

K-STATE ENGINEERING

impact

NEWSLETTER

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U.S. Sen. Nancy Landon Kassebaum cut the ribbon which officially began K-State's Open House. On her right is Donald E. Rathbone, dean of the College of Engineering.

BIG \$ TO ENGINEERING GRADS

Starting salaries for KSU engineering students graduating this past spring with B.S. degrees were between \$18,000 and \$22,000 a year, according to **Donald E. Rathbone**, KSU dean of engineering.

A year ago the low end of the range was around \$16,500 or about \$1,500 less.

Rathbone describes the demand for new engineers as "excellent, possibly the best ever. It has always been good. But this year, the situation is almost unreal. A KSU engineering graduate practically has an unlimited choice of jobs this year."

Rathbone said the strong demand for engineering graduates has posed a problem for the College of Engineering's graduate program leading to M.S. and Ph.D. degrees. "We're finding it difficult to compete with industry for our own graduates."

Engineering enrollment at KSU in the fall of 1979 was almost 2,200 students, an all-time record.

ROBERT DAHL NAMED DEPARTMENT HEAD AT K-STATE

Robert E. Dahl, who has been on the faculty of the Department of Architectural Engineering and Construction Science at KSU since August, 1976, was named head of that department, effective July 1. Dahl is now the administrator for a department with 334 undergraduate students and nine faculty members.

The appointment of Dahl, who was an area engineer for 21 years for Duckwall Stores Company, Abilene, Kan., prior to joining the KSU faculty three years ago, was announced by **Donald E. Rathbone**, KSU dean of engineering.

"Robert Dahl has an extensive background in private practice in Architectural Engineering and Con-

(more on Open House, page 7)



Dahl, cont'd.

struction Science. He is well known in the construction industry throughout the state. Professor Dahl is highly regarded by students and faculty in the department and is regarded as an excellent teacher. I am pleased to announce his appointment as department head," Rathbone said.

Dahl succeeds **Eugene Thorson**, who has reached the mandatory retirement age for administrators. Thorson, who has been on the K-State faculty since 1948, will continue to teach in the department.

The new KSU department head has taught in the areas of construction management and systems design. He was a research assistant in Applied Mechanics and an instructor in Civil



Dahl

Engineering at KSU in the early 1950s while working on his M.S. degree in Structural Engineering, which he received in 1954. He earned his B.S. degree in Architectural Engineering at K-State in 1951.



Dr. Bob L. Smith, professor of CE, guided the preparation of the report, "Practical Highway Esthetics," published this year by the American Society of Civil Engineers. The ASCE Committee on Geometric Design of Highways was responsible for preparing the content.

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Dean of the College
Dr. Donald E. Rathbone
 Associate Dean of the College
Dr. Ted O. Hodges
 Impact Editor
Ceryl May

IMPACT SPOTLIGHTS

--Eugene Thorson



By **Todd Sherlock**

K-State has many people associated with the University to be proud of, but none more so than the Head of the Department of Architectural Engineering and Construction Science, Professor **Eugene Thorson**. Professor Thorson has been associated with KSU since 1948 and stepped down as department head this past summer.

This past May Thorson was given a special appreciation award by the 360 students enrolled in the curriculums.

"I was all alone when I started," Thorson recalls. "I was originally hired as an architectural engineering professor. At that time I was the only engineering professor in the Department of Architecture."

Thorson explained enrollment at K-State grew through the years and gradually more professors were added to the department. Architecture was in the department of engineering until 1963, when it broke off and became a separate college. In 1964 Thorson was instrumental in forming the Department of Construction Science. In 1975, the Department of Architectural Engineering and Construction Science transferred back to the College of Engineering.

Thorson said the department continues to grow despite a lowering university-wide enrollment picture.

"Since returning to Engineering, we have grown tremendously. We have the biggest freshman class this fall in architectural engineering since post World War II days," Thorson said.

Thorson sees the trend for architectural engineers and construction science majors to continue to grow.

"Statistics have shown a need for these kinds of positions when the job markets gets tough," he said.

