College of Engineering Newsletter

university of bridgeport / bridgeport, connecticut

spring 1972

COOPERATIVE EDUCATION PROGRAM discussed by Daniel J. Carnese, director of program (left), and Dean Willard P. Berggren.

New Cooperative Education Program Will Benefit Students, Employers and College

The first cooperative education program in engineering in the State of Connecticut will be offered by the College of Engineering at the University of Bridgeport for the fall 1972 semester.

Open to both commuting and resident students, the program consists of alternating semesters of full-time college study and full-time work assignments.

The work assignments will be related as closely as possible to the student's course of study and career goals. The advantages to the student are numerous, as he or she has much to gain by involvement prior to graduation in the practical applications of the academic course of study. Utilizing the summer term, the students will be alternating between work and college on a year-round schedule — graduating in five years with a bachelor's degree plus two years of valuable professional experience. Students transferring into the Junior year will be graduating in two and one-half years with one year of work experience.

Continued page six

Computer Engineering Program Starts In Fall of 1972

The College of Engineering introduces a new program aimed at meeting the needs of modern technology when students enroll for a "Computer Engineering Curriculum" in the fall semester of this year.

The program will train computer specialists with a basic engineering background who would apply their engineering training to the computer area. The program will have essentially the identical course work for the first two years as for the electrical engineering program. Specialization will occur in the last two years. A core of five courses will be required and the student will have the flexibility to take courses related to computer design or computer utilization. These courses, Dean Berggren explained, will be of value to students in other colleges and might form part of the core of new options of programs outside of the College of Engineering.

Continued page three

Management Engineering Program Produces First Graduates

The Management Engineering program, initiated by the College of Engineering in September 1970, produced its first two graduates in September 1971. They are Daniel J. Carnese of Westport and George Perez of Trumbull. Both Mr. Carnese and Mr. Perez participated in the January 1972 commencement ceremony together with the third graduate, Robert F. Gannon of Danbury. Mr. Gannon was graduated with the January 1972 class. Forty-two students are now registered in this, the fastest growing masters program at U.B.

The Management Engineering program is the first of its kind in Southern Connecticut. Directed by Professor Phylipp Dilloway, it provides a nucleus of courses designed for engineers in supervisory positions. Core courses include operations research, systems analysis and design, management of engineering, and engineering statistical analysis. The program has an individualized and interdisciplinary approach and offers electives from the fields of business and mathematics as well as engineering.

"I chose several nontechnical options," said Mr. Carnese, "because I felt I would benefit from expanding my academic and professional background in marketing, economics and psychology."

Mr. Carnese, who is currently Director of Cooperative Education at the UB College of Engineering, joined Sikorsky in 1963 as supervisor of aerodynamics and later Chief Flight Test Engineer. Previously, he was assistant chief flight test engineer with Republic Aviation Corporation, Farmingdale, N.Y. He has also worked as flight test engineer and aerodynamicist with Piasecki Helicopter Corporation, Morton, Pa. In his positions, he has planned and supervised research, development, design, and advanced methodology in aerodynamics and in the flight testing field.

Continued page four

PROGRAM GRADUATES receive congratulations from University President Thurston E. Manning (left) and program director Phylipp Dilloway (right). Graduates are (from left): George Perez, Daniel Carnese and Robert F. Gannon.

Palazotto Continues Research: Plastic Buckling of Plates

Dr. Anthony N. Palazotto, Associate Professor of Engineering Mechanics, is expanding the work started with his Ph.D. thesis by conducting research on the subject of plastic buckling of rectangular plates. Together with Lawrence Durocher, an Assistant Professor in the Mechanical Engineering department, Dr. Palazotto has prepared a number of papers related to different aspects of this subject.

Palazotto notes that sophisticated analytical procedures are essential for the efficient design of specialized lightweight structures used in aero-space and deep submergence vehicles. These structures require that a great deal of analytical consideration be given to geometric and materials stability.

The work done by Palazotto is in an area where there has been little analytical or test data available. This required a procedure wherein he had to certify theoretical work with test data at each step before going on to a more complex investigation.

