



# GENERAL ENGINEERING NEWSLETTER

Department of General Engineering, University of Illinois at Urbana-Champaign

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FALL 1976

## ALUMNI HONORED



GEORGE S. TREES



ARTHUR G. DIXON

Mr. GEORGE S. TREES, a General Engineer of the class of 1937, was awarded a 1976 Gamma Epsilon Distinguished Alumni Award for his visionary guidance in applying and adapting scientific technology to the goals and needs of modern man, from the control of waste to the conquest of space.

A native of Chicago, Mr. Trees graduated cum laude from Amherst College in 1937 with a B.A. degree and received a B.S. degree in General Engineering from the University of Illinois in 1939. He joined Chicago Bridge & Iron Company in 1939 as a design engineer, quickly moving on to new assignments in field construction and manufacturing.

World War II produced his first really big assignment, i.e., helping build a shipyard from scratch at Seneca, Illinois, and then taking charge of hull construction for the LSTs desperately needed by the Navy. After the war, he switched to sales and was promoted to district sales manager, then to manager of C.B. & I.'s Central Sales region with district offices in Chicago, Cleveland, Detroit and Kansas City. He was elected a director of the Company in 1954 and a vice president six years later.

In 1963 he was assigned responsibility for a new Special Products Department, and to oversee the development of challenging new product lines and the complicated systems required to make them work. It was under his jurisdiction that C.B. & I. designed and built the first space simulation chamber to be used by U.S. astronauts as they prepared for America's first manned expeditions into outer space. Later, as vice president in charge of the Company's Process Group, he led a concentrated effort to adapt C.B. & I.'s broad-based engineering know-how to the developing problems of air and water pollution.

Under his supervision, fluid bed reactors for the pollution-free destruction of industrial wastes became a commercial reality, and C.B. & I. tackled some of the country's largest turnkey waste treatment projects. The latter included a multimillion dollar waste treatment system for a steel mill near Cleveland that covered a major water recycling system.

Mr. ARTHUR G. DIXON of the class of 1924 was named recipient of a Gamma Epsilon Distinguished Alumni Award for 1976 in recognition of his contribution to the administration of engineering technology in industry.

A native of East Saint Louis, Mr. Dixon graduated from East Saint Louis High School at the age of 17. Immediately following high school he worked in some of the industrial plants of the area. Upon the United States' entry into World War I, Mr. Dixon enlisted in the Marines and experienced extensive combat service in France and occupation duty in Germany.

In 1920 he enrolled in the College of Engineering here at the university and received his engineering degree in 1924. The first year after college he worked as an Assistant Plant Engineer in Chicago. This was followed by one year as a Research Assistant for the University of Illinois' College of Engineering. Then in May, 1926, Mr. Dixon joined the Modine Manufacturing Company of Racine, Wisconsin, as Engineer and Assistant Manager of the Heating and Air Conditioning Division. From this position he was promoted to Sales Manager of the Division, and progressively to Corporate Secretary, Engineering Vice President, Executive Vice President, President, Board Vice Chairman, Board Chairman and, as of July, 1973, Director Emeritus and member of the Board's Pension Trust Investment Committee.

Upon retirement in 1963 from the Presidency and active service with Modine, except as a member of its Board of Directors, Mr. Dixon became associated with Carthage College as "Assistant to the President for Foundation Relations." This association continued until 1970 and consisted primarily of soliciting funds for the college. Mr. Dixon derived great personal satisfaction from his connection with Carthage College and considers it to have been an irreplaceable association.

Mr. Dixon also found time to serve as an officer or member of the board of non-professional organizations such as the local Chamber of Commerce, Boy Scouts of America, YMCA, Racine Country Club and the like. Currently, he is a member of the Masons, American Legion, Rotary Club of Racine, Racine YMCA and Racine Country Club.

To meet the need for more instructors ten graduate students have been appointed to the General Engineering faculty as teaching assistants. They are B.M. BENIK, W.S. BENNETT, J.W. BURKE, D.D. BURN, M.J. CARDONI, P.C. HENDRICKSON, N.M. KARAYANAKIS, P.C. LE BLOND, T.L. ROBERTSON and J.B. VASEN.



EDWIN C. McCLINTOCK

### PROFESSOR McCLINTOCK RETIRES

Professor EDWIN C. McCLINTOCK retired from the university last summer. He is, however, still busy, working as actively and vigorously as ever with his favorite people — students, especially those from engineering and business administration, and research-oriented faculty members.

