

GENERAL ENGINEERING NEWSLETTER

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

VOLUME 24 NUMBER 2

SPRING 1982

HI-TECH AND THE MONEY CRUNCH MEET HEAD-ON

To say that high technology, including CAD/CAM and robotics, is crucially important and woefully underfunded is to state the obvious. Not only are the Department of General Engineering and the College of Engineering of the University of Illinois seriously concerned, but the American Society for Engineering Education and many other schools feel that the potentially highest achievers may not receive the education they should have in high technology if funding for equipment and space adaption continues to be as inadequate as at present. For the Department of General Engineering to use its CAD/CAM and robotics ability to the fullest it needs at least \$450,000 for equipment and space remodeling that will bring it up to a level that will extend high technology teaching to all general engineering students. Space remodeling is vital-- remodeling of the fourth floor of the Transportation Building to accommodate the equipment will require \$150,000 and another \$300,000 is needed for additional equipment.

A number of states are funding their high technology teaching and research capabilities. For example, the University of North Carolina has appropriated \$200,000 per year to establish and equip a microelectronics center and a total sum of \$24,400,000 for fellowships in high technology; New Mexico has appropriated \$5,000,000 to upgrade its engineering laboratories; Arizona State has assigned \$32,000,000 for its high technology laboratories, equipment, and fellowships. The national cost to keep laboratories up to date averages about \$2,000 per year per student who is graduated; The College of Engineering, including the Department of General Engineering, shortage is currently \$6,000,000. The Governor's announcement of February 26,1982, of stringent budget cuts practically eliminates any increase in moneys for high technology. University President Stanley Ikenberry has urged the State Board of Higher Education, which distributes appropriated funds "...to fund economic development programs through internal reallocation, particularly in high technology...."

However, the outlook for needed funding is grim without assistance from industries that employ engineers and from the alumni. One alumnus has already contributed \$10,000 to the General Engineering Development Fund, providing a hopeful start toward building the department's CAD/CAM funds. It is startling to realize that nothing so forcefully points up the situation as the realization that both Germany and Japan are using our know-how to outstrip us!

GENERAL ENGINEERING RESEARCH AND DESIGN SEMINARS

Eleven research and design seminars are scheduled for the '82 spring semester. The series was opened by Dr. Wayne Davis whose topic was "New Directions in the Decomposition of Large Mathematical Programming Problems." A brief overview was given of the basic decomposition approach to the solution of large mathematical programming problems by iteratively solving a defined collection of sub-problems. Existing philosophies toward coordinating the solution of resulting collections of sub-problems were discussed with particular attention to recent research that sought optimum information for the coordination of the solution process. Future research areas were also noted.

Professor Thomas P. Conry's "Thermal and Rheological Effects on Traction in Elastohydrodynamic Lubrication" was a brief review of the recent history of elastohydrodynamic (EHD) lubrication which focused on the attempts to predict the traction across the EHD film between two elastic surfaces in rolling and sliding contact. The failure of Newtonian viscosity models to predict the tractive behavior of the lubricant and the present use of models which consider both rheological and thermal effects were also discussed.

"Optimal Solar Energy Utilization by Mathematical Programming" was Professor Osman Coskunoglu's topic. The optimal development of active solar energy systems entails determining design variables, such as type, area, and layout of collectors and the size of carry-over storage facilities. Traditionally, analysis approaches have been used that are based on computer simulation techniques. Mathematical programming techniques provide a synthesis approach and are not yet used in solar energy development. These two techniques were discussed in the context of solar thermal power generation by central tower systems.

The March 9 lecturer was William H. Selke, senior staff engineer of the Caterpillar Tractor Company. He spoke on

the "Industrial Application of Solar Energy." The economic and technical performance of various methods that are available in using solar energy can be an important factor in the efforts of industries to mimimize the impact of high energy costs on their products and on their services to customers. Consequently, an industrial review of this potential energy source is a continuing effort he said. A large-scale application is now under construction, and a prediction of its technical, economic, and other uses was made.

Additional lectures were given on March 23 on "An Electric Vehicle," by B.J.Raskauskas of Delco Electronics, and on April 1, 6, and 13 by lecturers whose topics were not available as the Newsletter went to press. Bob Bickling of Microswitch was scheduled to speak on "Integrated Sensors" on April 20 and Richard D. Strunk of Deere & Company was to talk on "Computer-Aided Engineering" on May 4.

