehicle for an understanding of the progress and problems of our College. I welcome your comments and suggestions.

Robert G. Hering, Dean
College Organization and Program Changes

New Administrative Structure
In response to changing demands and societal needs, the College has modified its administrative structure by adopting a matrix organization. The change, instituted in 1974, was designed to maintain the continuity of established degree programs in chemical, civil, electrical, industrial, and mechanical engineering, while increasing the educational opportunities in such contemporary fields as biomedical, environmental, energy, and systems engineering.

The matrix organization replaced the traditional engineering departments with administrative units called divisions and curricular areas called programs. The divisions bring together groups of faculty members with similar research interests; they have ongoing responsibility for course and laboratory development, as well as for the conduct of all research activities. The programs consist of faculty groups with the appropriate disciplinary interests, which determine curricular and degree requirements, drawing on divisional resources to meet current educational, societal, and professional needs.

A better allocation of existing resources was the purpose of the revised administrative organization, which did not entail new courses, new degrees or additional funding.

Program Consolidation
Following the 1974 introduction of the matrix organization, the College consolidated several of its graduate academic programs in 1978. The Environmental Engineering Program and the hydraulics and water resources areas of the Mechanics and Hydraulics Program were combined with Civil Engineering to form the Program of Civil and Environmental Engineering. The fluid mechanics and mechanical science areas of Mechanics and Hydraulics were consolidated into the Mechanical Engineering Program. Thus, the former graduate programs in Mechanics and Hydraulics and in Environmental Engineering no longer exist as separate degree programs.

This consolidation extended to the graduate level the disciplinary components of the corresponding undergraduate programs; it also joined together faculty with similar professional interests who had previously been in different programs.

During the consolidation, three other graduate programs were renamed to reflect the contemporary directions of faculty activity: Chemical Engineering became Chemical and Materials Engineering; Electrical Engineering became Electrical and Computer Engineering; and Industrial Engineering became Industrial and Management Engineering.

The College, of course, continues to offer the accredited professional undergraduate academic programs in chemical, civil, electrical, industrial and mechanical engineering.

Research Centers
The program consolidation did not directly affect the Institute of Hydraulic Research, which continues to flourish as one of the College's research centers. In 1976, a second research center was established. The Center for Materials Research is currently involved with fundamental and applied research in biomedical engineering, with particular emphasis on biomechanics. The Center for Computer Aided Design has been recently established as a third center for research using computer simulation and interactive computer graphics.

New Program
In addition to the rearrangements in the existing programs, a new program was approved and implemented in 1974. The undergraduate program in Biomedical Engineering, which now has approximately 150 majors, is proving to be one of the most popular majors among Engineering students. Though the program is not yet accredited, faculty strength and course offerings have grown to the extent that the College will soon seek its accreditation.

Division and Program Chairs and Directors
Heading the Engineering divisions are:
Professor Kwan Rim, Materials Engineering
Professor Virendra C. Patel, Energy Engineering
Professor Sudhakar M. Reddy, Information Engineering
Professor James R. Buck, Systems Engineering
Current program chairs are:
Professor Kwan Rim, Biomedical Engineering

The Engineering Advisory Board
The College of Engineering Advisory Board is an important channel of direct two-way communication between the College—its faculty, administration and students—and engineering practitioners. Advisory Board meetings provide an opportunity for Board members to become more informed about the current situation in engineering education, and the College benefits from personal discussion of its programs and goals.

The Board generally meets once each semester to consider the College's major accomplishments, plans and challenges. The Board is organized into four standing committees that have been charged with addressing particular areas of concern.

The Facilities and Finance Committee is currently working on space utilization problems and laboratory needs. The Industrial Relations Committee is cooperating with members of the College on placement-related matters and programs to encourage enrollment of minority students. The Character of the College Committee is, at present, providing assistance with specific academic programs. Work of the Student Relations Committee has been focusing on the Co-op program for engineering students, as well as the student outreach and peer counselor programs.

In the Board's 14-year history, its members have included high-level executives of such diverse corporations as General Electric, Rockwell International, John Deere, IBM, Du Pont and Monsanto, as well as
consulting firms and businesses in the State of Iowa.

Members are chosen to represent a wide spectrum of engineering practices. At normal strength, the Board has 15 members, though the number is flexible. In addition, the Dean, Associate Dean, Division Chairs, and Directors of the Institute of Hydraulic Research and Center of Materials Research participate as ex officio members.

According to the Board's charter, at least one-third of the membership must be from outside the local region to provide a cosmopolitan point of view. Criteria for membership are a demonstrated interest in the University and the College and current engagement in engineering or in a business or profession in which engineering is a major factor.

