



newsletter of the kansas state university college of engineering

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Spring 1985

Kenneth R. Collins



Collins receives Alumni Fellowship

Kenneth R. Collins, a 1954 graduate in mechanical engineering, was selected as a 1985 Alumni Fellow of Kansas State University.

The Alumni Fellows Program recognizes alumni who have distinguished themselves in their respective careers.

Collins is president of Aerojet Strategic Propulsion Company of Sacramento, Calif. He is the third engineering graduate to be honored in the three years since the Fellows Program was established. Collins is one of five 1985 KSU Fellows who returned to campus this spring to lend their expertise in informal contacts with students, faculty and administrators.

Collins started work as an engineer with Aerojet Liquid Rocket Company in 1957. He became president of Aerojet Strategic Propulsion when the Strategic Systems Division became a separate company.

He served in the Air Force for three years after graduating from K-State. In 1973 he attended the Columbia University Executive Program in Business Administration.

Collins is treasurer and immediate past president of the Air Force Association Sacramento chapter, is on the board of directors of United Way, and is active in the Northminster Presbyterian Church.

Gilbert E. Johnson



Johnson gets DSA

Gilbert E. Johnson, president of G.E. Johnson Construction, Inc., Colorado Springs, has received a Distinguished Service Award from the College of Engineering.

The award is given in recognition of outstanding contributions to the engineering profession, community and to KSU.

Johnson was honored in 1983 as a KSU Alumni Fellow. He also established Johnson scholarships for students in engineering and science.

A native of Salina, Johnson received a B.S. in civil engineering from K-State in 1955. After graduation he worked for Dondlinger and Sons Construction in Wichita and later became vice president and treasurer of Hensel Phelps Construction of Greeley, Colo.

He has been president of G.E. Johnson Construction since 1967. The company has been ranked by Engineering News-Record as one of the top 200 contractors with sales in excess of \$100 million.

Johnson is a member of the boards of trustees for the First National Bank of Colorado Springs, the Colorado Springs Symphony, the Fine Arts Center, and Goodwill Industries of Colorado Springs.

Research partnership emphasis of new Center of Excellence

High tech got another shot in the arm recently with a program to promote cooperative research between Kansas State and industry.

Located in the College of Engineering, the Center of Excellence in Computer-Controlled Automation will link engineering and other research faculty with companies interested in utilization of advanced technology.

The Center is partially funded by the state, with matching funds provided by companies sponsoring the research.

"The program stresses partnership between university and industry," said Dean of Engineering Donald E.

Rathbone. "Projects chosen would be mutually beneficial in that a company interested in a certain type of research would be matched with faculty members with expertise in that particular area."

Robotics will be a major focus of the Center, Rathbone said. The College of Engineering has acquired an International Robomation/Intelligence M50 robot, which can be used for hands-on training or for workshops in explaining how companies can be more productive. More equipment is expected to be added soon.

Faculty members currently attached to the Center have expertise in areas such as instrumentation, automatic controls, computer vision, computer-integrated manufacturing, knowledge-based computer systems, and artificial intelligence.

Faculty from engineering and the Department of Computer Science are

Cont'd. p. 2

Research Center, cont'd.

conducting research projects initially. As more projects are added, other departments will participate.

The robotics program in the College of Engineering has developed in a number of areas, Rathbone said. They include a "Robotics in Manufacturing Conference;" acquisition of a technical library; graduate programs in the robotics area; undergraduate courses; and workshops and seminars.

Research projects being conducted through the Center include computer control of robotic devices; application of intelligent, sighted robots to non-repetitive tasks; development of sensors for automated operations; computer control of tractor engines; and flexible manufacturing systems.

A major factor in the development of the Center is the addition of two Harris H-800 minicomputers in the Durland Hall remote computing facility. These, along with a VAX-750 and three new graphic design stations, will help provide researchers with the necessary capabilities for projects conducted through the Center.

The College of Engineering last year established its first major program to attract more research to Kansas State. The program, the College of Engineering Research Center, operates as an arm of the KSU Research Foundation. The new research center provides more flexibility in arranging industry-sponsored research and in acquiring agreements for licensing of a product or process stemming from the research.