ENGINEERING OPEN HOUSE ATTRACTS THOUSANDS

The thirtieth Engineering Open House theme this year was The Magic of Technology, and it was amply displayed throughout the two-day event on March 5 and 6. Two hundred fifty exhibits were on view throughout twenty-seven buildings. The prime focus was on a college-wide project to develop a space colony to support human life. On the second floor of Engineering Hall students from several departments created a model that was complete with the means for food production, communications, waste disposal and all other systems that would be needed in space.

The Mad, Mad World of Chemistry, the sound of concrete crushing in Talbot Laboratory, and a molten metal-pouring demonstration are only a few of the Open House highlights. The event closed with the annual dinner and St. Pat's Ball-- a long-time tradition in the College of Engineering.

Next year, if you're not too far away, why not come back for a day for an update on the College of Engineering that you'll enjoy, enjoy!

OBITUARIES

Edwin C. McClintock, Jr. emeritus professor of general engineering died on February 7,1982, in Urbana. A native Virginian, he came to the University of Illinois in 1955. Memorials may be made to the Lancaster County Public Library, Kilmarnock, Virginia.

William C. Bremner, 1929, died on June 24, 1981. He spent his active years with Commonwealth Edison Company of Chicago and retired in 1972 as superintendent of safety.

Don A. Parkhurst, 1938, died on November 4, 1981. He was a resident of Park Ridge, Illinois.

AGAIN, THE "LOST"

During the past year we have had a fair degree of success in locating our missing alumni-some have reported in on their own initiative and others have been located for us through the grapevine or by classmates. However the list is still longer than it should be. Moreover, the cost to the Alumni Association is very high for returned letters- 25¢ for each undeliverable letter! Sometimes we do get some information but often the notation is merely "Undeliverable," whatever the reason. Here is an additional list; can you help us?

Francis R. Belanger, '77 James F. Benten, '72 Herman F. Bergner, '67 Mark R. Brown, '81 Russell P. Browne, '28 Nelson K. Burrell, '50 Richard Carpenter, '81 Robert K. Christianson, '66 Carroll S. Crosby, '13 Willie M. Dean, Jr., '67 Arthur H. Dietmeyer, '49 Terry W. Ditsch, '77 Leon W. Florschuetz, '58 Kim F. Fuller, '75 Charles R. Hinson, '63 Arthur V. Houghton, '48 Herbert B. Keller, '31 Jane E. Kienstra, '80 Daniel A. Langlois, '80

Chester D. Marquis, Jr., '45 Homer G. Mclean, '69 Douglas G. Medley, '69 Mark R, Menarik, '79 Philip E. O'Donnell, '63 Izim Okeren, '70 Douglas W. Pihl, '62 Gerald C. Primm, '32 Vincent W. Rempel, '66 Alan J. Rodeck, '77 Wayne L. Sabatke, '67 Timothy J. Smith, '75 Marshall C. Suess, '77 Mazen H. Sweis, '75 James L. Tomlinson, '64 Joseph L. Tourtelot, '32 Robert D. Watson, '76 John R. Weibel, '66

ST. PAT'S KNIGHTS

The dubbing sword of the engineer's patron saint has again fallen on the shoulders of high-achieving general engineering seniors—April Horne and Robert Day—and they are now among his knights. Those knighted are chosen for high scholastic achievement and distinguished activity in campus student affairs. Statistically, the General Engineering Department has a larger number of knights on St. Patrick's roll of honor than any other department of the College of Engineering.

JETS ACTIVITIES

Illinois JETS continues to receive increased exposure and visibility throughout the state. The popular TEAMS (Test of Engineering Aptitude, Mathematics and Science) competition involved about 5400 high school students from 460 high schools during Engineer's Week in February. The best teams and individuals from 42 district contests advanced to 8 regional sites, where winners were determined who competed in the State Finals in the Illini Union on March 18. The grades received there are compared with

those of 14 other states to determine national winners. The size of the Illinois TEAMS competition in 1982 represents a 50 percent increase over the past year.