While UI alumni constitute the majority of the present Advisory Board, its membership is not limited to alumni. Current nonacademic Board members are:

Delno W. Brown, retired from John Deere, Moline, Illinois (B.S.C.E. '42, B.A. '42)

David R. Buchanan, formerly with Talos Systems, Phoenix, Arizona (B.S.E.E. '58, M.S.E.E. '63)

Dr. Edmund Y. S. Chao, Mayo Clinic, Rochester, Minnesota (Ph.D. M.&H. '71)

Dr. Robert L. Cook, E. I. du Pont de Nemours, Wilmington, Delaware (B.S.Ch.E. '70, M.S.Ch.E. '71, Ph.D. Ch.E. '73)

Orrin J. Gode, Johnson County Engineer, Iowa City, Iowa (B.S.C.E. '49)

Dave C. Johnson, Stanley Consultants, Muscatine, Iowa (B.S.M.E. '50)

James W. Kaster, Minnesota Mining and Manufacturing, St. Paul, Minnesota (B.S.M.E. '57)

Gerald L. Kopischke, Interstate Power Co., Dubuque, Iowa (M.S.I.E. '72)

Harold E. Miller, Howard R. Green Co., Cedar Rapids, Iowa (B.S.E. '50)

Keith R. Rathjen, Rockwell International, Dallas, Texas (B.S.E.E. '56, M.S.E.E. '57)

Richard L. Shaffer, Construction Engineering Research Laboratory, Champaign, Illinois

Terry A. Shuck, Structural Engineers, Inc., Des Moines, Iowa (B.S.C.E. '57, M.S.C.E. '58)

Barbara Wollmershauser, Warren Petroleum Co., Tulsa, Oklahoma (B.S.M.E. '75)

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The guests will be invited to tour a number of engineering laboratories in the Engineering Building, the Chemistry Building and the Institute of Hydraulic Research, and to visit with individual faculty members about topics of mutual interest.

EXXON

Exxon Grants $150,000 to College

The College of Engineering has recently been chosen by the Exxon Education Foundation to receive two awards totaling $150,000, whose purpose is to encourage development and retention of qualified and dedicated faculty in vital areas.

The University of Iowa is one of 66 schools to receive awards in two parallel special programs that are part of the Exxon Corporation's centennial celebration.

An Exxon Teaching Fellowship will underwrite the expenses of a doctoral student in Civil and Environmental Engineering who plans to pursue a teaching career. An Exxon Faculty Assistance Grant will be used to provide special salary support to nontenured faculty members in Mechanical Engineering.

Dean Robert G. Hering expressed the hope, during a recent meeting on campus of executives from Iowa business and industry, that other firms will follow Exxon's example in recognizing the critical needs of engineering education. He called the Exxon program "an important step" in helping encourage qualified engineering students to contribute their talents to the field of education.

Industry Engineering Day

To encourage the exchange of information and ideas between the University and industry, the College of Engineering is planning to host an open house for selected industrial representatives. The day-long activity, scheduled for April 1982, will acquaint visitors with the University and offer them an overview of current research activities in the College.

Following a welcome by the University president and the dean of the College, the various division chairs and the director of the Institute of Hydraulic Research will present synopses of research in their areas. In addition, a series of brief seminars will provide the opportunity for a closer look at specific faculty research projects.

The guests will be invited to tour a number of engineering laboratories in the Engineering Building, the Chemistry Building and the Institute of Hydraulic Research, and to visit with individual faculty members about topics of mutual interest.

Faculty and Staff Changes

Engineering alumni visiting the College today would see a number of new faces and notice the absence of some familiar ones. In the last few years, the College has made some significant additions to its faculty and staff and observed the retirement of several well-known members.

Professor Melvin L. Betterley retired in June 1978, followed by Professor J. Wayne Deegan in December 1979, and Professors Thomas Farrell and Everett D. Alton in May 1980. Two members of the College's administrative staff retired during the same time period—Administrative Assistant Ruth White in June of 1979, and Helen Mikelson, Placement Office Secretary, in June 1980. Earlier faculty retirements (and year they occurred) include: Joseph W. Howe (1970), Karl Kammermeyer (1972), John J. O'Mara (1975), Hunter Rouse (1974), and Lawrence A. Ware (1969). With the exception of Hunter Rouse, who now lives in Arizona, all of the above emeriti faculty still reside in Iowa City.

One of the most recent additions to the faculty is Professor James R. Buck, who came to Iowa from Purdue University to serve as chair of the Division of Systems Engineering and the Program of Industrial and Management Engineering. In this dual capacity he succeeds Professor John M. Liittschwager, who has returned to full-time teaching.

