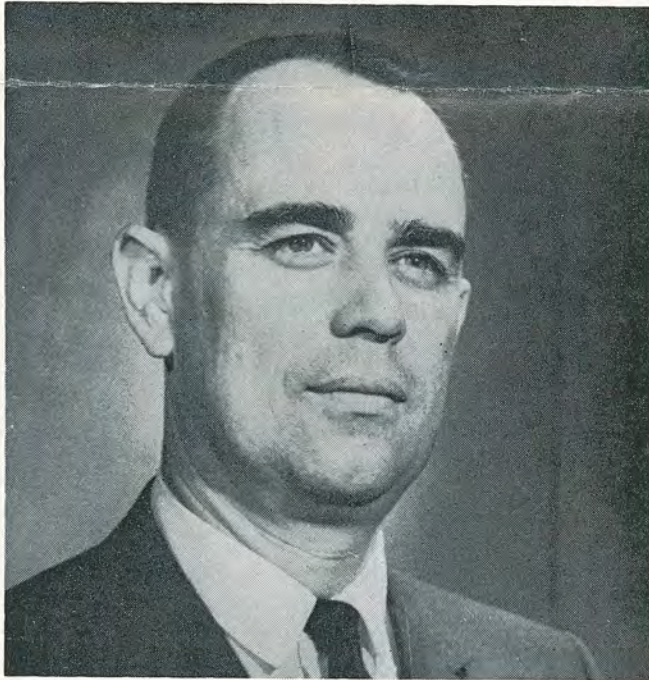


Ralph Nevins Tapped as New Dean



DR. RALPH G. NEVINS . . . Dean of Engineering

Cecil Best to Assist Nevins In Associate Dean's Position

A highly qualified professor of applied mechanics who has extensive experience as a researcher and engineering educator at Kansas State University, Dr. Cecil H. Best, has been named associate dean of engineering at KSU.

In his new assignment, Dr. Best will assist the dean of engineering in all administrative areas and in developing the engineering curricula at Kansas State University.

"I am very pleased to have Dr. Best join the staff as my associate," commented Dean R. G. Nevins. "His background and experience will be invaluable in developing stronger educational and research programs that will continue to meet the needs of engineering students and faculty in the years ahead."

Since 1961, Best has been a faculty member of the College of Engineering, teaching mainly engineering materials courses. He has also carried on research programs dealing with concrete for the National Science Foundation and the U.S. Department of Agriculture.

A licensed professional engineer in Kansas, Best earned three degrees from the University of California and was named a Raymond Earl Davis Fellow in civil engineering while a student. In 1960, he was awarded a post-doctoral fellowship by the Royal Norwegian Council for Scientific and Industrial Research and conducted his research at the Technical University of Norway in Trondheim, Norway.

An engineering educator and administrator who at the age of 41 already has built an international reputation in the field of environmental engineering, Dr. Ralph G. Nevins, has been selected as the new dean of the Kansas State University College of Engineering. He assumed his new responsibilities September 1.

A native Kansan and a member of the K-State faculty since 1948, Nevins has served as head of the department of mechanical engineering, director of the half-million-dollar K-State Institute of Environmental Research and as Kansas Power and Light Company Distinguished Professor of mechanical engineering.

Nevins succeeds Dr. Paul Russell, who asked to be relieved of administrative duties so that he might return to teaching as a professor at Arizona State University, Tempe.

"We were fortunate to have on our faculty a man with such outstanding qualities for the deanship as Dr. Nevins," commented K-State President James A. McCain in announcing the appointment. "He has demonstrated unusual competence as a teacher, scientist and administrator. The Institute for Environmental Research, which he established, is a recognized national center in the field of air conditioning, heating and refrigerating engineering."

McCain added that Nevins had turned down attractive offers from half a dozen other universities in recent years to remain in Kansas.