"I felt that there was a need for the skill level of architectural engineers when I started teaching, and I still feel that way. The future looks great for graduates from our department."

Thorson reflected on his years at K-State. He said his biggest feeling of accomplishment came while working with young people.

"The nicest part about being

associated here is the young people with whom I have worked. I have worked with twenty-year-olds for 30 years. The response from these young people has been very nice. I must say we have dedicated students and fine young people here at K-State," he said.

After stepping down as department head, Thorson plans to remain in the department and teach during the fall and spring semesters.

"When I retire for good, we'll spend five or six months a year in Minnesota and the rest of the year will be spent in Manhattan. We have four children in this region—we would like to stay."

"He has been an outstanding department head. He was the builder of that department, an excellent teacher throughout the years and he has established a national reputation both for himself and for the department," according to Donald E. Rathbone, Dean of Engineering.

Brian Carmichael, president of K-State's architectural engineering student society, had praise for Thorson as department head.

"He has run it (the department) effectively and has carried more than his share of the load with his teaching duties. I'm glad he will be around to teach, that will be a plus for us," Carmichael said.

Thorson has received many awards and recognitions throughout the years. Among them is included a recognition for contributions to the American Institute of Constructors in the development of the American Council for Construction Education.

Thorson is a member of several honor societies including Phi Kappa Phi, Sigma Tau, Tau Sigma Delta, Sigma Lambda Chi, and several professional and education related organizations. He has been a registered engineer since 1947.

Professor Thorson graduated from the University of Washington, Seattle, with a B.S. in Civil Engineering. Before graduation, he worked for the U.S. Coast and Geodetic Survey, in geodesy and hydrography. After graduation he worked for Boeing Aircraft Co., the Bureau of Yards and Docks and Kellogg Corporation.

DEATHS



State Sen. (Ret.) Donald Christy (center) Scott City, Kan., has retired from the Engineering Advisory Council after 20 years of service. He was honored by Dr. Donald E. Rathbone, right, dean of the College of Engineering who presented Christy with an attractive windmill artpiece designed by a Topeka artist. "The windmill is typical of the state of Kansas and a very appropriate gift for this Kansas gentleman," Rathbone said. M.A. Durland (left), Dean Emeritus of the College of Engineering appointed Christy to the Council.



Two seniors in Agricultural Engineering received the Outstanding Individual Display award for their "Chip Chucker" during the 55th annual Engineers' Open House. Pictured are (left) Brady Bauer, Manhattan, Kan., and Patrick P. Parke, Collyer, Kan., who received the award of the entire AgE design team.



Dr. Edwin C. Lindly, associate professor of Civil Engineering, received the College of Engineering Award of Excellence in undergraduate instruction at the 12th annual Engineers' Open House Awards Banquet. Lindly, who began teaching at K-State in 1949, received a \$500 prize and a plaque. He is pictured with K-State president Dr. Duane Acker (left), and Dr. Donald E. Rathbone (right), dean of the College of Engineering.



KSU SCORE Team—An eight-person K-State engineering team entered an energy efficient vehicle in the Student Competition on Relevant Engineering (SCORE) Aug. 15-18 in Milford, Michigan. The K-Staters competed with students from 38 universities across the U.S. and Canada. K-State won the SCORE Grand Prize competition in 1977. Pictured with the Fiat 850 c.c. engine which they have modified to work more efficiently are: Galen Kohn (left), senior in Mechanical

Engineering; Team Captain Dennis Wienck, senior in Mechanical Engineering; Dr. Hugh S. Walker, Mechanical Engineering professor and advisor; Joel Yocum, senior in Chemical Engineering; James Krone, senior in Mechanical Engineering; Robert Johnston, senior in Mechanical Engineering; Darryl Drayer, junior in Nuclear Engineering; Robert Smith, senior in Mechanical Engineering; and Kathy Perkins (seated front), senior in Civil Engineering.

Rollo Evans Venn, 76, a retired Oklahoma State University mechanical engineering professor and vice dean emeritus of the OSU College of Engineering, died Jan. 14 following a lengthy illness.