Palazotto and Durocher are examining two strain hardening theories. One theory takes into account the anisotropic effects before and after the strain hardening range has been reached by the material; the other does not consider this phenomenon. The first theory has important applications in the composite material field.

The investigation of certain aspects of this work led this research team to utilize the CDC 6600, a computer with an unusually large capability. It is located at the Courant Institute of Mathematical Science in New York.

Dr. Uram Investigates Promising Ejector Nozzle

Dr. Earl M. Uram and Mr. Donald Seccombe, a Graduate Assistant in the ME Department, are investigating the flow phenomena involved in the design and performance of ejector nozzles. These devices, which use a small, high velocity primary fluid jet to entrain and move substantial amounts of a secondary fluid, are generally used for fluid pumps and recently have become of interest for thrust augmentation in V/STOL aircraft propulsion systems. Results of their analytical investigation indicate that, by properly positioning the primary jet in a "Coanda Effect" Ejector Nozzle design, substantial improvement in mass flow rate and thrust augmentation can be expected. An experimental investigation in the ME laboratory, involving a two dimensional nozzle designed so that the position of the primary wall jet can be varied relative to the secondary nozzle, is in progress to both substantiate and quantify the theoretical findings.

Dean Willard P. Berggren

Computer Engr. Program

Continued from page one

Dean Berggren has said that because the country is faced with the rapid trend toward the digitalization of information processing technology and the resultant need for graduates with strong training in computers and related fields, many college and university electrical engineering departments are revising their curricula to make it possible for their students to major in the computer field.

The name of the Electrical Engineering Department has been changed to the Department of Electrical and Computer Engineering. Two degrees are offered: a B.S. in Electrical Engineering and a B.S. in Computer Engineering.

Referring to these two degrees, Dr. Richard A. Strand, assistant dean and chairman of the Electrical Engineering department, said that elements of engineering mathematics are essential for both groups of graduates. Beside basic numerical methods, the classical analytic methods from which these arise are necessary, including calculus, linear algebra, differential equations, vector analysis, and probability. Dr. Strand further commented that during recent years the relationship between electrical engineering and computer technology has increased, with electrical engineering becoming deeply involved in a wide range of areas which border on, or are contributory to, computer technology. These areas include: integrated circuits and microelectronics; circuit design; information theory and coding techniques; switching theory; record storage and transmission of data; information retrieval; and many others. "There is also a very substantial overlap between computer engineering and that part of electrical engineering which is concerned with systems, information processing, and communication," said Dr. Strand.

Among the facilities that will be in support of the program are:

- The main computer center of the University, under the direction of Assistant Professor Henry J. Heneghan, which includes an NCR Century 200 computer equipped with time sharing terminals.
- The College of Engineering's IBM 1620 computer which has 40K of storage capacity and which is available for "hands-on" operation.
- A PDP 15 Digital Computer which is designed with characteristics which will enable students to feed information to the computer directly from laboratory instrumentation and/or other computers.
- Analog Computers which have the potential of being tied in with the PDP 15 to form hybrid installations.

Dr. Berggren Will Assume New Role: Director of Studies & Planning

Dr. Willard P. Berggren, dean of the College of Engineering since 1953, will assume the duties of Director of Studies and Planning, a new position, effective in July of this year.

Dr. Thurston E. Manning, UB President, said that Dean Berggren will assume many of the duties formerly associated with the office of research and planning which has been under the direction of Vice President Earle M. Bigsbee. Mr. Bigsbee retained the duties of that office in 1970 when he was named Vice President for Academic Affairs following the death of his predecessor, Dr. Robert A. Christie.

In his new position, Dr. Berggren will coordinate activities associated with: the work load of faculty and students, cost efficiencies in operation of the University, compiling data related to the characteristics of students, faculty, staff, and other constituent groups of the University. He will also be concerned with analysis of the quality of education and with the evaluation of financial and non-financial activities at UB. He will function as the administrative staff for the Board of Trustees committee on planning and, according to Dr. Manning, will serve UB as the agent for "review and release of proposals for extra-murally funded activities, both research and instructional, in accord with the functions of the vice presidents at UB."