Under Nevins' leadership, the department of mechanical engineering and the Institute for Environmental Research have acquired many major grants. Early in July, KSU was the only educational institution in the United States selected to develop a new graduate-level curriculum in bio-environmental engineering. The Public Health Service will provide more than a quarter of a million dollars over the next five years for this program.

Since then, the Department of Defense has announced that K-State's Institute for Environmental Research has been selected to receive one of the 50 grants planned in a \$19.6 million "Project Themis" research effort.

Nevins was also instrumental in securing the transfer of three Atlas Missile sites for his department when these were abandoned by the U.S. Air Force. One of these, an Atlas "E" site near Wamego, has been designated the KSU Mechanical Engineering Department Aerospace Laboratory and will provide important research capabilities not previously available at K-State.

Nevins is a member of 11 professional and honorary societies and is an officer in many of them. He has been especially active in the American Society of Heating, Refrigerating and Air Conditioning Engineers. He is a former ASHRAE director and served as their representative on the National Research Council's Division of Engineering and Industrial Research.

He is the regional representative on the national nominating committee of the American Society of Mechanical Engineers (ASME) and is on the editorial policy committee of the heat transfer division of ASME. He also is a member of the ad hoc accreditation committee for the Engineers Council for Professional Development, the accrediting group for engineering schools.

Nevins served as the first chairman of the new Midwest Section of the American Society for Engineering Education and is secretary of the Council of Sections West for ASEE.

Government Names K-State To Receive Themis Grant

Kansas State University has received a major grant for defense-related research.

One of 50 grants in a \$19.6 million Department of Defense (DOD) research effort called Project Themis has been awarded to K-State's Institute for Environmental Research.

Announcement of the K-State award was made by the Department of Defense through the office of Sen. Frank Carlson (R-Kan.).

There were 479 proposals from 163 of the nation's institutions submitted for the Project Themis grants. The proposals were evaluated and 107 of the original proposers were asked to submit more in detail.

"It is a great tribute to the cooperation of our staff members that this proposal was accepted," commented Dean Ralph G. Nevins. "It is indicative of the growth within the University initiated to cope with expanding technology."

The work, under direction of Dean Nevins, is being carried out by a team of K-State engineers, scientists and home economists working in association with the Institute for Environmental Research.

The specific projects proposed, designed to study man's performance and protection in altered environments, will, in many cases, be extensions of current research programs.

Project Themis is designed to fulfill research needs of the DOD and at the same time strengthen the nation's universities, increase the number of institutions performing research of high quality, achieve a wider geographic distribution of research funds, and enhance the nation's academic capability in science and technology.

Purpose of the research at KSU is to provide DOD with basic data applicable to the support and performance of men confined in environments such as submarines, space stations, spacecraft, missile-launch centers, and other confined areas.

Many aspects of the environment are being considered in the

research effort, including temperature, noise, lighting, clothing, bacteria, dust, size, shape, color, vibration, etc.

KSU's initial effort in the work involves the following areas:

-Use of spot cooling or heating to maintain a man's ability to perform under difficult conditions.

-Distribution of air in confined spaces.

-Human performance in altered environments.

-Physiological and behavioral effects involved with long-distance trips, such as would be experienced on a space voyage.

-Effectiveness of water-cooled headgear worn under hot-weather conditions.

-Effects of environment on bacterial growth and survival in various footwear materials.

-Animal reactions to environments with comparisons related to man.

The departments involved include mechanical, chemical and industrial engineering, psychology, pathology, physiology, and clothing and textiles.

It is a major objective of the project to integrate the results and apply them to present and future defense-related problems. In addition, many of the findings will be directly applicable to non-military problems.