Born Oct. 20, 1902, in Emporia, Kan., Venn received his B.S. degree in mechanical engineering in 1927 and an M.S., also in mechanical engineering, in 1934, both from Kansas State University.

From 1927 to 1929, Venn worked in California, then came to OSU (then Oklahoma A&M) as an instructor in mechanical engineering. He became an assistant professor in 1936.

Earl L. Sitz, 75, an emeritus professor of Electrical Engineering at K-State, died of an apparent heart attack in Manhattan March 12.

Sitz was born at Davenport, Iowa, Feb. 28, 1904. He joined the KSU faculty in machine design in 1927 after earning a B.S. in electrical engineering from Iowa State Univer-

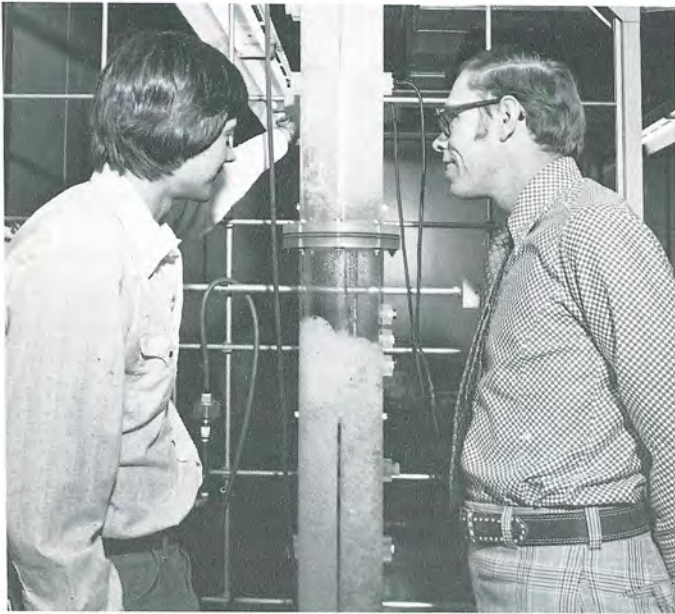


Sitz

sity and in 1928 transferred to the Department of Electrical Engineering. He earned an M.S. from KSU in 1932 and was promoted to assistant professor in 1941, to associate professor in 1946 and to professor in 1948.

Sitz remained a member of the KSU Department of Electrical Engineering faculty until 1969, except for three years during World War II when he was on leave to work as a design engineer with Westinghouse Corporation. He also taught a semester at Michigan College of Mining and Technology in 1948.

He was a fellow and past chairman of the Kansas City Section of the American Institute of Electrical Engineers (now Institute of Electrical and Electronic Engineers), and a member of the American Society for Engineering Education, Eta Kappa Nu, Sigma Tau and Phi Kappa Phi. He was co-author of a widely used textbook, *Basic Theory in Electrical Engineering*, and was a registered professional engineer in Kansas.



Pictured are Mark Orazem (left), graduate research assistant, and Larry E. Erickson, professor of Chemical Engineering. They are conducting research on the oxygen transfer rates and efficiencies in airlift towers. Airlift towers are used by the fermentation industry to produce such products as bakers yeast, simple cell protein and pharmaceuticals.

RESEARCH RESULTS



Nasir Ahmed, professor of Electrical Engineering, is conducting research to improve the performance of sensors for intrusion detection systems used on buried cable. He is assisted by Joe Fogler, Manhattan, Kan., graduate student in Electrical Engineering who is working with a graphics display terminal.



Researchers at K-State are studying thermoluminescent dosimetry (TLDs), a method of detecting and measuring the energy imparted per unit mass to matter by the interaction of radiation. Pictured are Don Hanna, graduate student, and Dr. Gale Simons, associate professor of Nuclear Engineering with the photon counter used to study the TLDs.



This chalk drawing is a representation of the current research efforts of Buhler's John Hein to find ways to reduce the wear on diamond drill bits commonly used in drilling for oil. Hein, who has completed an M.S. degree at Kansas State University, Manhattan, worked under the guidance of Dr. Fredric C. Appl of the K-State Mechanical Engineering faculty.