A new competition was initiated by JETS last fall. It was co-sponsored by the Freshman Committee of the Engineering Council as an Open House project and by Governor Thompson. The contest required teams of high school students to examine their community and prepare an essay on the subject "My Community Would be a Good Location for High Technology Industry." The six best reports were presented on March 5 in Loomis Laboratory, with Crystal Lake Central High School taking first place and winning an invitation to a luncheon with Governor Thompson.

Other functions of JETS are continuing, such as chapter support, NEAS, summer programs, Engineering Design Contests, and minority development efforts. The Illinois JETS Board, chaired by Porter Womeldorff, Vice President of Illinois Power Company, met October 1,1981, at SIU-Edwardsville and March 18, 1982, in Urbana.

GENERAL ENGINEERING ATHLETES RANK HIGH IN UNIVERSITY SPORTS



Michael Lehmann

In spite of carrying rigorous programs of study, seven general engineering majors are contributing outstanding performances to University of Illinois athletics. Highest in achievment is Michael Lehmann, who not only holds the Big Ten shot put championship but in March won the NCAA national championship in that sport. Scott Jennings also has an excellent shot put record, but he is red shirting

for this year. Marianne Dickerson took sixth place in the national AIAW cross country race out of a field of 193 runners in November of 1981. By finishing in the top twenty-five runners with a time of 18:10 she earned AIAW all-American Honors. Gregg Reynolds also won a varsity letter in cross country and has run the mile in 4:06.

Dee Maras and Scott Palmer are both on the varsity basketball squad.

Volley ball is Anina Skorous' sport in which she has won her letter.

Last but by no means least twins Margaret and Michelle Vogel, who have been achieving quite a bit of notice in track are members of the women's track team. As freshmen they have not yet declared a major, but they are enrolled in two general engineering courses.

DO YOU BELONG TO THE ALUMNI ASSOCIATION?

FACULTY NEWS

Professor Jerry Dobrovolny is catching his breath after the strenuous months he spent on the Athletic Advisory Board. It was a harried period, and like everyone else involved, it was a great relief to have it ended, even though it was not to Illinois' satisfaction.

Professor Thomas F. Conry, a member of the ASME Committee on the Technology Executives Conference (TEC), attended this year's conference at the Denver Marriott Hotel. The TEC Conference is the prime in-service orientation meeting for all new technical division chairmen and for paper solicitation and program planning chairmen as it covers all aspects of ASME operations.

Professor Rodney D. Hugelman presented a paper at the February 22 through 26 SAE International Congress and Exposition in Detroit. His paper, "Recent Developments in Swirl Induced Turbulent Mixing for 4-Stroke Cycle Engines," received an "outstanding presentation" commendation from SAE.

Professor Emerita Grace Wilson is about to re-retire. After becoming a professor emerita, she continued on reduced time, producing the department's corridor exhibits and its publications. Even with the advent of a new editor, she found her time still so preempted that she has finally decided to really call it a day and enjoy her house and garden and learn to play the piano! We'll all look forward to her first recital. Lots of luck Grace--we'll truly miss having you about.

ALUMNI NEWS

1939

Maynard F. Hufschmidt is a visiting fellow at the East-West Center, Environment Policy Institute in Honolulu. From 1965 to 1979 he was a professor in the Department of City and Regional Planning of the University of North Carolina at Chapel Hill, where he specialized in public investment, water resources, and environmental planning. His sixteen years of public service began in 1939 with the Illinois State Planning Commission and was continued with the United States National Resources Planning Board, the Bureau of the Budget, and the Department of the Interior. From 1956 to 1965 he was a Research Associate in and the Director of Research of the Harvard Water Program. Dr. Hufschmidt is also the author of numerous publications and has been a consultant to many local, state, federal, and international agencies.

1944

Christ D. Kacalieff was voted business man of the year by the Granite City, Illinois Chamber of Commerce. Currently, he is president of Chris Kaye Manufacturing Company of Madison, Illinois, and president of Injex Plastics Moulding Corp. of St. Louis, Missouri. This year is his thirty-third in the custom plastics moulding field. His interest in plastics began with his work with Professor Findley in the Theoretical and Applied Mechanics Department at Illinois in 1943 and 1944.