International Robomation/Intelligence M50 robot is being used as a teaching/research tool in the College of Engineering and is also a local point of the Center for Excellence in Computer-Controlled Automation. Pictured are Garth Thompson, mechanical engineering, and John Rasure, graduate student in electrical and computer engineering.

Protecting the environment

Preserving groundwater and maintaining drinking water quality are high priority items on the research agenda for the new Office of Hazardous Waste Research in the College of Engineering.

"How can hazardous materials or solid wastes be removed from the environment, or how can they be stored? The office could be an important research mechanism for answering these types of questions," said William H. Johnson, director of the new office. Johnson also is director of the Engineering Experiment Station.

The Office was created as a means of finding solutions to some of the real problems facing society. "People want to be assured that hazardous waste materials are handled in such a way that their health is not in danger," Johnson said.

Initial areas for research include: technology assessment study of current knowledge on handling and storage of hazardous wastes; removal of chemical contaminants; reduction of toxic wastes to harmless products; toxic waste containers; and effective use of sewage-treatment residues.

Faculty activities

New book

Stephan Konz, industrial engineering, has written a new textbook, *Facility Design*, published in January by John Wiley and Sons, Inc. The book was written around the concept of a "capstone" senior design course, which assigns a series of connected projects leading to a final integrated design of a manufacturing plant.

The text covers current engineering practices in areas such as group technology, noise reduction, waste management, security and utilities.

Konz also is author of *Work Design* and co-author of *Man and the Indoor Environment*.

Honors, awards

Merrill E. Blackman, architectural engineering and construction science, is the first recipient of the national Associated General Contractors (AGC) Foundation's Outstanding Educator Award. Blackman has been on the faculty for 19 years and played a leading role in development of classes in construction science. He organized the AGC student chapter and was KSU Student Advisor of the Year for 1984.

Muthuraj Vaithianathan, industrial engineering, was one of 15 engineers chosen by the Society of Manufacturing Engineers to receive the society's 1985 Outstanding Young Manufacturing Engineer Award. Vaithianathan is a native of India and has been at KSU since 1981. He has received a number of teaching awards. His research interests are in the areas of computer-integrated manufacturing and robot application analysis.

David Delker, engineering technology, received the Dow Outstanding Young Faculty Award and also an outstanding paper award from the Midwest Section of the American Society for Engineering Education.

Karen Hummell, director of the minorities program in the College of Engineering, was given KSU's 1984 Presidential Award for Distinguished Service to Minority Education. Under her leadership, the number of blacks, Hispanics and Native Americans in engineering has risen from 46 to 95 students since 1978.

Robert Crank, mechanical engineering, is the 1985 student "Advisor of the Year" in the College of Engineering. Nominees are chosen by students in the department and each nominee's students are polled on questions concerning advising technique and effectiveness.

New offices

Dean of Engineering Donald E. Rathbone has been named to the National Society of Professional Engineers Educational Advisory Committee. He will serve with deans from seven other engineering schools.

Stuart Swartz, civil engineering, has been selected by the Society of Experimental Mechanics to head a new international subcommittee on the fracture of concrete and rock. Swartz has done a number of studies on behavior and applications of concrete materials and is directing an NSF-sponsored project to test concrete beams.

Lecturing to classes and talking informally with students and faculty made up part of the day for Hesston Corporation executives who were on campus as representatives of "Company of the Year." The company was recognized for its commitment to education and the engineering profession and for its outstanding support of the KSU College of Engineering. Clockwise from right are Howard Brenneman, president and CEO, Nelson Galle, vice president-administration, and Max Bennett, vice president-operations.



Hesston Corp. Company of Year



A light on the past

The first bulletin from the Engineering Experiment Station at Kansas State was "Illumination of Farm and Town Homes," published in 1914. The bulletin gives figures on the operation of an Aladdin kerosene lamp.