Jon Held, graduate student in Mechanical Engineering, holds a calibration cell containing a known particle size distribution and concentration used to test the accuracy of the instrument he

designed and built. The instrument Held built as part of his master's thesis research is being used by the U.S. Grain Marketing Research Center to study grain dust explosions.

The mystery of grain dust explosions in elevators is being studied by scientists and engineers at the U.S. Grain Marketing and Research Center in Manhattan.

Jon Held, a graduate student in Mechanical Engineering at KSU, is working at the research center as part of his graduate program in the KSU Department of Mechanical Engineering.

Held is helping to develop an instrument which measures grain dust particle size distribution and concentration. "This will allow us to make measurements of dust concentrations in conducting laboratory explosion experiments," Held said.

"What I'm doing is using a theory developed in 1955 by **J.H. Chin** of the University of Michigan. It uses forward light scattering by small particles which involves shining a laser beam through a dust dispersion. This refracts the light so that we can measure the particle size distribution from the light intensity at different angles.

"The concentration is then measured by extinction, the percentage of light absorbed by the cloud," he said.

The steps involved in the development of the instrument will constitute Held's master's thesis which he currently is writing. His major professor is **Hugh S. Walker**,

professor of Mechanical Engineering.

It is hoped the instrument being developed by Held will have application in other fields involving fine particle research activities.

Possible areas of potential future use might be for research on paint, aerosol generators and coal dust.

This instrument measures particle sizes varying from 3 to 100 microns. A micron is a unit of length equal to one thousandth of a millimeter. "A small grain of sand is about 200 microns in diameter," he added.

The biggest problem Held encountered in this project was in obtaining optical sensors or photo transistors in the correct intensity range and size. The desirable sizes were unavailable. "They were either too small or too large," he said.

POT POURRI



**By Donald E. Rathbone
Dean of Engineering**

You will soon be receiving a mailing from our Foundation office (previously called the Endowment Associa-

tion) asking for your financial support. The reasons listed by the College of Engineering for needing your support are many, with the major concerns being scholarships, fellowships, student activities and student design competitions. If you can help, please do (and indicate engineering on your response). It would be most appreciated.

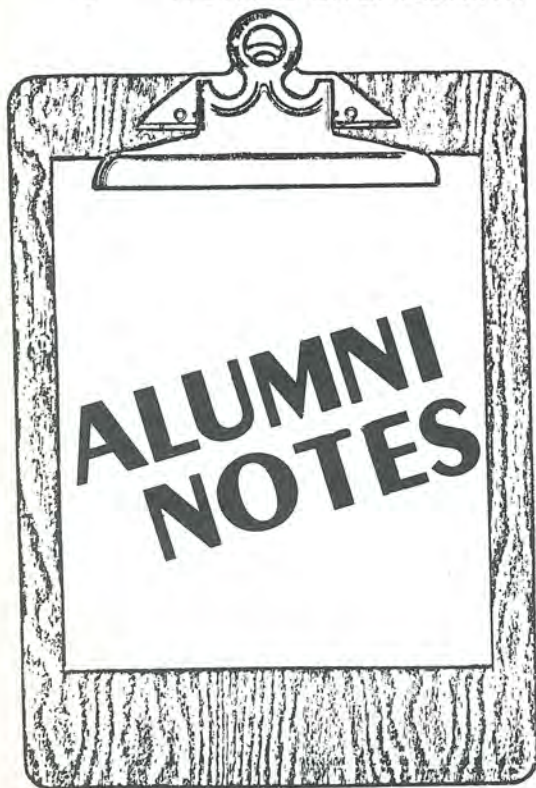
The College has recently experienced tremendous growth and success in almost all areas. Our undergraduate enrollments are at an all-time high, our research program is being supported at an unprecedented level, and we will soon become much more active in engineering extension. Our students have a success ratio in student chapter and student design competitions that is truly outstanding (the Endowment mailing, that I referred to previously, mentions many of our awards). I frankly believe that even with the large number of students, the quality of our programs has never been better.

We do, however, have an "Achilles heel." We are having trouble attracting "our fair share" of those graduating in engineering with a BS degree for our graduate programs. The companies are understandably very competitive since industry's needs are so great. Those of us in teaching would also like to perpetuate our profession. So how do we solve this dilemma!