1949

Raymond S. Kramer has been promoted to director of engineering administration in the Engineering Department of the Texas Gas Transmission Corporation, headquartered in Owensboro, Kentucky. A multi-division corporation, its major interests are in gas transmission, oil operations, and general commodities trucking. Prior to assuming his present post, he was assistant chief engineer from 1975.



Raymond S. Kramer

1957

Roland E. Ruble received his M.B.A. from Pepperdine University in August of 1978. Presently, he is president of his own company, Delphi Associates, Inc. He writes, "After nearly 25 years of working for others, I have formed my own company and am involved in consulting services to the oil country tubular goods processing industry. In addition, we are selling oil field equipment, oil field machine tools, and tubular goods." He is located in Houston, Texas.

1958

Banfield R. Capron is southwest regional manager of Johnson Controls, Inc. He resides in Dallas, Texas.

1960

William M. Littmann is, since January, 1981, selfemployed. His Chicago-based firm Littmann Industries, produces ductile iron and cast iron pipe, valves, and fittings. His eldest daughter, Deborah, is carrying on the Illini tradition—she is a sophomore in business administration on the Champaign campus.

1961

Arnold J. Freund is president of the Mining-Materials Division of the American Hoist & Derrick Company in Worthington, Ohio.

1963

Jack M. Punzak is regional sales manager for Honeywell, Inc. Process Management Systems Division in Pheonix, Arizona. He resides in Buffalo Grove, Illinois.

1964

Roger D. Erickson, is an engineer with Network Systems Corp. in Brooklyn Park, Minnesota. He and Diana McConnell were married in August, 1981 and live in Fridley, Minnesota, with Diana's two teenage children.

1965

C. Wesley Rowley is general manager of the Tulsa office of Quadrex Corporation. He is also a commander in the United States Naval Reserve filling a mobilization billet in the Pentagon Office of Submarine Warfare (OP-02).

Thomas S. Snow is manager of coal conversion, United States Gypsum. He is involved in the development and application of coal combustion systems for retro-fitting on facilities currently using natural gas or oil as primary fuel.

1968

Donald C. Bishop is currently in real estate in Plano, Texas. He and his wife Mary, B.S. in electrical engineering in 1968, have two sons, Owen, six, and Trevor, two.

1971

Rodney J. Baudino is the senior manufacturing engineer for King-Seeley Thermos Company in Macomb, Illinois.

1972

Dennis D. Lane is an associate professor of civil engineering at the University of Kansas, Lawrence. He and his wife Kristine have three sons and a fourth child who arrived in December of 1981.

John Munson is a project engineer with Sunstrand Energy Systems in Rockford, Illinois.

Mario A. Stella is regional manager in the Peoria office of Raybestos-Manhattan of Trumbull, Connecticut. He resides in Dunlap, Illinois.

1973

Daniel M. Burke is now district sales manager for Square D at the Wichita office, with the responsibility for coordinating all Square D sales in the Wichita area. He formerly served as a Square D field sales engineer at St. Louis, Missouri. While in the St. Louis area he completed his M.B.A. at Washington University.

Thomas L. Burke is project administrator and team manager in the Austin, Texas, office of Turner Collie &



Daniel M. Burke

Braden, Inc. He and his wife, Trudy, have two sons, Tommy and Ryan, aged nine and five. They live in the Texas Hill country near Lake Travis. His current projects include several small water and wastewater systems for east and west Texas cities and a large wastewater treatment plant for the city of Austin. He says, "Moving to Texas was the smartest thing I ever did."

Robert B. Burns, Jr. is a partner in Wilson, Grosenheider & Burns in Austin, Texas.

Michael S. Meronek is a buyer of investment castings for General Electric's Armament & Electronic Systems Department. He is responsible for procuring production high technology investment casting for his department, which is also General Electric's high speed mechanism research center. Negotiations under the Truth in Negotiations Law, technical negotiations, and acceptance of dies used in production are integral parts of his activities. He says, "In June our third child, Helen Florence, was born. Between the kids, G.E., and building a home we are kept busy."

Paul Newhagen is co-founder and chief financial officer of Source III, Inc. in San Jose, California. A broken foot prevented a projected walking tour of the John Muir Trail but he is hoping to be in shape for skiing soon. His company specializes in integrated circuit design.