Professor McClintock came to the University of Illinois in 1955 as Director of Publications and Technical Information for the College of Engineering. In this position he was responsible for the editing and production of the reports and bulletins of the Engineering Experiment Station. On the side he served as Editor of the *Journal of Engineering Education* and member of the Board of the American Society for Engineering Education.

In addition, Ed insisted upon maintaining direct contact with students and trying to improve their competency of expression, oral and written, at all levels within the College. Cooperating with the English Department in the College of Liberal Arts and Sciences (LAS), he set up prototypes of technical rhetoric courses for freshmen and sophomores and courses in industrial report writing for juniors, seniors and graduate students. G.E. 304, Professional Expression, and 393S developed from these prototypes.

After a time Ed asked to be relieved of his administrative responsibilities and allowed to concentrate more time and energy on his first love — working directly with students and faculty on presentation problems. The students recognized his efforts in their behalf by electing him Honorary Knight of St. Pat in 1962.

In recent years he has served increasingly as writer-and-advisor-in-residence for humanities activities in engineering. This enabled him to interpret applied science and technology to students in liberal arts and other fields while representing the liberal and fine arts to engineers. He hopes that in this way he helped to close the alleged

communications gap between disciplines and in the development of a mutual understanding, even of conflicting points of view.

In academic research Ed emphasized the history of technology generally, and the contributions of Thomas Jefferson and other brilliant American dilettantes of the Colonial-Federal periods. On the practical side, he served as director of research and product diversification for a number of small companies, guiding their efforts until they could develop their own permanent research staffs. Among the fields investigated were materials handling and flow, fluid movement in mixing equipment, jet flow, and problems in cotton processing.

Born in the mountains south of Monterey, California, Professor McClintock was brought up on the East Coast and in Washington, D.C. Here he gained experience in Congressional offices and as a reporter-trainee for the *Washington Post*. He was editor-in-chief of both his high school newspaper and his college magazine.

A scholarship student, he earned his way through the University of Virginia, primarily as an undergraduate assistant and instructor in English, debate, and engineering humanities. While there, Ed was elected to Phi Beta Kappa and the Raven Society and awarded various other honors for his scholarship. He received his B.A. in Liberal Arts in 1936.

His graduate and advanced studies were in social theory — particularly human-factor and sensory problems. While taking graduate work Ed served jointly as an instructor in speech and debate coach for LAS and as an instructor in English and humanities for the College of Engineering.

Ed married Elizabeth Kepner in 1939. They have two sons: Richard C., assistant professor of classics in Hampden-Sidney College; and Robert W., graduate student in technical education and nationally certified foreign-car mechanic.

With the onset of World War II Ed volunteered and qualified for a commission in the Navy. Part of his service was spent as an instructor in the V-12 program. Since the war he has advanced through the academic ranks to that of professor.

Ed hopes to continue his interests in career guidance for technically-minded students, and in the human-factor concerns of consumer protection. He plans to sponsor and guide specific water-related investigations to protect and enhance agricultural and natural resource productivity and energy conservation.

### CORRECTION

Under the "In Memoriam" column in the spring *Newsletter* the death of ELWYN FRANK HENNING, '62, was mentioned as occurring in August, 1974. That is not true. Bud Henning is very much alive and employed as a Systems Analyst for Tri/Valley Growers in Modesto, California. We regret the error and hope it caused no inconvenience.



MARY R. JANKOUSKY



GEORGE J. CHRIST

### INGERSOLL-RAND AWARDS

Last spring the Ingersoll-Rand Corporation initiated the I-R Award Program with the Department of General Engineering and the Mechanical Engineering Department. Under this program four awards of \$500 each will be given, two in each department. Where feasible, one of the four awards will be granted to a female or a minority student.

All recipients are to be in their junior year and to have chosen Marketing as their secondary field. These awards will be based on academic achievement, leadership qualities, professional promise, career objectives and need.

The two General Engineering students receiving the awards for 1976-1977 are MARY R. JANKOUSKY of Benton and GEORGE J. CHRIST III from Northbrook. Mary is a James Scholar who has participated in intramural football and volleyball, been a member of the Illinois Society of General Engineering, and served as freshman and sophomore manager of Star Course, treasurer of her dormitory floor and member of the Registration Advisory Committee. Her academic record has been of such quality that she has been elected to Tau Beta Pi and to Gamma Epsilon. She is treasurer of the latter organization this year. Although Mary's parents have financed most of her college education, she has met as many of her expenses as possible, working part-time during the school year and full-time in the summer.