In June 1981, Professor Sudhakar M. Reddy was named chair of the Division of Information Engineering and of the Electrical and Computer Engineering Program. Professor Reddy replaces Professor Robert C. Arzbach, who moved to Chicago to become Director of the Pritzker Institute of Medical Engineering at Illinois Institute of Technology.

The Engineering Placement Office has been under new leadership since September 1980. In the newly created professional position of Placement Director, Leslie Hauschildt has assumed some of the former responsibilities of Helen Mikelson and of Professor Thomas Farrell.
Other changes have given the Office of the Dean a new look. Professor George M. Lance stepped down as Associate Dean of Undergraduate Affairs in June 1979, to resume full-time faculty status. He has continued his chairmanship of the undesignated degree program. At the same time, Professor Kwan Rim left the office of Associate Dean of Graduate Affairs to devote his full energies to serving as chair of the Division of Materials Engineering and of the Biomedical Engineering Program.

Dean Hering combined the two Associate Dean positions into a single position, and added a new position entitled Assistant to the Dean. Professor Paul Scholz of the Mechanical Engineering Program became Associate Dean in July 1979. Norlin Boyd was named Assistant to the Dean in April 1980; he was formerly with the Office of the Registrar and has general responsibility for student outreach, academic records, scholarships and advising of undeclared undergraduate students.

In a related change, the position formerly held by Ruth White was upgraded to Administrative Associate; it was filled in August 1979, by Ronald Wheat, who was previously with the Office of the Registrar.

College of Engineering faculty member, Kwan Rim (left), and Advisory Board member, Dehno Brown of Moline, Illinois (right), discuss challenges facing the Iowa College of Engineering at the fall Advisory Board meeting.

Recent Faculty Honors

Our profession's highest honor is membership in the National Academy of Engineering; and three past and present University of Iowa professors are among its members.

Emeritus Carver Professor and Dean Hunter Rouse, a noted engineer, educator and researcher, was elected to the Academy in 1966. Professor John F. Kennedy, Director of the Institute of Hydraulic Research (IHR) and Professor of Civil and Environmental Engineering, was elected in 1973, and Professor Louis Landweber, research engineer at the IHR and Professor of Mechanical Engineering, received the honor in 1980.

Professors Kennedy and Landweber have additional recent distinctions to their credit. In July of 1981, Professor Kennedy was named a Carver Distinguished Professor at the University of Iowa; he is also the current president of the International Association for Hydraulic Research. Professor Landweber, known as one of the world's leading ship hydrodynamics, was invited to give the fourth Weinblum Memorial Lecture on Ship Hydrodynamics in Hamburg, Germany, on November 18, 1981.

A number of other distinguished accomplishments attest to the high quality of the College's faculty. Professor Ralph Stephens, Mechanical Engineering, traveled to several cities in the Soviet Union as a lecturer in the USA-USSR Scientific Exchange Program, which took place in May and June 1981. Professor Jerald Schnoor traveled to the Soviet Union during October 1981, as a delegate to the joint USA-USSR project on forecasting the behavior of pesticides in the environment.

Three of the faculty have received an Alexander von Humboldt U.S. Senior Scientist Award from the Federal Republic of Germany. Professor Ching-Jen Chen, Mechanical Engineering, received the award in 1974-75 in recognition of his work in turbulence of buoyant jets; Professor Dan E. Branson, Civil and Environmental Engineering, in 1980 for his work in the field of deformation of concrete structures; and Professor Virendra C. Patel, Mechanical Engineering, in 1980 for his contributions in the field of three-dimensional boundary layers.

Dean Robert G. Hering received a Fulbright Scholarship for the 1980-81 academic year. He combined this award with a University of Iowa Faculty Developmental Assignment to study in West Germany at the Universität Stuttgart.

In 1980, Professor Karl E. Lonngren, Electrical and Computer Engineering, became a fellow of the American Physical Society.

Professor Keith Beddow, Chemical and Materials Engineering, is president of the Fine Particle Society and serves as editor of that group's journal.

Professor Harrison Kane, Civil and Environmental Engineering, has been a member of the Iowa State Board of Engineering Examiners since 1975, serving as Chairman in 1980-81.

In 1979, Professor George M. Lance, Mechanical Engineering, received the University's Hancher-Finkbine Medallion, awarded to one
(cont. from preceding page)

faculty member each year in recognition of outstanding leadership and service to the University.

At present, several faculty members hold high offices in state, national and international engineering organizations. And a number of prominent educators have come from within the faculty ranks—including fourteen engineering college deans, four college or university presidents and four presidents of the American Society for Engineering Education.