Dr. Berggren received a Bachelor of Science degree in Electrical Engineering, a master's in Mechanical Engineering, and a Ph.D. from the University of California, Berkeley. Prior to his appointment as Dean of the College of Engineering at UB in 1953, he was assistant professor of physics at the University of California and associate professor of Aeronautical Engineering in the Wright-Patterson Graduate Center at Ohio State University. His background includes extensive industrial experience including: consultant to Agricultural Engineering Division of the University of California; E.S.M.W.T. supervisor, San Diego; development engineer for Aerojet Corporation, Azusa, Cal. and Oak Ridge National Laboratories. He was also chief engineer at the Rocket Lab of Ohio State University.

Dr. Berggren has been involved in a variety of scientific investigations and writings of a technical nature. Two of his publications are: "Voids in Granular Materials", and "Absorption Law for Total Radiation Measurements". He also has 16 additional publications to date. He has authored two books: *Experiments in Elementary Physics* and *Guidebook for Engineering Newcomers to the U.S.A.*

He also holds two patents: one for The Near-Constancy of Full-Power Duration for Unboosted Rocket Vehicles and another on jet propulsion.

In 1959, Dr. Berggren was named "Engineer of the Year" by the Connecticut Society of Professional Engineers. He has served as chairman of the Industry Committee of the Governor's Clean Air Task Force, as a consultant to the Regional Clean Air group formed by the Manufacturers' Association of Bridgeport, and he was a member of the Faculty Fellowship selection board of the National Science Foundation. He has also served on the Board of Directors of the ECPD for 10 years, and has held numerous other organizational posts.

Management Engineering Program

Continued from page two

A graduate of Massachusetts Institute of Technology (MIT) with a B.S. degree in aero-engineering, Mr. Carnese says he derived the most benefit from several individual in-depth studies he undertook in conjunction with the management engineering degree program. One project dealt with the threat of technical obsolescence in the construction field and with the "state of the art" of modular building construction. This included all aspects from technical problems to the social problems involved, he explains. In another study he undertook an extensive review and evaluation of currently available psychological testing instruments which are used to predict the potential performance of candidates in high-level managerial positions. "Although many psychologists have been working on this task for several decades, much remains to be done before these procedures can be considered usefully reliable for selecting high-level managers," he concluded.

The final study which Mr. Carnese undertook prior to graduation was the research and planning for a cooperative education program for engineering students at UB. This led to his present position as Director of Cooperative Education.

Mr. Carnese and his wife Gail, who is on the faculty of Norwalk Community College and a former national ski champion, have two children and reside in Westport. Mrs. Carnese is a graduate of Smith College and holds a sixth year diploma from Columbia University's Teachers College.

Mr. Perez, with an extensive technical background in aeronautical and electrical engineering, undertook the graduate program in management engineering at UB to broaden his knowledge of management techniques. "During courses in systems analysis with Dr. Couros Ghaznavi and in management of engineering with Prof. Dilloway, I wrote two major papers on the use of feed-back control systems and models of communication in management. Both involved research and study that will serve well in my future career," Mr. Perez said. Dr. Ghaznavi is Bern Dibner Professor of Electrical Engineering.

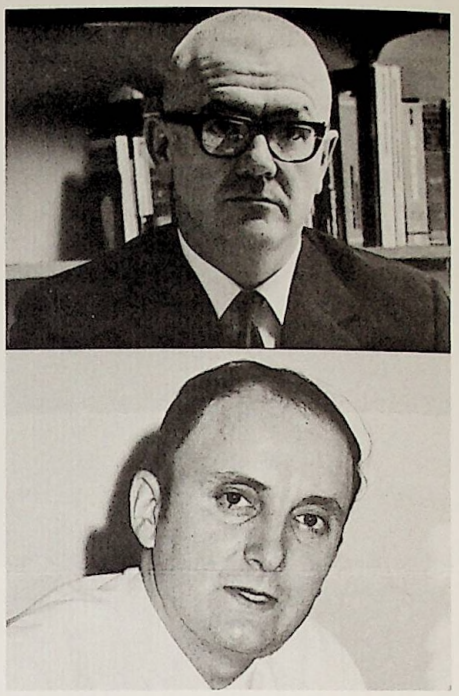
Mr. Perez, a native of Mexico City, attended the Academy of Aeronautics in New York City, earning first a technical diploma in aeronautical engineering in 1957 and then a diploma for electrical engineering in 1961. He joined Sikorsky as an aerodynamicist in 1961 and pursued a B.S. degree in Mechanical Engineering from the Bridgeport Engineering Institute where he also taught on a part-time basis.