Michael F. Purcell is senior system consultant of the Data Base Administration of the American Hospital Corporation. He resides in Mundelein, Illinois.

1974

Keith H. Batterman is now with Paslode, a division of Signode Corpration, in Skokie, Illinois. A manufacturer of pneumatic nail and staple guns, its latest project is a wall notching and stapling machine for use in the construction of mobile homes. It notches studs, staples top and bottom plates to them, and staples paneling to the studs for a maximum 80 foot wall.

Kathryn A. Davis, a geotechnical engineer/project manager with CH2M Hill in Bellevue, Washington, has just returned from six months as a resident inspector on a tailings dam project in Caddo Gap, Arkansas, which she describes as "not the end of the world, but you can see it from there." She is one of three directors of the ASCE Seattle section (a three-year term) and is a district director of the Alaska, Oregon, Washington, Idaho Region of Tau Beta Pi. She hopes to be in Urbana in October of 1983 when the University of Illinois chapter hosts the National Convention.

Leonard Duchnowski and his wife have become parents for the first time—a daughter. He is still with Caterpillar and recently received his license as a professional engineer in Illinois.

Bert Williams is a product manager of the Shakeproof Division of the Illinois Tool Works. His responsibilities include marketing, pricing, promotion, and support activities for Shakeproof's HiLo screws, nut products, spring washer, tamper-resistant head, and thread cutting screws. In April he will be married to Mary Jane Smith, who chairs a high school foreign language department. They will make their home in Elgin, Illinois.

1975

Alan R. Belair is a design project engineer with UCC-Linde Division in Tonawanda, New York. He and Kathy Deinzer of Buffalo were married in September, 1981.

Jim D'Orazio is a project engineer with Inland Steel in East Chicago, Indiana. He was on campus in October to talk to two general engineering senior seminars on the possibilities and problems of the steel industry.

1976

Robert P. Gombas is assistant project engineer of Telemotive in Chicago. In October, 1981 he was married to Mary Jo Frangella.

Louis E. Gantz manager of the Management Advisory Services Department of the CPA firm of Warady and Davis in Chicago, has been recruiting at Illinois for the past two years. His wife, Susan Grann ('76, B.S. in Education of the Deaf and Hard of Hearing), is kept active taking care of their son, born in September, 1980. The young man is himself already an independent business man who will appear on the inside cover of the spring Sears catalog.

Lynn J. Richards, who welcomed her first child, Lisel Lynn, in July of last year, also received her Illinois professional engineer license in that same month. She is at present on educational leave from General Motors to begin her Master's/Ph.D program in the University of Illinois Department of Mechanical and Industrial Engineering.

1977

Tim Miller has been appointed senior component engineer in the Component Qualification Division of Sargent & Lundy, a Chicago-based engineering firm that specializes in the design of electric power generating stations, transmission lines, and related facilities. He joined Sargent & Lundy in 1977.

William C. Payden is a fire fighter-EMT for the city of Moline Fire Department. In June of 1981 he was married to Lisa Jackson of Moline, a registered nurse.

1978

David H. Coyle is a field sales engineer in the Industrial Controls area of Texas Instruments, Inc. He and his wife Karin were married in May of 1981. She is a 1979 Rutgers graduate and chemical sales representative for Babische Corporation.

Bob Linka and Bill Day are both working on their M.B.A.s at Cornell. They have organized the University of Illinois General Engineering Alumni Club at Cornell and are looking for members. If you are interested, call them at University Apartments,

David W. McCune and Judy Brodiske were married on November 14, 1981. He is an advanced maintenance engineer at the Joliet refinery of Mobil Oil Corporation, where he is responsible for providing the engineering and technical information necessary for maintaining refinery equipment.

1979

Mark R. Anderson is now a production engineer with W.H. Porter, Inc., a manufacturer of passive solar and insulation products. After graduation he was with Chysler as a product development engineer at the proving ground until the slump in the economy terminated his job there. He and his wife, Laurel Anne, "are the proud parents of Matthew Ian, born December 26, 1981."