Professor James Osburn has been elected program chair for the American Society of Engineering Education North Midwest Section meeting, planned for October 1982, in Iowa City.

Professor Arthur Vetter is newsletter editor for the Fine Particle Society. He is on leave for fall semester 1981-82 while conducting research at the John Deere Technical Center in Moline, Illinois.

New Laboratories
Professor Datta has established a new Reaction Engineering Laboratory for research in the areas of heterogeneous and homogeneous catalysis, transport in porous media and chemical reactor analysis.

With the assistance of a National Science Foundation grant, Professor Beddow has established an Experimental Morphology Laboratory for basic research and for the course, Fine Particle Characterization.

Civil and Environmental Engineering
Professor Jasbir S. Arora published a textbook, Applied Optimal Design: Mechanical and Structural Systems, with Professor Edward J. Haug of Mechanical Engineering, and developed and presented several related short courses.

Professor Dan E. Branson is a member of an international committee, Evaluation of Time-Dependent Properties of Concrete, sponsored by the American Concrete Institute and the Comite European du Beton. He has published several recent books on concrete structures, including Deformation of Concrete Structures (McGraw-Hill) and two books in Spanish.

Professor Richard Dague recently served on the University committee to select the president; he also is serving on a national research review panel for the U.S. Environmental Protection Agency. He is continuing his anaerobic biological systems research with a renewed emphasis on methane as an energy source.

Professor Harrison Kane, program chair, has been awarded a Faculty Developmental Leave for the first semester 1981-82 to apply the principles of optimization theory in the design of retaining walls.

Professor Wayne Paulson, acting program chair during Professor Kane’s absence, is continuing the Iowa tradition of oxygen transfer research and application. He serves on national ASCE and WPCF committees and has

Program Highlights: A Sampling of Recent Activities and Accomplishments

Biomedical Engineering
Professor Clyde M. Berry is currently on the board of trustees of the Industrial Hygiene Foundation and a member of the Governor’s Science Advisory Council for the State of Iowa. He recently received an appreciation plaque from the Council of Public Health Consultants, National Sanitation Foundation.

Professor Krishnan B. Chandran is a member of a National Institutes of Health Clinical Sciences Study Group and of the National Research Council’s Committee on Hearing, Bioacoustics, and Biomechanics.

Professor H. K. (Bernie) Huang is an associate editor for the Journal of Computers in Biology and Medicine and is a member of the National Research Council’s Committee on Hearing, Bioacoustics and Biomechanics.

Professor Roderic S. Lakes coauthored a chapter in Orthopaedic Bioengineering: A Treatise (1980) and a chapter in Electrical Properties of Bone and Cartilage.

Professor Y. King Liu is chair of the National Research Council’s Committee on Hearing, Bioacoustics and Biomechanics. He also serves as director of the Center for Materials Research and co-director of the Rehabilitation Engineering Center at the University.

Professor Kwan Rim, program chair, was keynote speaker for the National Bureau of Standards Asian Pacific Minority Scientists’ and Engineers’ Week in May 1981. He was co-chair of the 1981 Midwest Mechanics Conference and is a member of the executive committee, Biomedical Engineering Division, of the American Society of Engineering Education.

Professor Jai H. Ryu was awarded first prize for a poster presentation at the annual meeting of the American Academy of Otolaryngology (AAO) in September 1981. He holds committee memberships for the AAO and the Association for Research in Otolaryngology. This fall Professor Ryu introduced a new course, “Apprenticeship in Clinical Engineering—Biomedical Engineering,” which involves ten clinical laboratories at University Hospitals.

Chemical and Materials Engineering
Professor Keith Beddow presented a paper at the Conference on Powder Technology held recently in Japan. He is the author of several books on particle morphology and powder science.

Professor Greg Carmichael is currently receiving support from NASA and Battelle Pacific Northwest Laboratories for research in regional air pollution modeling.

Professor Chang Kyun Choi, a UI alumnus (M.S.Ch.E. ’72) and now with Seoul National University, has returned as a visiting professor for 1981-82.

Professor Ravindra Datta joined the program in August 1981, with a Ph.D. from the University of California at Santa Barbara. His specialty is reaction kinetics and catalysis.

Professor Sun-Tak Hwang, program chair, has recently become a member of the editorial board of the Journal of Membrane Science, and was invited to serve as guest editor of a special issue dedicated to Emeritus Professor Karl Kammermeyer in recognition of his pioneering work in membrane separation. Professor Hwang is currently being supported in his activities by grants from the National Science Foundation, Motorola and Dow Corning.