Having been a student since the mid '50's, Mr. Perez is looking forward to spending some time with his family now that he has a master's degree in Management Engineering. He and his wife Ana have four children: Patricia, 15; George, 12; Yvette, 9; and Carlos, 9 months.

Mr. Gannon, the third Management Engineering graduate, is Assistant Head of the Avionics Branch of the Naval Plant Representative Office at Sikorsky Aircraft. In 1961, he received an Associates Degree in Electronics from Danbury State College (now Western Connecticut State College) and in 1963, a Bachelor's Degree in Physics from Fairfield University.

Mr. Gannon said that he concentrated his electives courses in the management field in order to "pave the way for future professional growth". He also said that he is looking forward to U.B. eventually establishing an engineering doctoral program. He likes the proposed concept of doing doctoral work around a practical advanced engineering or systems problem closely associated with his work rather than becoming involved in a typical, narrow doctoral thesis commonly associated with a Ph.D. program.

Mr. Gannon and his wife Patricia have two children, Robert Curtis, 7, and Patrick Michael, 4. Mrs. Gannon is majoring in English at Western Connecticut and will be graduating next year.



Dr. Joseph E. Motherway (top) and Dr. Anthony Palazotto.

Mechanical Engineers Active In Continuing Education

Dr. Joseph E. Motherway, Bullard Professor of Engineering, and Dr. Anthony Palazotto, Associate Professor of Applied Mechanics, will present a short course (one evening per week for six weeks starting May 9th) titled, "Introductory Matrix Methods in Solid Mechanics for Practicing Engineers". This is a non-credit course (with a $75 enrollment fee) specifically designed to introduce, at a practical level, modern methods of analysis in vibration and structural design. The course is open not only to engineers, but to others who are working in this area and are interested in up-dating or expanding their knowledge to include matrix methods and applications.

Drs. Palazotto and Motherway presented a seminar in March as part of the American Society of Mechanical Engineers Fairfield County Technical Seminar Series. The topic was "Computer Uses in Engineering Design". Case studies from the speakers' consulting and research experiences were discussed. Dr. Motherway presented three examples: (1) an iterative procedure in non-linear spring analysis, (2) development of an empirical formula for toroidal shell design from computer correlated experimental data, and (3) transfer matrix analysis applied to vibration design problems. Dr. Palazotto's presentations were: (1) design of three dimensional suspension roof systems, (2) use of General Electric's STRESS program in wood frame panel analysis, and (3) application of finite element and matrix techniques in solid mechanics.

Mechanical Engineering In Pressure Instrument Research

Mr. Everett Kaelber, a graduate student in Mechanical Engineering, and his advisor, Dr. Joseph Motherway, Bullard Professor and Chairman of Mechanical Engineering, are developing an empirical equation which predicts the "squirm pressure" of instrument bellows. "Squirm pressure" is that internal pressure which induces instability in the form of lateral buckling of the bellows and limits the bellows usefulness in pressure measuring instruments. Analytical means of prediction are available, but none of these have proved capable of predicting stability with a practical degree of accuracy or reliability. The method used in this study is based on techniques devised by Dr. Motherway in an earlier study of pressure response of single convolution toroidal diaphragms.

Also in the area of pressure instruments, Dr. Motherway presented a paper at the A.S.M.E. Winter Annual Meeting in Washington, D.C. last December titled, "An Optimum Design for Pressure Sensing Machined Diaphragms", and he is extending this work to machined bellows.