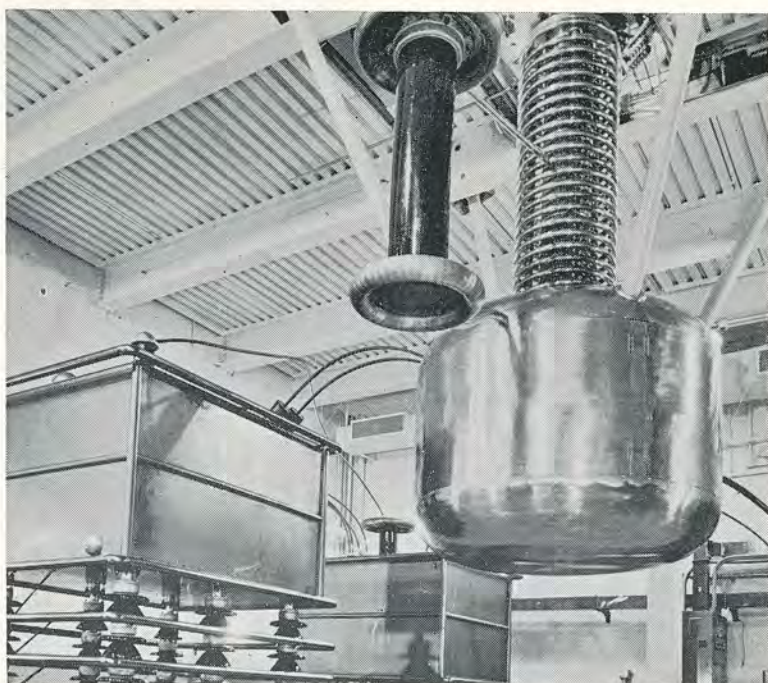
The contract provides for DOD technical advisers to attend campus review sessions, and the KSU staff is expected to be called upon to share its knowledge with DOD research teams at federal laboratories and installations.

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HEART OF K-State's new accelerator facility will be the dome-shaped accelerator (right) and the large electrical generators (pictured as originally installed in the Los Alamos Scientific Laboratory, Atomic Energy Commission). Additional elements in the system, located on the floor above the accelerator, include a giant magnet, consoles, and recorders.

Cockcroft-Walton Accelerator To Expand Research Program

A 600,000-volt Cockcroft-Walton accelerator, valued at over \$175,000, will soon be acquired by the College of Engineering at Kansas State University from the Atomic Energy Commission (AEC) to expand graduate research programs in the study of solid-state electronics and the material sciences.

The accelerator, declared surplus by the AEC, was used by the Los Alamos, N.M., Scientific Laboratory until January, 1967. To be housed in Seaton Hall, the new facility was made available to K-State on a three-year loan basis so that it could be used to benefit educational and research programs.

A total of \$45,000 is being funded by the University to install and develop the facility within the College of Engineering.

"To my knowledge, no other engineering college in the region possesses a valuable instrument of this type for engineering research," Dean R. G. Nevins pointed out.

The accelerator provides a powerful tool for producing semi-conductors while maintaining complete control of the process, Dr. W. W. Koepsel, electrical engineering department head,

said. He added the accelerator will be used to conduct research in "implantation" and "channeling," by accelerating charged particles or ions. (Ions are charged particles which result when one or more electrons are removed from an atom.) These ions can be produced from every chemical element, starting from hydrogen to uranium.

"This technique involves introducing an impurity into an 'intrinsic' or pure material in order to produce a semi-conductor such as a transistor, diode, or other solid-state device," Koepsel explained. "This is accomplished with the accelerator using 'ionic bombardment' rather than conventional thermal-diffusion processes."

Ions produced in the ion source can be accelerated to an energy level of 600 KeV, explained Dr. Erich O. Hechtel, assistant professor of electrical engineering, who will assist in directing the installation.

"With such an excellent research facility available for work in semi-conductor and solid-state research," Koepsel summarized, "I anticipate the accelerator will provide a great impetus to attracting key research personnel to Kansas State University."

Profs Conduct Diversified Research

By Dean Kenny

Faculty members of the chemical engineering department at Kansas State University aren't satisfied with only producing high-quality engineering graduates that command some of the highest starting salaries in industry.