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presented seminars in Oslo, Amsterdam, Sao Paulo and Toronto.

Professor Jerald L. Schnoor was named a University Faculty Scholar in 1980, in a program designed to provide opportunity for concentrated research and creative activity over a three-year period. Professor Schnoor has been appointed to the editorial board of *Environmental Toxicology and Chemistry*.

Professor James Stoner was recently named chair of a major design committee in the Institute of Transportation Engineers—he continues to serve on the Transportation Research Board.

Professor Han C. Wu presented a special seminar on viscoplasticity at the National Tsing Hua University, Taiwan, under sponsorship of the Society of Theoretical and Applied Mechanics of Taiwan.

**New Laboratories**

A new **Plasticity Research Laboratory** has been established through a National Science Foundation grant to Professor Han C. Wu. The grant funded the purchase of a servo-controlled, axial-torsional MTS test system controlled by a DEC 11/04 mini-computer.

The **Environmental Engineering Laboratory** at the University Water Plant has been expanded by 4,500 square feet. This space, coupled with a five year training grant and a University commitment to a five member faculty team, has resulted in significant increases in research activity and an increased graduate program enrollment of 30 to 35 students.

The Institute of Hydraulic Research has recently added a refrigerated towing tank to study ice forces and formations on structures. In addition, the Institute is constructing a new refrigerated wind tunnel with a 1.4 x 1.8 meter test section. This new facility will be used for studying wind loadings and ice accumulations on structures, as well as atmospheric dispersion phenomena. The Institute also has a large river bend model to study flow processes in meandering rivers.

**Electrical and Computer Engineering**

Professor Dong H. Chyung presented a paper at the eighth Triennial World Congress of the International Federation of Automatic Control in Kyoto, Japan, in August 1981.

Professor Steve M. Collins presented a paper at the annual Computers in Cardiology Conference in Florence, Italy, in September 1981.

Professor Karl E. Lonngren spent the summer of 1981 at the Institute of Space and Astronautical Science in Tokyo and is an associate editor of *IEEE Transactions on Plasma Science*.

Professor Sudhakar M. Reddy, program chair, is an associate editor of *IEEE Transactions on Computers*. He presented two papers at the 10th International Symposium on Fault-tolerant Computing in Kyoto, Japan, in October 1980.

**Student Awards**

Chung Chan (Ph.D. 1981) received an IEEE Nuclear and Plasma Sciences Society graduate student award.

Graduate students Partha Banerjee, Ting-Chung Poon, Monish Chatterjee and Abdul Banah received IEEE Ultrasonics Society travel grants to attend the society's 1981 symposium in Chicago.

**New Laboratories**

Support from the National Science Foundation and private industry has made possible the establishment of a **Hybrid Microelectronics Laboratory** under the direction of Professor Ronald F. Vogel. Equipment for the laboratory was donated by Rockwell International, Motorola and Laser Trim.
A Medical Ultrasonics Research Laboratory has been established by Professor Hewlett E. Melton. Sources of support for the laboratory and its activities are Advanced Technology Laboratories, Varian Associates and several federal funding agencies.

Industrial and Management Engineering

Professor Ronald G. Askin is the newsletter editor of the Statistics Division, American Society for Quality Control and an associate editor of American Institute for Industrial Engineers Transactions.

Professor Dennis Bricker has published recent papers in American Institute of Industrial Engineers Transactions, Mathematical Programming and SCIMA (the journal of the Management Science and Applied Cybernetics Society).

Professor James R. Buck, program chair, is current director of the Engineering Economy Division of the American Institute of Industrial Engineers.

Professor John Liittschwager has published results of his recent research in a book entitled Redistricting in the States.


Professor Charles Standridge has been active in developing a Data Base Language for Simulation Studies and has been working with the University's health services research group in revising the Medicaid Drug Program.

New Laboratory

A Human Factors Laboratory, which uses a minicomputer to collect experimental data from human subjects, was established in 1980. Further laboratory development is proceeding.

Mechanical Engineering

Professors Robert Benedict and Parviz Nikravesh (along with Professor Asghar Bhatti of Civil and Environmental Engineering) received University summer fellowships for development of undergraduate courses using computer graphics in the College's new Center for Computer Aided Design.

Professor Ching J. Chen recently visited Korea, Japan and the People’s Republic of China to lecture at several leading institutions in those countries.

Professor Chen and Professor Krishnan B. Chandran received a National Institutes of Health grant for a three-year project entitled “Pulsatile Flow Dynamics of Prosthetic Heart Valves.”

Professor Edward J. Haug, director of the Center for Computer Aided Design, was a keynote speaker at the Midwest Mechanics Conference, Ann Arbor, Michigan, in May 1981.