George has been a member of the Illinois Society of General Engineers for three years. In addition, he has been actively involved in organized frisbee, serving as President of the Campus Frisbee Club in his junior year. Last year George participated in two off-campus frisbee tournaments, one in New Jersey and the other in Michigan. With the aid of several small scholarships he has paid all of his educational expenses at the university. In 1974-1975 George worked for his meals. Last year he not only worked for his meals but held a factory job which required 16 hours a week of his time. In spite of all these extra demands upon his time, George has maintained an excellent academic average and will complete requirements for his degree in four years.

Mr. RON ARIANA of Lee-Norse Company, division of Ingersoll-Rand Corporation, presented the awards to Mary and George at the luncheon meeting of the Fifth Design Symposium of the Department of General Engineering on May 13.

### AWARDS DINNER

The annual awards dinner on April 22, sponsored jointly by Gamma Epsilon and the Department was a festive occasion honoring students and faculty.

The Bernt O. Larson Award for 1975 was presented to the design team of ALAN R. BELAIR, '75, Hickory Hills, LARRY A. MUNSON, '75, of Donovan and JAMES W. GAINES, '75, from Hollywood, Florida, for the excellence of their design of an "Improved Holding System for Deep-Drawing" under the guidance of G.E. Professor E.I. ODELL. Each team member received a check for \$50 and a certificate. Unfortunately, only Larry was able to be present to receive the award.

The group was reminded that last fall Lincoln Arc Welding Foundation awarded fourth place in the structural division of its 1975 competition to the design team of PERRY C. HENDRICKSON, '75, of Joliet, DAVID E. OLSON, '75, Oak Lawn, and ROBERT M. BURNS, '75, also from Oak Lawn. Their project, "Differential Settlement Compensating Pipe Anchor," was sponsored by Sargent and Lundy, Engineers, of Chicago. Professors MORRIS SCHEINMAN and THOMAS F. CONRY were the G.E. faculty advisors. Perry Hendrickson represented the team at the dinner.

JON H. HENDERSON, '76, Olympia Fields, was named "the outstanding scholar in General Engineering" for the Edward S. Fraser Award. Jon has participated in intramural basketball and football. He is a member of the Illinois Society of General Engineers (I.S.G.E.) and Tau Beta Pi. In 1975 Jon received the Randolph P. Hoelscher Award. He has worked as a junior engineer for Woodward Governor Company and, at different times, as research assistant and teaching assistant in the Department of General Engineering. On the side Jon has tutored in Mathematics and Physics and taken guitar lessons.

BRUCE R. BARTHOLOMEW, '76, Momence, received the H.L. Marcus-L.B. Phillips Award in recognition of his participation in student activities. He was active in intramural golf, softball, soccer, bowling and football. Bruce has been a member of I.S.G.E. for four years, serving as secretary in 1975; American Society of Mechanical Engineers; University of Illinois Pre-Law Club; Gamma Epsilon for five semesters, serving as treasurer in 1975-1976. In the spring, 1974, Bruce was initiated into Sigma Iota Lambda, pre-law honorary, and in the fall of 1975 into Tau Beta Pi. The spring of 1974 he was president of his residence hall and a member of the Residence Hall Legislature. Bruce also found time to serve on the General Engineering Open House Committee for two years, 1973-1974 and 1974-1975.

The Randolph P. Hoelscher Award was presented to CATHERINE LENTINE STRUSS (Mrs. S.R.), '76, Arlington Heights, in recognition of her scholarship, leadership promise, activities and cultural development. She played in the Department student-faculty volleyball tournament two years, served as Floor Fire Marshall and T-shirt Chairman in her dormitory and helped with the General Engineering exhibits for Engineering Open House in 1975. Catherine has been a member of Gamma Epsilon for two years, serving as president, 1975-1976, is a member of I.S.G.E. and of Tau Beta Pi. She was active on the College of Engineering Awards Committee and the General Engineering Awards Committee for the faculty award. As though this was not enough, Catherine assisted in a technical drawing course at Urbana Junior High School and proctored an introductory, self-paced environmental engineering course under Dr. JON C. LIEBMAN of the Civil Engineering Department, in each case, for two semesters.

Honorary membership in Gamma Epsilon was presented to Professors ROBERT P. BORRI and ROBERT A. JEWETT, those two retiring G.E. professors.

### SENIOR DESIGN PROJECTS NEEDED

The need for projects to use in our project design course is continuous. The larger graduating classes that we have been encountering of late require that we have from 15-25 sponsored projects per year. Those G.E. graduates who are in positions in which they might be able to help us secure projects are urged to do so. The following is a description of the course and how the projects are handled.