As a result of activities in this field, Dr. Motherway has been appointed to the A.S.M.E. Research Committee on Pressure Technology.

CONNCORD Research Grant Awarded To Dr. Palazotto

A CONNCORD research grant amounting to $1,210 has been awarded to Dr. Anthony N. Palazotto, associate professor of Engineering Mechanics, for a survey of commuter patterns of students attending institutions of higher education in the Bridgeport area. The funds shall be used to cover direct survey expenses and to compensate students employed to participate in the study.

Dr. Palazotto's study will have four main purposes:

1. To provide information related to the particular transportation problems confronting each institution under study.
2. To provide long range guidance in fitting the academic community into the complex urban transportation system within the surrounding Bridgeport area.
3. To identify the major transportation corridors being used, mode of travel, and number of riders.
4. To forecast trends in travel and estimates of future transportation needs.

Associated with Dr. Palazotto in the study will be Daniel Carnese, also on the Engineering College faculty. The study is expected to be completed in 12 months.

CONNCORD, (Connecticut Consortium for Research Development) is a program of the Higher Education Center for Urban Studies (HECUS). Funds for the program are supplied by the U.S. Department of Health, Education and Welfare and are awarded to conduct research related to a social or community problem of significance to Southwest Connecticut.

REFLECTIONS ON THE HISTORY OF THE ENGINEERING COLLEGE

This initial issue of the College of Engineering Newsletter gives us cause to reflect on the College of Engineering and on its history. With this in mind, I have put together a brief history as a reminder of the progress we have made during our rather brief existence.

The University of Bridgeport, chartered in 1947, grew out of the Junior College of Connecticut which dates from 1927. The new University sought advice from the Manufacturers' Association of Bridgeport, through an Engineering Advisory Committee which is still active and productive. The initial advice of this committee of industrial executives was to establish engineering programs to permit B.S. degrees to be earned by day or by evening study. The Division of Engineering created in 1948 was a part of the Arts & Sciences College until 1956, when the College of Engineering was formed.

In June and September, 1950, eighteen B.S. degrees were awarded in Mechanical Engineering and four in Industrial Engineering. An industrial design program, related to engineering but more concerned with style and function than with analytical design, was established during the same period. This curriculum, administered by the Engineering Division, produced its first graduates in 1953. Industrial Design continues as a department of the engineering college, and it has brought favorable attention to the University of Bridgeport in many parts of the United States and in Europe.

The Industrial Engineering program was soon made more analytical and was directed more toward materials and processes. This program was renamed Manufacturing Engineering in 1957, and today the University of Bridgeport is one of only four institutions in the U.S. offering the B.S. degree in this field. Manufacturers have long developed their manufacturing engineers from designers, from production supervisors, etc. In this age of sophisticated processes, there is a need and a challenge for college graduates with strong background in the manufacturing field. The Connecticut Research Commission has supported highly significant experimental work in this department on cutting and forming processes.

The Mechanical Engineering program has sought a balance between applied mechanics and thermal systems. This field was the first in which the Master of Science degree was conferred by the University of Bridgeport engineering college, 1964. The Mechanical Engineering department now has ten members, including two holding supported professorships — the Bullard and the Sikorsky chairs. Members of this department have received several National Science Foundation grants and one grant from the Connecticut Research Commission.

Electrical engineering was introduced later, graduating its first B.S. class in 1960 and conferring its first M. S. in 1970. This department also has ten members, including a Dibner Professor of Electrical Engineering. It has pioneered the "modeling" approach to systems instruction, utilizing analog modules first developed for control components. An automatic controls laboratory is being equipped with the aid of a matching grant from the National Science Foundation. Effective Fall 1972, this department is renamed Electrical and Computer Engineering, offering these two options for the B. S. degree. An article appearing elsewhere in this newsletter describes the new offering in Computer Engineering.

The Engineers' Council for Professional Development has accredited the undergraduate curricula in mechanical (1962) and electrical engineering (1969). This recognition represents professional approval of the stature of the faculty and of the adequacy of these programs and facilities. In the field of manufacturing engineering, U.B. representatives have taken a part in the current development of accreditation criteria. Our industrial design program is listed as approved by the cognizant professional group in that field; indeed U.B. is a national leader in this field.