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Dean of the College

Dr. Donald E. Rathbone

Director, Engineering Experiment Station

Dr. William H. Johnson

Impact Editor

Carolee Stark

Two more 'firsts' for Ag Engineers

Ag engineering students have won two more first-place awards in machine design competition sponsored by Allis-Chalmers and the American Society of Agricultural Engineers.

The students won the top national award with "EZ Bale," a device that features a new, straightline method of baling field windrows. The KSU Research Foundation has filed for a patent on the device.

EZ-Bale became eligible for national competition after taking the top regional prize. K-Staters also took first place in this year's regionals with their "Slider Systems," an irrigation device which makes it possible to distribute water more evenly down the furrow.

EZ-Bale is a computer-controlled system which results in even feeding

across the width of a large round baler. Current large balers range from three feet to eight feet wide. This makes it difficult to feed windrows (crop residues) into the baler. EZ-Bale eliminates the need to weave back and forth across the windrow to position the residue for baling.

This marks the sixth time in eight years that K-State has come out on top in the national contest, a tradition started while Prof. Emeritus G.E. "Gus" Fairbanks was faculty advisor.

The reason? "I think it may be similar to a winning football team," said Stanley Clark, current advisor along with Mark Schrock. "While the first group of senior students was establishing a winning tradition, upcoming juniors and sophomores were getting a look at a winning style."

Open House display is 'out of this world'

A display from the National Aeronautics and Space Administration took center stage in the Durland Hall atrium during Engineering Open House this spring.

The display included an astronaut space suit, a manned maneuvering unit, a satellite capturing device and several astronaut handtools.

Also on view with the space equipment was a prototype of an astronaut glove being constructed as a student/faculty project for NASA.

The manned maneuvering unit sent by NASA is similar to a armchair. The unit has a conventional seat and arm rests and is used by the astronaut to travel from space station to satellite. The satellite capture device is a large hand/arm tool used in space for grabbing, pulling and reaching.

Arrangements for the NASA display were made through Lee Willis, a 1983 K-State graduate in engineering technology and an aerospace engineer with NASA. Willis returned to campus to help demonstrate the equipment.

Students on the astronaut glove project are competing with the Massachusetts Institute of Technology, the University of Oklahoma and Worcester Polytechnic Institute in designing a glove that would be worn outside the space vehicle. Students from the KSU Department of Clothing and Textiles also are participating.

According to Jon Held, graduate student in mechanical engineering who is heading the project, maintaining flexibility in a pressurized glove is the major problem being considered.

NASA has been using suits with 3.5 pounds per square inch (psi) of pressure. NASA wants to use suits pressurized to 8 psi, which would make it too difficult for astronauts to bend their hands if they wear the present gloves.

The students are using a variation of the pleating around the fingers of the glove to allow for the increase in pressure and to maintain constant volume so that a minimum of work is required to bend the fingers.

Designing for flexibility in the knuckles of the hand is more difficult, Held said. This is the final problem to be tackled before the students present their version of the glove for judging by NASA in June.



A space suit, along with other equipment from NASA, got a considerable amount of attention at Engineering Open House. Also on display was a prototype of an astronaut glove being constructed by K-State engineering students in a competition sponsored by NASA.



More Open House photos p. 8

Directory underway

Work on the engineering alumni directory being published under contract with Harris Publishing Co. is well underway. Soon all alumni will receive a brief questionnaire with a follow-up request to be sent one month later. The prompt return of these questionnaires is essential so that the information in the directory will be current and complete.

Alumni then will be contacted directly by Harris Publishing Co. to verify information to be listed in the directory and to see whether they wish to purchase a copy. Alumni with current addresses who have not responded to the questionnaire, and are not reached by phone by Harris representatives, will appear in the directory with the information provided by alumni records.

Each listing will contain name, class year, degree(s), residence address and phone number, and business or professional information when available.

Here's news from Engineering alumni

Louis C. Aicher (EE '35, M.S. EE '36), P.E., Manitowish Waters, Wisc., has been doing consulting since his retirement from Allis-Chalmers in 1979. He joined the company in 1936 and became a specialist in power transformer engineering, which led to management positions in this and other areas. He is a Fellow of IEEE, holds four patents, has written numerous technical articles and served on many committees of various professional organizations.