The project design course is required of all seniors in General Engineering. It is the capstone course of their undergraduate program in which we try to bring together the seemingly diverse subjects of their four years of study and focus them through the vehicle of a project design.

The project design activity has been going on for a number of years and has been quite successful from both the student's standpoint, the educational viewpoint, and the interests of the participating companies. The following items need to be considered.

1. We have from three to four students working on each project. These students would be seniors who would be graduating following the semester they are working on the project.
2. A faculty member supervises the students in order to act as a resource person, to help insure that the project progresses on a reasonable time schedule and to give advice and direction as needed.
3. The cost of the project to the participating company is between \$1,000 and \$2,000 and covers student travel expenses, secretarial costs, costs of models (if needed), computer time (if any), costs incurred in conducting our yearly design symposium which is

held in May each year, and publishing the annual design brochure. The costs of the project are tax deductible as they are a contribution to the University of Illinois. Checks would be made out to the University of Illinois, Department of General Engineering.

4. There also needs to be an engineer at the participating company to act as a resource and contact person who is knowledgeable of the problem and willing to devote his time to the project when necessary.
5. We feel the benefits are at least fourfold.
  - a. Projects further the educational development of the students and help them to bridge the gap between textbook problems and real world problems.
  - b. The company involved receives a concentrated effort of several "new" engineers on a project.
  - c. The exposure the company receives has often served as an excellent recruiting device with not only the students working on the project, but also others in the course. (The companies that have been participating typically do hire several of our graduates each year.)
  - d. The companies receive exposure to other companies particularly at the design symposium where typically 30 companies will be represented.

The project, in order to present it before the class, needs to be "boiled down" to a short (1-page) description of what the problem is basically, and what would constitute a solution.

The basic time schedule is for the students to visit the company facilities during the second week of the semester, delineate the boundary conditions of the problem, and to become acquainted with the organization's operation and problems. During the course of the semester, additional visits might be necessary depending upon the problem and the nature of the work involved. The students would be expected to make an oral final report to the participating company and three copies of the final report are forwarded to the company following its completion.

### REDUCTION OF SOLDER SHORTS ON A WAVESOLDERING MACHINE

Project Team: Dennis S. Bert, David C. Boyer, Gregory L. Ives, E. Reno Maurer/Spring 1976

Sponsor: Micro Switch Division of Honeywell, Inc., Freeport, Illinois

Advisors: L. Daniel Metz, General Engineering, and Roland L. Ruhl, Adjunct Advisor

Micro Switch uses a wavesoldering machine to greatly decrease the soldering time on their production printed circuit (PC) keyboards. The wavesoldering machine conveys a printed circuit board through a continuously re-

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RODNEY D. HUGELMAN



WILLIAM GEORGE BEAZLEY

This fall Dr. RODNEY D. HUGELMAN came from industry to join the faculty as an Assistant Professor of General Engineering.

Dr. Hugelman entered Oregon State University as the first Weyerhaeuser Scholar and received his B.S. in 1956 in Mechanical Engineering with the Aero option. After a brief stint at Rocketdyne as a Junior Engineer in design of lox pumps and ducting he returned to Oregon State as a Shell Oil Company fellow and graduated in 1959 with a Master's Degree in Mechanical Engineering-Aero.

Following a period as Aerodynamicist with Convair San Diego in the Jet Transport Design group, Rodney was called to active duty with the USAF. A graduate of the USAF Management School, he served as an engineering/science officer for two years before the USAF sent him to Oklahoma State University in 1964 for a Ph.D. in Engineering. The subsequent five years were spent at the Aerospace Research Labs in Dayton, Ohio. There Dr. Hugelman engaged in Magneto-hydrodynamic research and pursued a continuing interest in boundary layer flows, vortex phenomena, jet mixing and aircraft design.

In 1968 he left the Air Force and moved to North Dakota where he taught in Mechanical Engineering at North Dakota State University. While at North Dakota State, Dr. Hugelman received four outstanding faculty advisor awards from AIAA. His students received firsts in AIAA paper presentations and subsequently were selected by the society to represent the AIAA student programs at the International Aerospace Conference in Houston in 1970. This was the first time a school was so honored and briefings with the U.S. Astronauts and Russian Cosmonauts were indeed high points. During this same period, Dr. Hugelman's students received three Bendix Awards for their design presentations.