One idea I have to improve their situation is an integrated BS-MS program where the student decides in his junior year at K-State to get not only a BS but also a MS in engineering. This program:

- provides for early planning for the students' MS course work
- gets the students more involved in research and/or design projects during their senior years
- encourages the students to spend their last two summers in industry
- has the College cooperating with industry in developing mutually acceptable research or design projects
- requires industry to support the student financially during the student's senior and post-graduate years and during the summers

What do you think—A workable idea? And will it be supported by industry?



A prominent 1959 KSU civil engineering graduate was installed as president of the Kansas Engineering Society at the 64th annual meeting of KES June 1 at KSU.

Charles D. May, a professional engineer associated with the Salina (Kan.) architectural and engineering consulting firm of Wilson & Company, took over as president of the state's engineering society from **Robert R. Snell**, professor and head of civil engineering at KSU.

May will serve a one-year term. May is the third consecutive K-State civil engineering graduate to head the society. The president for 1977-78 was **Theodore C. Farmer**, Butler County engineer, El Dorado, Kan. He was a 1950 civil engineering graduate, while Snell was a 1954 graduate.

One of K-State's most prominent engineering graduates has been elected to a two-year term as chairman of the College of Engineering Advisory Council.

Raymond A. Adee, Newton, Kan., a 1947 mechanical engineering graduate, succeeds **Robert W. Exline**,



Exline

president of Exline, Inc., Salina, Kan., as chairman of the council of 20 public-minded citizens prominent in

engineering education and industry.

"Mr. Adee is a community leader, an outstanding engineering executive, and a great supporter of the College of Engineering and the University. As a student at K-State, he was an outstanding student and a track star under **Ward Haylett**. I am pleased that Mr. Adee has agreed to serve in the position," said **Donald E. Rathbone**, KSU dean of engineering, in announcing Adee's election.

Adee, who served as vice chairman of the Council the past two years, has been on the Council since 1974. He is vice president of product planning and research for the Hess on Corp., a farm equipment firm which had sales of \$180 million last year.

New vice chairman of the Council is **Loyal M. Van Doren**, a 1939 civil engineering graduate who is a partner in the Topeka, (Kan.) engineering consulting firm of Van Doren-Hazard-Stallings. Van Doren received the KSU Distinguished Service Award in Engineering in 1971. **Ted O. Hodges**, KSU associate dean of engineering and director of the University's Engineering Experiment Station, continues as secretary of the group.

Jerry Moran, 1979 Electrical Engineering graduate, was named winner of the George C. Marshall ROTC Award sponsored jointly by the U.S. Army and the George C. Marshall Research Foundation, Lexington, Va. The award is presented to the Outstanding Senior Cadet in each of the 275 college and university Army ROTC detachments across the country. The award recognizes leadership ability and academic excellence.

Gordon Goering, a 1945 Chemical Engineering graduate, is vice president of the Refining Division, Phillips Petroleum Company, Bartlesville, Okla.

Dr. Robert C. Iotti, Englishtown, N.J., a 1964 graduate who received his Ph.D. in Nuclear Engineering from K-State in 1970, is the co-recipient of the best paper award of a division of the American Nuclear Society. He is associated with Ebasco Services, Inc., New York City.



Two of the oldest K-State College of Engineering alumni were recognized at the Open House Alumni Luncheon. Pictured are Lawrence D. McDonald (left), Kansas City, Mo., a 1972 Mechanical Engineering graduate, and Charles A. Frankenhoff, Scarsdale, N.Y., a 1918 Mechanical Engineering graduate.

Two Kansas State University chemical engineering graduates have assumed new positions with the Hawkeye Chemical Company, Clinton, Iowa.

L.B. Patterson, a 1947 graduate has been elected senior vice president and a member of the board of directors. He was previously vice president of manufacturing. A member of the American Institute of Chemical Engineers, Patterson is listed in Who's Who in Engineering and Who's Who in the Midwest.