Continued page six

Reflections On College

Continued from page five

A 1970 addition to the U.B. Engineering program was a Master of Science curriculum in Management Engineering. It is designed for graduates holding bachelor's degrees in engineering or science who wish to study the application of quantitative methods to management problems of resource allocation. These courses, plus other broadening electives, also equip the graduate to handle a wider range of economic and behavioral problems.

After several months of detailed study and evaluation, the College will start an optional cooperative education program this Fall. This action is expected to have far-reaching and profound effects. "CO-OP" will assist the Engineering College to move forward through the seventies with its good programs enriched by cooperative work experiences, while the students earn significant wages to help finance their education. The participating employers will benefit from a good source of labor and more effective recruitment of selected graduates.

The faculty has recently considered offering a Master's program in Materials Science. They have also considered an interdisciplinary program wherein a limited number of qualified candidates would earn a Doctor of Engineering degree utilizing an appropriate and qualified engineering or systems task to be supported by and related to their employers' needs. Although neither program could be approved at this time, both are still very possible at some future date.

It has been a pleasure to have been with Engineering since 1953, when it was a Division within the College of Arts and Sciences. As I embark on a new assignment in the University, I wish the Engineering faculty members continued success in fulfilling their professional commitments to the community, to the University, and to themselves.

Willard P. Berggren

Cooperative Education Program

Continued from page one

Industry in the Bridgeport area has indicated willingness to cooperate with the University of Bridgeport to provide a meaningful and rewarding experience for students accepted into this program. The students are paid for their services by the cooperating employers. While financial reasons are secondary to the educational benefits to be derived from the job, the earning ability is important to most people and is often the enabling device to make such an education possible.

The cooperative education program is open to all students demonstrating good academic ability. Participants are recommended by the faculty advisors on the basis of the students' records during the first two terms in college. Similarly, transfer students are recommended on the basis of their first term in attendance at U.B.

The college cannot guarantee that a student will be accepted into the cooperative option, but the Engineering College believes that its present association with local industry will provide worthwhile assignments for the eligible students who desire to participate.

Daniel J. Carnese, Director of Cooperative Education, says that "cooperative education is a proven, successful educational system in which all the participants benefit — the student, the employer, and the college." He points out that the financial benefits to the students are the most obvious but that it is also a better overall educational experience for most students.

Those persons interested in the cooperative program should write or phone the Engineering Admissions Counselor, Professor Lawrence Durocher, or contact the Admissions Office.

Recent Technical Publications Of The Engineering Faculty

DUROCHER, LAWRENCE L.

1. (with A. N. Palazotto) "Elastic-Plastic Buckling of Anisotropic Plates", Report to the National Science Foundation, 1971.
2. (with A. N. Palazotto) Discussion of "A Distortion Energy Failure Theory for Orthotropic Materials", by G. W. Forman, to appear in Journal of Engineering for Industry, 1972, ASME.

MOTHERWAY, JOSEPH E.

1. "An Optimum Design for Pressure Sensing Machined Diaphragms", Paper No. 71-WA/PT-1 ASME National Meeting November, 1971 to appear in Journal of Basic Engineering, 1972.

PALAZOTTO, ANTHONY N.

1. (with M. Stankosky and G. Uthenwoldt — graduate students) "Partially Loaded Folded Plates" ASCE-Structural Div., accepted for presentation at the San Francisco 1973, Conference.
2. (with D. Seccombe — graduate student) "The Use of Analytical Stress-Strain Curves in Metal Forming", Wire Journal, accepted for publication, 1972; also accepted for presentation at The Chicago Wire Assoc. Convention, 1972.
3. Discussion of "Inelastic Buckling of Axisymmetric Shells", by J. C. Hayes and L. H. N. Lee, Journal of Engineering Mechanics ASCE, 10/71.
4. Discussion of "Inelastic Flange Buckling of Curved Plate Girders", by C. G. Culver and G. Nasir, Journal of Str. ASCE, 1/72.
5. (with N. F. Morris) "Comparison of the Incremental Plastic Buckling and Elastic Buckling Theories", presented at the Engineering Mechanics Div. ASCE Specialty Conference, University of Illinois, January, 1971.
6. (with L. L. Durocher) see above