After four years at North Dakota Rodney left for industry, moving to Rockford, Illinois, in 1972. As an executive consultant for research and product development with General Progress Corporation, he designed a number

of new products for industry. Perhaps the most ambitious of these was the design of a fluidic robot. Easily programmed and low in cost, this patented design proved successful in many plant applications.

Rodney then accepted a position as Director of Engineering with Warren Industries, also in Rockford, where he was responsible for the design and development of a line of machine tools for the fastener industry. Additionally, a new line of fluidic control systems was designed to diversify the product line.

Flying has always been an important part of Dr. Hugelman's life and he has a commercial license with instrument rating. In this connection he designed, built and installed his own autopilot system in his airplane. A Supplemental Type Certificate was granted by the Federal Aviation Agency but to date no commercial plans have been made. A low cost pneumatic angle of attack indicator was designed which Dr. Hugelman hopes to continue to pursue now that preliminary flight tests are completed.

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Mr. WILLIAM GEORGE BEAZLEY joined the faculty as a Lecturer in General Engineering in 1976.

Mr. Beazley received his B.S. in Mechanical Engineering with a second major in Psychology from the University of Tulsa in May, 1972. His part-time and summer work while in Tulsa included plant lubrication planning and conveyor, dynamometer, and pressure regulator work. As an undergraduate he received a research grant to study the feasibility of turbine-powered fluid pressure intensifiers.

In September, 1972, he entered the graduate school of the University of Texas where he was awarded an M.S. in May, 1974. While there Bill taught Machine Element Design and Design Project courses and developed Element Design study units based on Interactive Graphics and criterion-based units applicable to arbitrary design projects. He investigated the effect of different graphical formats on man-machine communication in a design task and is currently interested in the dynamics of mechanically coupled open kinematic chains.

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#### I.S.G.E. ACTIVITIES

Again, the Illinois Society of General Engineers is beginning the year with a bang. After last year's activities, such as the volleyball tournament, the graduate-degree lecture and the spring picnic, all of us are looking forward to another year of activities. Plans include the annual G.E. Faculty - I.S.G.E. challenge bowling tournament, a speaker on the subject of Professional Engineering and a Christmas party. Look for signs in the Transportation Building for upcoming events!

## FACULTY NOTES FOR ALUMNI NEWSLETTER

Professor JERRY S. DOBROVOLNY was elected as the Central Region representative on the Nominating Committee for the National Society of Professional Engineers. In addition to this he has also been renamed as a Director for NSPE from the Illinois Society of Professional Engineers.

During the past year he continued in his role as an evaluator of various educational programs for the North Central Accrediting Association as well as for the Engineers' Council for Professional Development. He has been called on to be Chairman of various teams as well as serving on other teams looking at a wide range of schools from small junior colleges to large multi-university organizations.

Around the campus, his term as Secretary of the local chapter of the Society of Sigma Xi continues until September, 1977. Last year he served as Chairman of the University Senate Committee on Faculty Benefits. He has been asked to chair this Committee again for the coming year.

At the close of the spring semester Dr. WAYNE DAVIS packed "Old Rusty" and embarked on his first journey west of the muddy Mississippi. His destination was Richland, Washington, where he had received a NORCUS faculty fellowship through ERDA to do research for Boeing Computer Services. The purpose of this research was to develop a management information system to expedite the production of a computer algorithm for the cost estimation and scheduling of a construction project. The weekends allowed for considerable sight-seeing which included backpacking at White Pass and touring Mt. Rainier National Park and the Olympic Peninsula. Dr. Davis spent the evenings furthering his own research. This led to co-authoring with Dr. L. Daniel Metz a research proposal and a paper on the modeling of the atmospheric dispersion of particulate matter. Dr. Davis also developed a new model for studying the information flow and decision-making properties of resource allocating echelons. A research proposal for further development is in preparation. With the close of summer, Dr. Davis returned to the university to resume his teaching duties.

During the summer, Dr. L. DANIEL METZ conducted research in two areas. He and Dr. W.J. Davis developed a new model for the study of particulate effluent from point and area pollution sources and co-authored a paper describing it. This model was an outgrowth of a G.E. 242 project proposed by Dr. Davis last semester. The paper is unique in that it is among the first rigorous attempts at describing effluent material which is not gaseous. In addition, Dr. Metz began working on a proposal involving mathematical analysis techniques useful for modeling high order systems as second order systems. This is quite a common problem in systems engineering

(an area in which Dr. Metz teaches here at Illinois in G.E. 222), and one which has not been properly quantified as yet. He also reports that a former G.E. staff member, Dr. Roland L. Ruhl of Freeport, Illinois, and he have been collaborating on a technical paper. In spite of all this professional activity, Dr. Metz was able to squeeze in a few games of handball and to do some driveway concrete work with the help of some of his colleagues from the university.