Aicher had a major role in evaluation of Siemens as a partner in technology with Allis-Chalmers and served as a consultant upon formation of Siemens-Allis, Inc. He says he wouldn't trade his career for anything, and "it all started at K-State."

Homer T. "Ted" Wells (ME, ChE '40), P.E., retired in 1981 from General Electric. He began work with DuPont Co. in 1940. He held various positions as supervisor in the production of war materials and in start-up activities of the first and subsequent plutonium production reactors for DuPont and GE. He also served as manager of nuclear power plant projects in the U.S. and abroad.

Lewis L. Headrick (EE '53), P.E., has joined Martin Marietta, Washington, D.C., as a senior staff engineer on the FAA National Air Space Modernization Program.

John W. Reh (AgE '58), P.E., has been named Assistant State Conservationist for Water Resources in the state office of the USDA Soil Conservation Service in

Salina. He also is serving as vice chairman of the National Society of Professional Engineers and as chairman of the NSPE Professional Engineers in Government.

Daniel L. Jilka (EE '59) is co-owner of the Management Recruiters franchise in Seattle, Wash. His firm specializes in the placement of high-tech engineers in the avionics and aerospace industry. He formerly was a manager for the Collins Government Avionics Division of Rockwell International, ending a 22-year career with Collins-Rockwell when he purchased his franchise.

David A. North (EE '61) has assumed the position of administrator for the electrical and computer engineering department of Rice University. He received an MBA from Southern Methodist University in 1967.

Col. Robert F. Bestgen (ME '62) is Deputy Chief of Staff for Science and Technology for the HQ Air Force, AF Systems Command, Andrews Air Force Base. His position involves management and leadership of the Air Force's science and technology program. Col. Bestgen holds an M.S. degree in aeronautical engineering and a Ph.D in aerospace engineering from the Air Force Institute of Technology.

Kenneth W. Seibel (ME '65) has joined the Naiman Company as vice president of purchasing. Naiman is a national real estate development firm with headquarters in San Diego.

Jerry L. Henry (EE '68), Redmond, Wash., has been promoted to Director of Division Operations for Puget Sound Power and Light Co. He is responsible for utility field operations and labor contract negotiations. Henry recently received an MBA degree from City University in Seattle.

Donald E. Richards (ME '72), P.E., shared the highest grade in the state of Ohio in exams given by the Board of Registration recently. Richards is assistant professor of mechanical engineering at Ohio State University. He received an M.S. in 1974 from Iowa State University and a Ph.D from Ohio State in 1981.

Maj. William J. Schrandt (IE '73) has been assigned to the Kansas City District, U.S. Army Corps of Engineers, as deputy district engineer for military. Prior to his assignment he served in Liberia as chief engineer on a mobile training team involved in civil affairs. He is a graduate of the Command and General Staff College at Ft. Leavenworth and has been selected for promotion to Lieutenant Colonel.

Dale Burnick (AgE '78), P.E., is manager of engineering research at Dickey Clay Pipe Manufacturing Co. and recently received his professional engineering license. Burnick is former chief engineer for McNally Pittsburg, Inc. and design engineer for Cessna Fluid Power Division of Hutchinson.

What's New With You?

We'd like to know, and so would your former classmates. Please take a few minutes to jot down any job changes, professional or other activities, whether you've retired, or any reminiscences you'd like to share. Use the form below or write to: IMPACT Editor, College of Engineering, Durland Hall, Kansas State University, Manhattan, KS 66506.

NAME _____ CLASS OF _____ MAJOR _____

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Return to: IMPACT Editor, College of Engineering, Durland Hall, Kansas State University, Manhattan, KS 66506.



Wilson Tripp with antique slide rule.

Prof. Tripp dies

Wilson Tripp, professor emeritus of mechanical engineering, died April 18. Prof. Tripp, who was well known for his fascination with numbers (an article about him appeared in the last issue of IMPACT), taught at KSU from 1936 to the time of his retirement in 1977. He continued to keep an office on campus, where he could be found six mornings a week working on self-designed math problems and puzzles.