Continued page eight

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Managing Editor	Dan Carnese
Editor	David Bannon
Graphic Artist	Ruth Krasenics
Photographers	Mathias Hettinger
	John Tasker

PROGRAM DIRECTOR Charles O. Kishibay (second from left) and Assistant Director Richard L. Price (second from right) talk with high school students participating in UB-EDY program.

Sloan Foundation Awards $224,000 To Aid Disadvantaged Students

President Thurston E. Manning announced that the Alfred P. Sloan Foundation of New York City awarded $224,000 to the University of Bridgeport and the College of Engineering in support of a nearly half-million dollar program aimed at "inspiring disadvantaged urban youth to seek careers in engineering".

The program was developed in the College of Engineering and is being coordinated by Prof. Charles O. Kishibay, associate professor of mechanical engineering, who has been appointed director of the program to be known as UB-EDY. The latter three initials represent "Engineering for Disadvantaged Youth". Dr. Richard L. Price of New Haven is associate director.

About one-third of the program's cost will be paid by the University of Bridgeport, according to Dr. Manning. He said the grant from the Sloan Foundation "is significant in terms of acceptance and recognition of programs being developed at the University of Bridgeport which are finding support from major national foundations." The foundation was established in 1934 by the late Alfred P. Sloan Jr., former chairman of the board of the General Motors Corporation. The foundation, one of the largest philanthropic foundations in the United States, has interests in science, engineering, technology, education, management, and related areas of societal concern.

The program was initiated at UB during the past summer, at which time a remedial program was conducted to help prepare selected high school graduates for entry into the College of Engineering. The EDY project is long-range, and will involve an anticipated group of 30 area youths with each having the opportunity to attend UB's College of Engineering.

Following successful completion of the freshman year, the students will be enrolled in the cooperative program which will enable them to earn sufficient money to pay their tuition during the upper years of college. Completion of degree requirements is expected within five years.

During the summer of 1971, Bridgeport high school graduates were selected on the basis of academic achievement and potential in engineering for participation in the program. Selection was based, in part, on recommendations from high school advisors and area social service organizations. The recruitment of the students for the program included discussions with many of the associations serving minority groups and the disadvantaged of the community, including officials of: the Model Cities Program, ABCD, Neighborhood Youth Corps, Spanish Coalition, Urban Coalition, churches, the UF "Upward Bound" program and other similar organizations. Thirty-eight applicants were interviewed prior to selection of the present participants.

Four students are currently participating in the program and are now attending the College of Engineering. The students took intensive summer remedial courses in algebra, geometry, trigonometry and physics, along with work on reading skills and comprehension. The summer segment of the EDY program was the first phase in what will be a long-range activity to help select and train minority members for a field which is very demanding, but which also offers great career potential.

As of this spring term, Professor Kishibay reported that "the four students who matriculated in the fall of 1971 have attended class regularly. Three of the four students are doing exceptionally well in their studies with Q.P.R.'s of 2.3 to 3.1. All students are continuing with the spring semester coursework and thus far the scholastic problems seem to be more in the area of humanities."

Dr. Berggren, Dean of Engineering, said the EDY program is "significant to the University of Bridgeport because it establishes the validity of UB's approach to providing urban residents with learning opportunities attuned to needs of society." Dean Berggren noted that despite current concern over employment opportunities for engineers, a result of the economic slowdown, the government's reduction in the military preparedness expenditures, and the completion of significant phases of the Space Program, the long-and-intermediate-range job opportunities for engineers are "excellent". The opportunities for members of minorities are further enhanced, Dr. Berggren said, as a result of a conscious effort on the part of employers and the Federal Government to provide new opportunities in basic career fields, including engineering. He noted that in the most recent annual statistics on engineering degrees, only 750 were black. Furthermore, he said, the National Engineering Societies have set a goal to bring the underprivileged into engineering.