Professor MICHAEL H. PLECK was recently appointed to the editorial board of a task group of the American National Standards Institute Subcommittee Y.14.26, on which he has served since 1971. The Subcommittee, entitled "Computer Aided Preparation of Product Definition Data," is establishing theoretical methods and standards for representing product definitions in computer format. This effort will promote the interchange of design and manufacturing information (CAD/CAM) between government, industry and academia without compromising proprietary materials.

In September Mike was one of 40 professors invited to and attending the Professors' Conference on Automation and Control which was presented by General Electric. The conference, held in Albany, Schenectady and Cooperstown, put a heavy emphasis on CAD/CAM methods employed by General Electric and promoted an interchange of ideas with the faculty to take back to their classes and research.

Closer to home, this fall Mike was promoted to the rank of associate professor on the basis of his accomplishment in the Department. Congratulations, Mike!

## GAMMA EPSILON NEWS

The new officers of Gamma Epsilon are JOHN METZ, '77, of Mومence, president; ALBERT CHAN, '77, from Oak Park, vice president; MARY JANKOUSKY, '77, Benton, treasurer; SHARON STEFANIK, '78, of Arlington Heights, secretary; and CALEB DIDRIKSEN III, '77, from Winnetka, director.

ARTHUR G. DIXON, '24, and GEORGE S. TREES, '39, in addition to receiving recognition as distinguished alumni of General Engineering, were made honorary members of Gamma Epsilon at the General Engineering Awards Banquet last spring. Retiring Professors ROBERT P. BORRI and ROBERT A. JEWETT were also made honorary members.

During the Spring Semester Gamma Epsilon visited the Caterpillar Tractor Company in Decatur. The society also canoeed down scenic Sugar Creek through Turkey Run State Park in Indiana.

This fall Gamma Epsilon is planning a tour of the Anheuser Busch Brewery in St. Louis. The group also plans to assist in an architectural drawing class at Urbana Junior High School. Meetings will continue to be held on Friday afternoons at a local establishment. Watch for notices in the Transportation Building.

Students initiated into Gamma Epsilon last spring were CALEB H. DIDRIKSEN III, '77; STEVEN E. MAIR, '77, from Princeton; CHARLES H. MOTTIER, '78, of Springfield; CHARLES R. MURDOCK, '77, Arlington Heights; and SHARON M. STEFANIK, '78.

## NEW G.E. COURSE

Approval was recently granted for a new course, G.E. 392, Legal Problems in Engineering Design. The course is intended to be an important part of the pending master's degree program in General Engineering, but is open to all graduate students and seniors in engineering. In view of the ever growing amount of litigation over product defects and engineering malpractice, it is incumbent upon the practicing engineer to be informed about the potential for legal liability in connection with his or her work.

The course includes the law of products liability, legislation relating to product safety, organization and strategies in product safety assurance, as well as contractual obligations of the engineer, meeting the legal standard of engineering care, forensic engineering and business associations. In addition, patent protection and related topics are covered. G.E. 282, Introduction to Patent Law, has, therefore, been dropped.

Offered on a trial basis last spring, the new course gave the students some additional insights to their future careers. The general reaction was that the real world of engineering is more of a jungle than they had thought, but that if one has knowledge of the potential dangers, they can be dealt with realistically.

## LIKE TO RECOGNIZE AN EXCELLENT TEACHER?

1975 marked the introduction of the Urbana-Champaign Campus Award for Excellence in Undergraduate Teaching. This award was created to recognize faculty members and teaching assistants for outstanding efforts in undergraduate teaching and to emphasize once again that undergraduate instruction is a function of major importance at the Urbana-Champaign Campus. Six winners are recognized each year. Each receives \$1000 for personal use and \$1000 for departmental purchases of instructional materials. In addition, the winners are feted at an annual banquet and their names are inscribed on a plaque located prominently in the Undergraduate Library.

Nominations for 1977 awards are now being accepted. Selection will be based on committee screenings of candidates at the departmental, college and university levels. Criteria established to gauge teaching excellence vary among departments. However, things such as consistent performance, excellence and effectiveness in teaching, impact on the student, innovative approaches to teaching, and contributions to courses and curricula might be considered in determining your choice.