These restless professors also conduct a diversified engineering research program amounting to more than a half-million dollars in grants and contracts from outside agencies.

Last June demand for chemical engineers from K-State reached an all-time high. An average of \$733 per month was offered to B.S. degree holders. Industry offers increased to \$872 and \$1176 per month for M.S. and Ph.D. graduates—a tribute to the high quality of teaching and research conducted by the department.

Receive Grants

Since June, the aggressive nine-member staff has been awarded a variety of new government-aided projects involving desalting sea water, heat transfer, thermodynamics and systems engineering studies.

"A strong research program greatly aids in developing a realistic undergraduate program," notes Dr. William Honstead, chemical engineering department head. "Research keeps our professors up to date with the latest technology and improves the quality and quantity of our graduate program by increasing the support available to our students."

With laboratories and classrooms for 120 undergraduates and 30 graduate students, the department has eight professors with doctoral degrees. Department members, in addition to Honstead, are Dr. Richard G. Akins, associate professor; Dr. Chen-Yen Cheng, visiting assistant professor from Formosa; Dr. Larry E. Erickson, assistant professor; Dr. L. T. Fan, professor; Raymond C. Hall, assistant professor; Dr. Herbert T. Bates, professor; Dr. Benjamin G. Kyle, professor, and Dr. John C. Matthews, assistant professor.

In desalination research, four grants totaling more than \$340,000 have been awarded to the department by the Office of Saline Water, Washington, D.C. Several novel and exciting techniques are being investigated by Akins, Fan and Cheng to simplify and reduce the cost of the desalination process as well as develop the best, or "optimal," system. Three of the research efforts are based on unique approaches originally developed by Dr. Cheng.

Study Waste Systems

The study of waste treatment systems is another major research area for Fan, Erickson and Cheng. Two new studies, funded for almost \$92,000, are directed toward optimizing the design of a step aeration system and a waste treatment system. Fan believes these studies will aid engineers who design waste treatment processes to reduce costs by using more efficient designs.



DEMONSTRATING A TEST SET-UP used to study flow bi-refringence in a current engineering research project is Dr. Richard Akins, associate professor of chemical engineering (right foreground). Faculty members of the department of chemical engineering observing the demonstration include, from left, Dr. William Honstead, department head; Dr. L. T. Fan, professor; Dr. John C. Matthews, assistant professor; Dr. Benjamin G. Kyle, professor; and Dr. Herbert T. Bates, professor.

After optimal designs are formulated, pilot scale models will be developed to verify the results.

Heat transfer studies occupy the attention of Dr. Matthews for the National Science Foundation (NSF) and the National Aeronautics and Space Administration (NASA). Dr. Fan, in collaboration with C. L. Hwang of the mechanical engineering department, is also working in this area on a contract for the Air Force Office of Scientific Research (AFOSR). These contracts total almost \$35,000.

Another heat transfer study is being conducted for NSF by Dr. Akins. Totalling \$42,700, the study will experimentally investigate heat transfer by natural convection in liquid mercury. Akins explained that natural convection occurs when fluids are heated and expand, and flow is initiated because of the change in density. "This research has far-reaching applications for reactor cooling systems and other high-temperature heat-transfer processes," he said.

Kyle Continues Project

Dr. Kyle has received the continued support of \$20,600 for an investigation into "Thermodynamics of Partially Miscible Systems." A continuation of earlier research, the study involves the determination of how solutions behave during a vaporization process.

Dr. Fan, who is the director of K-State's Institute for Systems Design and Optimiza-

tion, is also participating in one of the investigations of Project Themis. This contract was awarded recently by the Department of Defense (DOD) to Kansas State University. In one study, "Thermal and Physiological Effects of Localized Ventilation," systems engineering approaches will be used to determine a human subject's ability to perform in a confined area or space.