One of Prof. Tripp's particular interests was placing wagers with his long-time friend, Dent Wilcoxon, a professor of history and fellow sports fan. The two had walked home together for lunch every day for 35 years, coming up with answers to puzzles created by Tripp, such as a sophisticated system for predicting Fernando Valenzuela's win-loss record (FVR).

Prof. Tripp held B.S. and M.S. degrees from the University of California, Berkeley, and a Ph.D from the University of Illinois. He was a licensed professional engineer, a member of numerous honorary and professional societies, and was a Fellow of the American Society of Mechanical Engineers. A scholarship in his name has been established with the KSU Foundation.

Donald L. Cameron (EE '29), Pine Bluff, Ark., died Feb. 2. Mr. Cameron was a retired cost analyst for Hartford Insurance Co.

Stanley A. White (EE '30) died Sept. 30, 1984. Mr. White worked for Kansas Utility Co. in Ft. Scott after graduation, then moved to Sebring, Fla., where he and his wife Ruby opened White's Radio Service. They later began selling records, pianos, and then tapes and other music

items, branching eventually into a radio and a TV store. The radio and electronic portion of the business is still being operated under the direction of Mrs. White.

Zint E. Wyant, Jr. (CE '32), West Lafayette, Ind., died Feb. 8. Mr. Wyant worked for the Kansas State Highway Commission after graduation and then moved to Kansas City, where he spent 24 years with Harrington and Cortelyou, Consulting Engineers, designing and planning highway and railroad bridges. He also played semi-pro baseball.

David G. Willich (EE '38), Sheffield, Ala., died March 4. Mr. Wyant, a licensed engineer, served as the first editor of the Kansas Engineering Society Bulletin. He had worked for Martin Industries and was a retired Lieutenant Colonel in the Army Reserves.

Thanks to you . . .

Thanks to alumni who responded to telephone appeals this spring, engineering students netted close to \$75,000 in pledges during the annual Telefund sponsored by the KSU Foundation and the Alumni Association.

An architectural engineering senior, Craig Wallace of Wichita, won a color computer as the top prize among the seven academic colleges for the number of pledges received.

About 200 "highly enthusiastic" students worked over a period of five nights, making calls to approximately 11,000 engineering alumni, said Assistant Dean of Engineering John Dollar, faculty advisor for the Engineering Telefund. "The calls were very well received," he said.

Engineering came in second to the College of Arts and Sciences in the amount pledged (\$78,000). But Dollar said he expected that with the addition of employee matching funds, Engineering would top A&S.

Many companies provide matching funds with employee contributions, and alumni are sent a reminder of this along with their pledge slips.

Those who wish to make donations to the College of Engineering Scholarship Fund or to other programs in the College should check employer policies on matching funds, Dean of Engineering Donald E. Rathbone said. "I also want to thank those who contributed. Alumni support has been a tremendous help to the College."

Kathleen Daniels, Kalvesta, and Doyle Baker, Dallas, Tex., both seniors in industrial engineering, coordinated the Telefund effort for the College.

Students lend building skills to home project



Construction science students work on doorframe of three-room home addition they are completing as a project for their chapter of Associated General Contractors.

Paul Mattingly, clipboard in hand, surveyed members of his crew as they hammered door frames, trimmed windows and applied drywall on the three-room home addition they were helping to complete.

"We come up with the most practical way of getting things done," he said.

And indeed they do. As students in construction science, Mattingly and his crew are learning management and organizational techniques that will be valuable later when they assume positions in industry as managers of construction projects.

The students, members of the K-State chapter of Associated General Contractors, are getting an opportunity to put into practice

Cont'd. p. 7

Home project, cont'd.

what they are learning in the classroom. Though swinging a hammer isn't part of the curriculum, the students use such "hands on" skills in community service projects conducted through AGC.

Completing the home addition is just one of the many projects the AGC members have taken on over the past few years. And it's an example of the enthusiasm that has led KSU to four first prizes as top chapter in the nation.