If you wish to nominate a G.E. teacher, simply write a brief letter stating who you want to nominate, when and in what situations you knew your nominee, and why you are nominating the individual. Address your letter to:

Faculty Awards Committee, Department of General Engineering, University of Illinois, 17 Transportation Building,

Letters of nomination must be received by January 14, 1977, to be considered by the departmental selection committee.

If you wish to nominate a teacher in another department, address your letter to that department.

## SENIOR DESIGN PROJECT . . . continued from page 4

plenished solderwave formed by pumping molten solder through a nozzle. The soldered connection forms as the wave strikes the board, and capillary action completes the joint. However, in using this process, Micro Switch also acquired the industry-wide problem of solder bridging between component leads. The objective of this project was to recommend means for reducing the number of these shorts.

The process involved a complicated interaction of variables. Those variables which have the greatest effect upon solder bridges were found to be:

- (a) wave height,
- (b) solder temperature,
- (c) preheat temperature,
- (d) board speed through the wave, and
- (e) connection shape at solder joint.

A statistical experiment was designed in which a production run of PC boards was tested. It was discovered that the process variables could only be controlled in a laboratory situation, as the adjustments were so critical.

Some special tests were performed, including:

- (a) running a transparent board through the wave to observe peelback and other wave effects,
- (b) wavesoldering a group of specially designed boards to obtain additional statistical information, and
- (c) using physical blocks to limit capillary action by reducing the amount of excess solder on the PC boards.

Several recommendations were made to Micro Switch which have resulted in the almost complete elimination of the problem.

## TRUST FUND

This Department has, through the University of Illinois Foundation, established an investment fund, the earnings from which are used for scholarships and awards to our undergraduates. Income from the fund presently provides for only a segment of our ongoing scholarships and awards. Alumni and friends are invited to assist in this project through their contributions. You may send your gifts to the General Engineering Trust Fund, University of Illinois Foundation, 224 Illini Union, Urbana, IL 61801.

# ALUMNI NEWS

'37 GEORGE G. YOUNGSTROM of Milwaukee has recently retired from Biersach & Niedermeyer Company after 8½ years as a sales engineer. This was his second retirement. In 1967 he retired from U.S. Steel Corporation after some 31 years, most of it spent in outside sales for U.S. Steel Supply Division in Milwaukee. He plans to spend most of his time working with the Boy Scouts, golfing and fishing.

'38 ROBERT W. DALRYMPLE is head of Civil and Environmental Engineering Technology at Metropolitan State College, Denver, Colorado. His son, George, was elected to Tau Beta Pi and Pi Tau Sigma at Colorado State University, Boulder. George received his B.S. in Mechanical Engineering in August.

'39 WILLIAM ALLEN ROBERTSON wonders if any '39 classmates can trace conversion of their mysterious blackboard "Oscar" into the infamous "Kilroy" of World War II fame. "Grandpa Bill suspects he's getting to look more like Oscar as years go by," i.e., slightly bald on top.

'41 DANIEL SYDNEY WILCOX is now with Westinghouse Electric Corporation in Pittsburgh, Pennsylvania.

'50 WILLIAM R. BIERBAUM received his Master's Degree in Management last May from the University of New Mexico in the same commencement exercises as his younger son, Keith, received his bachelor's. The older son, Bruce, is in his last year in Veterinary Medicine at Washington State University. Since July 1, 1975, Bill has been Director, Housing and Food Service at Washington State University, Pullman.

'50 SAMUEL DEAN ALBRECHT is president and manager of Albrecht Well Drilling, Incorporated, of Ohio, Illinois. The firm was started in 1880 by Albrecht's grandfather and has grown and served the area ever since. The Albrechts have four children: Martha Jean who graduated from the University of Illinois last spring; Harold Dean, a senior in G.E.; Robert, a high school senior; and Lucille in seventh grade.

'51 RICHARD A. NORBERG is now Vice President, Package Fastener Division of Rockford Products Corporation of Rockford. The firm manufactures a wide variety of standard nuts, bolts and screws as well as many special items.

'54 WILLIAM EUGENE GETZEN and his family gave up their home and bunked with the neighbors one night this spring, but they didn't mind because their places were taken by Gerald and Betty Ford. In return for this favor the Fords included the Getzens among the guests at a state dinner honoring King Juan Carlos de Borbon of Spain and his queen. Bill received his law degree here in 1959 and is a partner in the legal firm of Williams, Parker, Harrison, Dietz and Getzen in Sarasota, Florida. He and his wife Ruth, also a U. of I. alum, have three children: Linda, a student at Duke, Sandra in high school, and Jimmy in grade school.