Professor Enzo Macagno is currently conducting research at the Universities of Karlsruhe and Paris.

Professor Virendra C. Patel, program chair, is a member of the Resistance Committee of the International Towing Tank Conference and a member of the Governor’s Science Advisory Council for the State of Iowa. During his leave to West Germany in 1980-81, he visited and presented lectures at many universities and laboratories throughout Europe and England.

Professor Belakavadi Ramaprian has received a three-year National Science Foundation grant for “Further Experiments on the Turbulent Structure of Two-Dimensional Boundary Jets.”

Professor Theodore F. Smith is involved in a study of solar-assisted ethanol production under grants from the Department of Energy and the Iowa Energy Policy Council. Working with him is graduate student Matthew L. Holden.

Professor J. Merle Trummel served as acting program chair in 1980-81 during Professor Patel’s absence. He spent the previous spring semester on a Faculty Developmental Leave, working in the area of computer graphics at the John Deere Technical Center in Moline, Illinois.

Student Awards

In 1980, undergraduate students James M. Friedman (B.S.M.E. ’81), Curt D. Haney (B.S.M.E. ’80) and Matthew L. Holden (B.S.M.E. ’80) placed second in the American Society of Mechanical Engineering Student Contest, held in conjunction with the ASME Design Engineering Technical Conference in San Francisco.

New Facilities

The renovation of the two floors of the West Wing of the Engineering Building is now complete and the new labs abound with activity. For instance, the solar-assisted ethanol fuel project is located in one of the labs on the second floor. In addition to the labs in the Engineering Building, the program also has labs located at the Institute of Hydraulic Research. A new unsteady flow water tunnel has been developed at the Institute to study flows found in turbomachinery and the flow around helicopter rotors.
Students Cited for Excellence, Achievements

Continuing a tradition of excellence, recent College of Engineering students have gained more than their share of recognition at local, national and international levels.

The American Institute of Industrial Engineers Student Award for Excellence—given each year to one student in the nation—was awarded in 1981 to Kevin Smith (I.E.), a senior from Waterloo, Iowa, who will graduate in December 1981.

The Hancher-Finkbine Medallion is awarded annually to recognize two undergraduate and two graduate students for academic achievement and service to the University. This distinction went in 1979 to Siiri Sloat (B.S.E., Biomedical, '79) of Donnellson, Iowa, as the University's most outstanding female undergraduate student; and in 1978 to Dennis R. Kruse (B.S.E. '80) of Iowa City, as the top undergraduate male student. The UI Distinguished Student Leader Award, which honors runners-up for the Hancher-Finkbine Medallion, went to Pearl Cheng (B.S.E., Biomedical, '81) of Coralville, in 1981; and to Eva Breckner (B.S.C.E. '80) of Burlington, Iowa, in 1980.

A limited number of Tau Beta Pi National Fellowships for graduate study are awarded each year in national competition. Recent UI recipients were Pearl Cheng in 1981; Eva Breckner in 1980; and Stephen J. Thoman (B.S.C.E. '77), of Waterloo, in 1978.

The University of Iowa Virgil M. Hancher Memorial Scholarship has been awarded to engineering students the past two years: Pearl Cheng received the award for 1980-81, and Kevin Smith for 1981-82. The scholarship is awarded annually to a junior student at the University who has achieved a high level of scholarship and has exhibited evidence of maturity and social responsibility.

Twice since 1971, an Iowa graduate has received the Lorenz G. Straub Award in international competition for the best doctoral dissertation in hydraulics and fluid mechanics.

Engineering Senior Named Homecoming Queen

An Industrial Engineering senior, Sandy Orton of Dubuque, Iowa, was named the University's 1981 Homecoming Queen. Homecoming royalty are chosen on the basis of scholarship, leadership, service and a personal interview with a selection committee that includes UI administration and alumni.

Extracurricular Activities Complement Classroom Learning

UI Engineering students are a diverse and dynamic population. They are active in at least 15 different organizations that complement classroom learning with a variety of experiences ranging from scholarly to social.

Several of the organizations are college-wide: Associated Students of Engineering, Black Students in Engineering, the Society of Women Engineers, Tau Beta Pi honor fraternity and Theta Tau service fraternity. In addition, students in various engineering specialties pursue their common interests through program-related organizations, including student chapters of professional societies and honorary fraternities (for example, American Society of Civil Engineers, Institute of Electrical and Electronic Engineers, Chi Epsilon and Eta Kappa Nu).