Prof. Kishibay said that currently there is a special effort being made to inform eligible Bridgeport area high school students of this new program at UB, in the hope that members of minority groups will properly prepare themselves for qualification by taking basic mathematics courses: algebra, geometry and trigonometry. In addition, students interested in the program should have an aptitude for a science such as chemistry or physics. Professor Kishibay reports, "Interviews are now being conducted with eleventh and twelfth grade students from the area high schools as well as with students interested in continuing their education beyond that of the two-year curricula offered in the technical or community colleges. A total of sixty-eight men have been or are in the process of being interviewed. Thirty-eight of these have potential for the upcoming fall semester. The other thirty are basically juniors or veterans who are preparing themselves for the fall of 1973."

Publications

Continued from page six

POIRIER, DAVID R.

1. (with J. T. Berry, University of Vermont) "Some Aspects of the Teaching of Forming and Solidification Processes", Int. Engr. Conf. Soc. Manf. Engr., Philadelphia, May, 1971.

SMITH, WILLIAM R. III

1. "P-N Junction Capacitance", Int. Journal of Electronics, Vol. 31, pp. 201-215.

TILLMAN, EDWARD S.

1. (with R. E. Engdahl) "A Compact Supercritical Steam Engine for Automotive Power", presented at The 1971 IECEC, Boston, Mass.
2. (with J. T. Berry, University of Vermont) "A Study of the Influence of Thermal Contact Resistance on the Solidification Rate of Long Freezing Alloys", presented at the 75th Casting Congress.
3. "An Analytical Study of the Performance of a Venturi Scrubber", 64th APCA Congress.
4. "A Compact Hydrogen Generator for Fuel Cells", accepted for presentation at the 25th Power Sources Conference.

URAM, EARL M.

1. "Environmental Effects of Waste Heat", University of Bridgeport Quarterly, Vol. V., No. 1, 1971.
2. "Air Pollution", (Panel Member Presentation) URIC Report No. 71-19, September, 1971, Univ. Res. Inst. of Conn.

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Prof. Ghaznavi Co-Authors Electrical Engineering Text

Dr. Couros Ghaznavi, Dibner Professor of Electrical Engineering, has co-authored a book, "Electronic Circuit Analysis", which will be used for junior and senior engineering students at UB and elsewhere as a text in electrical engineering.

The Macmillan Company book was co-authored by Arthur H. Seidman, a professor at Pratt Institute. As a text, the book will be used to explain and unify the subject matter of electronics. "Clarity of presentation has been a key objective," stated Dr. Ghaznavi. He further stated that, wherever possible, simple explanations have replaced long and tedious calculations and that many numerical examples illustrating the application of principles and concepts are worked out in each chapter.

Dr. Ghaznavi noted that the text features chapters on integrated circuits and computer-aided analysis. He also stated that the generalized admittance matrix and the rotation of networks are included. The scattering parameters are also introduced. The feedback amplifier is viewed as an example of a general feedback system, and the frequency-response and root-locus methods are used for checking stability.

Dr. Ghaznavi said that although basic physical concepts are summarized, physics is omitted from the text because the authors feel that this subject should be taken as a separate course, concurrently with Electronic Circuits.

At the University, Dr. Ghaznavi teaches on the graduate and undergraduate levels in the areas of control systems, electronic circuits, active network theory, and biomedical systems. In June of 1969, he was awarded a matching grant from the National Science Foundation to furnish a modern systems laboratory where students are engaged in challenging projects such as electromyography and blood flow.

Prior to Dr. Ghaznavi's joining the UB faculty three years ago, he was a professor of electrical engineering at Pratt Institute in Brooklyn, N.Y., teaching there for 10 years on the undergraduate and graduate levels in electronics, control theory, transient analysis and active networks. He was also responsible for developing a modern control laboratory under state and federal grants.

Dr. Ghaznavi has made an application for two patents dealing with electronic relays and power supply reference. He is a member of the ASEE, the IEEE, and is listed in "Who's Who in America".