'60 THOMAS H. WALKER is a major in the U.S. Air Force with an APO address out of San Francisco.

'64 GEORGE R. (DICK) ARMSTRONG, Lcdr., SC, in the U.S. Navy, completed a very successful tour of duty aboard the guided missile cruiser Dale which was highlighted by winning two departmental (Supply) excellence awards and being a finalist for the food service award. Now assigned to shore duty, Dick is Control Division Superintendent within the Supply Department at the Philadelphia Naval Shipyard.

'67 LOTHAR R. SCHROEDER received his Ph.D. from Lehigh University last January. Currently he is an assistant professor at Moravian College, Bethlehem, Pennsylvania, where he is teaching courses in Industrial and Organizational Psychology. The Schroeders' sons are now 5 and 4 years old respectively.

'68 CHARLES WAUGH MAHAN received the Doctor of Juris-

prudence degree from Ohio State University in 1970. Since leaving the Air Force in November, 1975, he has been associated with Mr. Frank J. Thernes in the practice of law in Dayton, Ohio. The Mahans have two sons, Marc A. almost four years old, and Kyle who is less than one year old.

'69 EDWARD A. BARTZ, JR., was awarded an M.S. in System Management by the University of Southern California, June 15, 1975. He is currently employed as a Process Development Engineer by Fiber Industries, Inc., of Florence, South Carolina.

'69 RICHARD T. CHENG earned his Ph.D. from the U. of I. in 1971. He is Chairman of the Department of Computer Science at Rochester Institute of Technology, Rochester, New York.

'69 CHARLES WILLIAM STONE received his Ph.D. in Mechanical Engineering/Operation Research from the University of Illinois in 1973. As a captain in the Air Force stationed at Wright Patterson AFB in Ohio, Chuck was responsible for the development of mathematical models to ascertain the survivability and detectability of aircraft. As a direct result of these efforts he was awarded the Air Force Systems Command Outstanding Technical Achievement Award in Studies and Analysis for 1975. Chuck has returned to civilian status and is Physical Systems Analyst for Science Applications, Inc., in Rolling Meadows, Illinois.

'70 JAMES S. SCHLIFKE received his Doctor of Jurisprudence from UIUC in June, 1973. He is Group Counsel Staff Attorney for G.D. Searle and Co., Des Plaines. Early in September James took the exam to practice before the Patent and Trade Mark Office. On August 19 the Schlifkes welcomed Adam Craig who weighed in at 6 lb. 2 oz.

'70 BRUCE ALLAN YORK received his M.B.A. in February, 1976. He is now Assistant to the District Engineer of the Missouri Pacific Railroad in North Little Rock.

'71 STEVEN PAUL NYSTEDT is Project Manager, Target Stores, for the Dayton-Hudson Corporation. As such he is responsible for the overall coordination of design and construction of the Target Stores.

'71 CHARLES SUMNER STAHL, JR., received his law degree from John Marshall Law School in June, 1975. He is employed as a judicial law clerk for Judge John J. Stamos of the Illinois Appellate Court in Chicago. On June 12, 1976, Chuck was married to Shawn Susan King in Chicago.

'72 MICHAEL J. RIZZO is Program Manager for all Industrial Nucleonics' large scale computer systems on the west coast. He handles all aspects from design, installation, and implementation to continuing services and maintenance.

'73 PAUL NEWHAGEN is Extrusion Production Supervisor for Chemelex, manufacturer of several types of heat tracing, industrial and commercial heaters. Paul expects to start in the M.B.A. program at the University of Santa Clara this fall. In his spare time he enjoys white-water river rafting and backpacking along the John Muir Trail in the Sierras.

'74 ALEX G. BERSIN received an M.S. in Mechanical Engineering from UIUC last December. Now he is Bio-Medical Development Engineer for Hollister, Inc., of Lincolnwood.

'74 KATHRYN A. DAVIS is leading an interesting life. After receiving her M.S. in Civil Engineering in May, 1975, Kathryn spent the summer working for a small Swiss civil engineering consulting firm in Bern, Switzerland. She returned to this campus in the fall to complete coursework for a Ph.D. Summer, 1976, Kathryn was part of a geological field expedition from the University of Illinois working in England, Scotland and Wales. On September 1 she returned to her former employer in Bern to work until December 1. After that Kathryn plans to travel in Europe for several months.