Associated Students of Engineering (AS of E)

Such traditions as the corn monument and the search for the Blarney Stone are "alive and well," according to Bill Farrell, Biomedical Engineering senior from Iowa City, current AS of E president.

He describes his fellow students as a vibrant, competent and dedicated group, and considers that a sprinkling of traditional fun enriches the day-to-day activities of the student body.

Farrell is president of the organization that exists to serve professional, academic and social needs of all students in the College.

Associated Students of Engineering plans many of the all-college activities that uphold tradition and create a sense of camaraderie—including MECCA Week, the annual pig roast and the fall and spring student-faculty picnics.

The organization fulfills one of its more serious purposes each year by hosting a well-known speaker to highlight the University's observance of National Engineers' Week. In February 1981, consumer advocate Ralph Nader came to the campus under the joint sponsorship of AS of E and Theta Tau.

On a routine basis, AS of E provides many ongoing services to the students and the College. For instance, it publishes a magazine by and for students, the Hawkeye Engineer—one of the few remaining student-managed and student-financed monthly publications of its kind in the nation. It also publishes a newsletter, works with the Office of the Dean in matters concerning students and arranges for student participation on College committees. In addition, AS of E represents the College to the Collegiate Associations Council, a University-wide student government organization.

(cont. on next page)
The April 1981 symposium explored ideas on significant contemporary issues. The Spirit of Man Symposium, that their most important contribution lies in organizing the annual Technology Open House and sponsoring review sessions to help students prepare for the on-campus interview program by recognizing juniors and seniors who have demonstrated outstanding engineering honor society takes pride in providing service in a number of ways, including writing to students using the office. The number interviewing in 1980-81—256 of the students using the office. The number interviewing in 1980-81—256 of the College received the most consistently high offers. The highest starting salaries for bachelor-level graduates were reported in the oil industry, followed by the chemical and heavy machinery industries. Chemical engineers received the most consistently high offers. The year's placement statistics reflect Iowa's slow industrial growth, with 70 percent of graduates finding employment out of state. This trend is balanced however, by the fact that the majority of the College's graduates did remain in the Midwest. In 1980-81, the College awarded 269 degrees: 66 percent at the bachelor's level, 30 percent at the master's level and 4 percent at the doctoral level. This continues the trend of an increase in the proportion of undergraduate versus graduate degrees. The largest number of undergraduate degrees went to majors in Mechanical and Electrical Engineering, while Environmental Engineering conferred the most graduate degrees. More students are taking advantage of on-campus interviews, partly because of the growing number of bachelor-level students using the office. The number interviewing in 1980-81—256 of their capabilities. In working toward its goals, the local SWE chapter is reaching out to students of high school age and younger to promote awareness of the engineering profession; providing a supportive, collegial atmosphere for women engineering students on campus; and making professional development resources available to its members and others. The group's annual conference is one of its best-known activities. This year's SWE conference, held in Iowa City on November 14, 1981, focused on "Forming for Success." Open to anyone wishing to learn more about the qualities of professionalism in business and industry, the conference dealt with leadership styles, communication, time management, ethics and other related topics.

Each month, SWE members come together to hear speakers on a range of subjects of personal or technical interest—from the design and construction of broadcast towers to the preparation of effective resumes.

The local SWE chapter was chartered in 1973—in 1975 it received the society's Best New Student Section Award. The chapter now includes 75 to 80 percent of the College's upperclass women students and indications are that it will continue to grow.

Tau Beta Pi

The UI chapter of the national engineering honor society takes pride in being a working organization. In addition to recognizing juniors and seniors who have demonstrated outstanding scholarship and character, the group provides service in a number of ways, such as participating in the Engineering Open House and sponsoring review sessions to help students prepare for the crucial Engineer-in-Training exam.

Local Tau Beta Pi members feel that their most important contribution lies in organizing the annual Technology and the Spirit of Man Symposium, which brings together people from the humanities and sciences to exchange ideas on significant contemporary issues. The April 1981 symposium explored scientific and societal aspects of "Energy and Our Economy: Outlooks to the Future." Speakers were John Culver, former U.S. senator from Iowa; D. R. Martin, general manager of commercial marketing for Shell Oil Company; Mary O'Halloran, a former Department of Energy regional representative; and Jerald R. Barnard, economics professor and director of the Institute for Economic Research at the University.

Placement Office: High Demand for Engineering Graduates

Despite an economic climate of uncertainty, UI Engineering graduates are finding jobs that suit their abilities and interests. "You've learned problem-solving skills that are applicable to a vast number of situations—this makes you valuable! Think what you like to do, and why you are more able to do that than somebody else." This is the advice that Leslie Hauschildt, Placement Director, gives students who come to the Engineering Placement Office.