Morris E. Sweat, a 1964 graduate, has been elected vice president of production. He began working for Hawkeye in 1974 as the production manager.



The K-State Distinguished Service Awards were presented to three outstanding KSU alumni in recognition of their contributions to the field of engineering at the 12th annual Engineers' Open House Awards Banquet March 31. Pictured are K-State president Dr. Duane Acker (left); Bruce Roberts, executive partner of Wilson

and Company Engineers and Architects, Salina, Kan.; Charles A. Frankenhoff, retired Chairman of the Board of Kenite Corporation, Scarsdale, N.Y.; Vinton Carver, Chairman and Chief Executive Officer GRT Corporation, Sunnyvale, Cal.; and Dr. Donald E. Rathbone, dean of the College of Engineering.

OPEN HOUSE



The annual open house relay began at the K-Hill southeast of Manhattan and ended on the steps of Seaton Hall as students representing all engineering curriculums pass the torch along the three mile course. Steven Berry, senior in Agricultural Engineering, ran the last leg of the relay and lit the torch which officially opened the festivities.



Architectural Engineering students did some clowning during the open house parade. Leading the parade are

two seniors, Larry Kempke (left), and Mark Owens.



John Sharp, Agricultural Engineering open house chairman, accepts the Open House Trophy for their departmental displays from Margaret Yaeger, Engineering Open House Chairman, at the 12th annual Engineers' Open House Awards Banquet.



The Master of Ceremonies Deborah Nicklaus, senior in Industrial Engineering, welcomed engineering students, faculty and guests to the 12th annual Engineers' Open House Awards Banquet.



St. Patrick and St. Patricia reigned over open house activities. Steve Soldner, senior in Engineering Technology and starting center for the KSU varsity basketball team, and Page Puckett, junior in Mechanical Engineering were elected by the students in the College of Engineering.

NEW FACES

The appointment of 10 new faculty members in the KSU College of Engineering has been announced by Dr. Donald E. Rathbone, dean. They are:

Dr. B. Terry Beck, assistant professor of mechanical engineering, from Oakland University, Rochester, Michigan.

Dr. Lawrence E. Ehlers, associate professor of mechanical engineering,

from the University of Nebraska, Omaha.

Dr. James Steichen, assistant professor of agricultural engineering, from the University of Missouri, Columbia.

Dr. Harry L. Valenta, assistant professor of electrical engineering,



Beck

from the Polytechnic Institute and State University, Blacksburg, Virginia.

Dr. Alvin E. Willems, assistant



Steichen

professor of industrial engineering, from McPherson College.

Dr. Alexander P. Mathews, assistant professor of civil engineering, from Williams and Works, Grand Rapids, Mich.

Dr. Ekramul Haque, assistant professor, agricultural engineering, from Trico Industries, Inc., Kansas City, Kan.

Donald A. Suderman, instructor, agricultural engineering, from graduate work at K-State.

R. Wes Jones, instructor, Architectural Engineering and Civil Engineering, from Daniel International, Burlington, Kan.

John Schmalzel, instructor, Electrical Engineering, from graduate study at KSU.



The gun sounded the morning of April 28 for the start of the sixth annual canoe races at Tuttle Creek Reservoir, north of Manhattan. William Blair, KSU instructor of Health, Physical Education and Recreation, refereed the races. Sitting is Nelson L. Jordan, one of the time keepers.



Jan Laughlin, Manhattan, Kan., and Kathy Perkins, Howard, Kan., students in Civil Engineering at K-State, receive T-Shirts for outracing other women engineers to win the women's race.



K-State civil engineers won the best constructed canoe award for the second consecutive year at the sixth annual concrete canoe race. Pictured are (left) Albert Tharnish, Junction City, Kan.; a judge, Carl Crumpton, civil engineer for the Kansas Department of Transportation, Topeka; and Charlton Moorman, Manhattan, Kan.



Two K-State faculty got their chance to race the "Paddlestar Wildcatca" but lost to the KU Civil Engineering faculty, Jerry Zovne (left) and Harry

Knostman row to land after the faculty race in the sixth annual concrete canoe race April 28.



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 Kansas State University
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