Daniel K. Mankivsky is currently working on an LNG/LPG storage system as an engineering design coordinator in Das Island, Abu Ohabi, United Arab Emirates. Parenthetically, he says, "For you engineers who are not history majors, it's near Saudi Arabia." He and Linda Bandman, Illinois '80, were married in August of 1980. He hopes "all is well for all my colleagues and the faculty."

Philip J. Morettini is executive assistant to the president of Teledyne Continental Motors-Industrial Products Division as of August, 1981. He says, "The job is a mixture of engineering and general business which requires me to make three or four trips per year to Europe. The major portion of the job entails liaison with Picardo Engineers of England and AVL Engineering of Austria who do a great deal of design work for us."

Jeffery R. Wallace is a staff applications engineer with Liquid Carbonic Corporation in Chicago. He has found his "tough" undergraduate years to have been very profitable. "Illinois, keep up the good work."

Marcia Vorhes Burns and Scott Burns were married in May of 1981. She is employed in the University of Illinois (UIUC) senate office and he is working on his Ph.D. in civil engineering. They reside in Urbana.

1980

Eugene V. Dunn is a planning engineer in data set engineering at the Montgomery (Illinois) Works of Western Electric.

Brian G. Eberle is a law student at the University of California.

Jeffrey M. Frame is on active duty with the Navy.

Bruce B. Gonsholt is a sales engineer with Western Electric in the Milwaukee area. He deals with electrical OEM customers and has a product sales responsibility in excess of 3.2 million dollars a year.

Robert S. Gordon is attending the Stanford Law School after working for the law firm of Cravath, Swaine, & Moore in New York during the summer of 1981. He sends greetings to all his former classmates and would like to hear from them, especially those in the Stanford area.

Silvana A. Medina is a research associate with Bain and Company, a Boston consulting firm, with offices in California, London, and Tokyo, that specializes in market research. "Working with very fast-paced case teams that analyze and recommend solutions to Corporate business problems will be valuable for the next years when I undertake my M.B.A. studies at either Stanford or Harvard."

Jeff A. Miller is attending the University of Petroleum and Minerals in Dhahran, Saudi Arabia.

John C. O'Connor is now on active duty with the Navy. Thomas R. Orgler is a marketing representative with the Westinghouse Distribution Apparatus Division in Bloomington, Indiana.

JoAnn (Jody) Whitacre is studying engineering management at Santa Clara University. Her employer is Westinghouse in Sunnyvale, California, with whom she is a design engineer--advanced concepts engineering.

1981

Tom Anderson is a law student at the University of Georgia, Athens. He has already become a fan of their football team.

Michael B. Jacobs is a field sales engineer with Texas Instruments in Dallas and is presently working as a sales trainee in the company's speech marketing group. He writes that having my secondary field in electrical engineering has given me a distinct advantage in performing my job in this electrically oriented company." He plans to enter field sales in the Florida area in July of this year.

Gary R. Steele has transferred from the Chicago area to the Houston office of Union Oil of California to work as commercial/industrial sales representative.

Michael G. Sutton and Ellen Rice of Gettysburg, Pennsylvania, were married last August. They live in East Lansing, Michigan.



More than 75,000 alumni are-including approximately 45,000 who are life members. If you're already a member, thanks for your support. If you graduated within the last two years, write for special membership rates.

- □ One year single membership—\$11
- □ One year husband-wife-\$14
- □ SINGLE LIFE MEMBERSHIP—\$175. (INSTALLMENT PLAN: \$185—\$10 DOWN. FOUR YEARLY PAYMENTS OF \$43.75.)

□ HUSBAND-WIFE LIFE MEMBERSHIP—\$200. (INSTALLMENT PLAN: \$210—\$10 DOWN, FOUR YEARLY PAYMENTS OF \$50.00.)

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S.S.#
spouse's name (if an alumnus) f female, list maiden name. Does spouse have U. of I. degree?
College & deptCollege yr

As a member you'll receive the Illinois Alumni News or Medical Center Alumni News or The Circle Alumni News, as well as publications of your college or departmental constituent association. You'll qualify for our tour program, our insurance program and the annual family camp. As a member you will continue your loyal involvement with something great-your University of Illinois. To join, either as an annual member or as a life member, return this form with your check to: Alumni Association, 227 Illini Union, Urbana, Illinois 61801. (make your check payable to the University of Illinois Alumni Association.)