While continuing its main work—helping graduates find professional employment through on-campus interviews—the office has been expanding its services under Hauschildt's leadership. "A more important part of placement is to help people learn to conduct a job search for themselves," says Hauschildt, who works with students to help them develop an awareness of employment options and information resources that will serve them both in their current search for employment and at some future time if they should wish to redirect their careers.

To encourage students to develop alternative approaches to the job search process, the Placement Office offers various forms of assistance to individuals and groups. For example, it sponsors workshops in which recruiters from industry conduct simulated interviews with a number of "candidates," letting students react to and analyze different interviewing situations and styles. Students can receive individual guidance in the preparation of resumes and cover letters. And a resume book — an innovation that Hauschildt believes will be particularly helpful to graduates and companies alike— is being made available each year to potential employers.

At the same time, Hauschildt is working to enhance the effectiveness of the on-campus interview program by strengthening cooperation with the University Career Services and Placement Center, building and maintaining employer contacts, opening channels of communication for potential off-campus recruitment and encouraging UI alumni to take an active part in the recruiting process.

1980-81 in Retrospect

The annual report issued by the Placement Office in June 1981, shows that the demand for engineering graduates continues to exceed the supply. Graduating engineers still command better starting salaries than graduates in other areas, although salary increases are in many cases offset by the effects of inflation. The highest starting salaries for bachelor-level graduates were reported in the oil industry, followed by the chemical and heavy machinery industries. Chemical engineers received the most consistently high offers.

The year's placement statistics reflect Iowa's slow industrial growth, with 70 percent of graduates finding employment out of state. This trend is balanced however, by the fact that the majority of the College's graduates did remain in the Midwest. In 1980-81, the College awarded 269 degrees: 66 percent at the bachelor's level, 30 percent at the master's level and 4 percent at the doctoral level. This continues the trend of an increase in the proportion of undergraduate versus graduate degrees. The largest number of undergraduate degrees went to majors in Mechanical and Electrical Engineering, while Environmental Engineering conferred the most graduate degrees.

More students are taking advantage of on-campus interviews, partly because of the growing number of bachelor-level students using the office. The number interviewing in 1980-81—256 of the
269 students who received degrees—represented a 15 percent increase from the previous year. There was a 31 percent increase in the number of interviews, which totaled 1,771. Fall interviews increased 71 percent. The Placement Office is encouraging this trend toward earlier interviewing, because it allows students more time for research and decision making and tends to ease conflicts with other obligations.

Placement Help for Alumni
Although Engineering alumni typically don't rely on the Placement Office for assistance in changing jobs, Hauschildt reports that she regularly receives listings of positions for experienced engineers. She encourages alumni to use the office to learn about such listings if they are considering a change. “It's best to send us a resume,” says Hauschildt, “but we can work with a letter or postcard including your graduation date and degree, a synopsis of your experience and your current job objective.” This data is used to match individuals with positions that are listed.

You Can Help Students through the Career Information Network
With your experience in the engineering field and knowledge of current trends, you can help UI Engineering students get started by participating in the Career Information Network.

The Network, sponsored by the University of Iowa Alumni Association, matches alumni with students on the basis of similar career interests. Its purpose is to provide resources that will help graduating students make informed and successful career choices. The Network includes four services: Resume Review, Telephone Tips, Hawkeye Hosts and Externships.

The Resume Review program lets students send their resume to an alumnus for comments and suggestions. Through Telephone Tips, alumni can respond by phone to students' career-related questions. Hawkeye Hosts welcome recent graduates who move to a new location. Externships give students the opportunity to gain some first-hand experience by actually working for a week with an Iowa graduate.

Engineering is vital to our fast-changing world and the increasing number of students in engineering reflects the growth of the field. Make the most of your experience—share it with an Iowa student. We're sure you'll find it a worthwhile investment. For more information please check the appropriate box on the attached “What's New With You” form, or contact Jane Petersen, Career Information Network, The University of Iowa Alumni Association, Alumni Center, Iowa City, Iowa 52242 (319) 353-6275.

This issue was written by Jean Tucker, Iowa City, Iowa, free-lance writer.

What’s New With You?

The IOWA ENGINEER will be an excellent mechanism for keeping up with updated information on alumni and friends of the College. Please use the return form below to keep us abreast of 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 additional information on how I may help Iowa Engineering students through the UI Alumni Association’s Career Information Network.
Representatives John Balza (left) and Tom Smith (right) of the Hewlett-Packard Company present to Dean Robert G. Hering (center) a Color Graphics Desktop Computer System for the College of Engineering. The gift is valued at $80,000.