The students have weatherized homes for older citizens; helped make entrances to Manhattan more pleasant with welcome signs; chipped in when help was needed on a bridge-painting job; and installed innovative playground equipment at Lee Grade School.

The students do the plans and specifications for their own jobs, generally working through local government and civic groups in getting projects that qualify for assistance.

Mattingly, a senior from Louisville, Ky., is chairman of the most recent project—home repairs for the elderly.

The home addition they have been working on was started two years ago but never completed. "The children of the owners would like to see the project finished," Mattingly said. The relatives are paying for most of the materials, but local merchants also have helped with materials, tools and equipment.

In their projects, the students deal with planning boards, city commissions and other community organizations, said Merrill Blackman, faculty advisor. "They gain the skills that will be necessary as graduates in construction science."

The construction science program at KSU was established in 1966.

This year's design turned out to be a winner for K-State's civil engineering students in the annual concrete canoe race. KSU won the traveling trophy for the most overall points and also took first place for best construction. Canoe gets a flatter, shorter look with the help of, from left, Dave Hubbard, Newton; Bruce Barnes, Wichita; Mike Osbourn, Overland Park; and Connie Turner, race chairman, from Shawnee.

Students earn honors

David Jarrett, senior in electrical and computer engineering from Kansas City, Kan., is the winner of a graduate fellowship from the National Consortium for Graduate Degrees for Minorities in Engineering, Inc.

Jarrett's fellowship will pay tuition and fees, plus an annual stipend of \$5,000 per academic year for studies leading to a master's degree. As part of the program, he has been assigned to a summer internship, which he will pursue at Lawrence-Berkeley Laboratory.

Jarrett, along with Nesby Bolden, graduate student in industrial engineering from Wichita, and Marvin Thomas, senior in electrical and computer engineering from Salina, also has been tapped for honors by the Minority Resource Network. The three students have been named among the Top Black Graduating Engineers for 1985.

Three nuclear engineering students have been awarded Institute of Nuclear Power Operations scholarships for the 1985-86 academic year.

Jess Gehin, Marysville; Bruce Letellier, Junction City; and Barry Shotts, Lenexa, each will receive \$1,500 for studies leading to a degree in power generation or related area. Funds are supplied by the nuclear electric utility industry.

Mark Verschelden, junior in indus-

trial engineering from St. Marys, has been selected by the National Society of Professional Engineers for a WISE internship. Verschelden will spend the summer in Washington, D.C., studying the legislative process.

For the fourth year in a row, the K-State chapter of Associated General Contractors has been named the top chapter in the nation. The approximately 150-member group competed for the honor with 107 other chapters across the nation. The K-Staters, all students in construction science, have been involved in numerous community service projects, a major factor in consideration for the award. Merrill Blackman is faculty advisor.

Phi Eta Epsilon, established at K-State as the first national architectural engineering society, inducted itself in formal ceremonies recently as Alpha Chapter. A charter has been granted to the University of Kansas as Beta Chapter. Other schools also are being considered for membership, said Charles Bissey, faculty advisor.

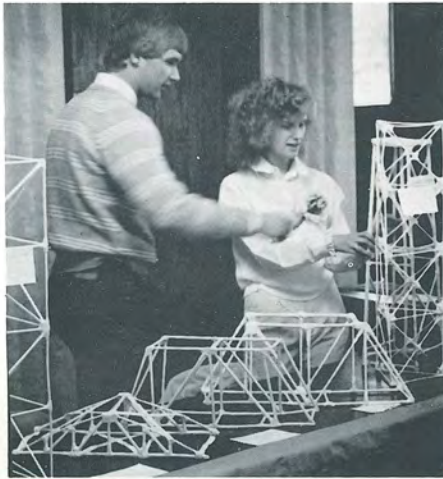
Teresa Emley, senior in construction science from Manhattan, won first place among students from 16 universities in an essay contest sponsored by the national Associated General Contractors. Topic of the essays was professionalism.



Open House 1985

Awards

Old Brick: Agricultural Engineering
Best Department: Agricultural Engineering
Best Open Class Display: Nuclear Engineering
Best Limited Class Display: Construction Science



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