Direct 20 Grad Students

In addition to their own research and teaching, the chemical engineering staff members direct the research of more than 20 graduate students in a variety of areas. Graduate research includes studies in distillation, fluidization, streaming bi-refringence, vapor-liquid equilibrium, multi-phase heat transfer, dynamics of process systems and computing techniques.

In spite of poor laboratory and teaching facilities in a building constructed 65 years ago as a dairy facility, the chemical engineering department has developed a fine reputation for its teaching and research programs, according to Honstead. "Its work has earned the admiration of students and colleagues alike," he said.

To what does the chemical engineering department credit its success?

"To the high quality of faculty members who possess a professional and aggressive attitude toward creative effort," Honstead claims, "as well as a willingness to work as a team to encourage each other in independent research and study."

Newsworthy Notes

Dr. Ralph G. Nevins, dean of engineering at Kansas State University, Manhattan, has been nominated for the office of vice president of the American Society for Engineering Education and chairman, Council of Sections West.

+ + +

Douglas Stuart Clark, Campbell, Ky., and Ronald M. Kruse, Hays, have been announced as winners of \$250 Vulcan Materials Company (formerly Frontier Chemical Company) scholarships for the 1967-1968 school year, according to Harold W. Kennedy, director of the K-State Office of Aids and Awards.

+ + +

William J. Gates, Newton, has been chosen as the 1967 outstanding junior in mechanical engineering at Kansas State University, Manhattan. The selection was made by members of the mechanical engineering faculty.

+ + +

Five Kansas State University students majoring in industrial engineering have been awarded \$100 General Electric scholarships to recognize outstanding scholastic achievement.

The awards, announced by Dr. Frank Tillman, department head, went to two seniors, Gary Johnston, Prairie Village, and Robert G. Parker, Topeka; and to three freshmen, Carl D. Lindahl of Enterprise, Jonathan D. Spicher of Lindsborg and Mickey L. Stilson of Junction City.

+ + +

Leroy Dean Simmons, Russell, and Steve Alan Shilling, Westphalia, have been named the two outstanding Kansas State University engineering freshmen of 1966-1967.

+ + +

Mechanical engineering student Mark Sharp, Manhattan, recently received the American Society of Mechanical Engineers award from the Procter and Gamble Company.

+ + +

The award, a trip to the annual winter meeting of the ASME in Pittsburgh, Pa., was presented to Sharp because of his interest in graduate study.

+ + +

A Kansas State University freshman in nuclear engineering, Paul A. Lindahl, Overland Park, has been awarded a \$250 Natural Gas Pipeline Company of America scholarship for the current school year.

+ + +

A Kansas State University freshman from Jewell, John Crumrine, has been awarded the \$150 Boyd Family scholarship for the 1967-1968 school year, according to Harold W. Kennedy, director of K-State's Office of Aids and Awards.

Alumni! Do you know a boy who is interested in Engineering? If so, why not interest him in K-State Engineering?! Just write his name below and send it to the Dean of Engineering, Seaton Hall.

Name _____

Address _____

City _____

Age _____ Year in high school _____

Chemical Engineer L. T. Fan Named Distinguished Prof.

Dr. L. T. Fan, director of the Institute for Systems Design and Optimization and professor of chemical engineering, has been designated as the Kansas Power and Light Company Distinguished Professor.

The distinguished professorship, established in 1963, was originally held by Dr. Ralph Nevins, who recently was named dean of the College of Engineering. Dr. Nevins said that the Kansas Power and Light Company contributed \$3,000 annually to the University to supplement the maximum salary available from state funds.

Dr. Fan, who has a notable international reputation in the fields of systems engineering, chemical reaction engineering and transport phenomena, has been cited "as one of the 10 most distinguished chemical engineers in America," University President James A. McCain said.

A native of Taiwan, China, and a member of the K-State faculty since 1958, Dr. Fan has authored more than 90 technical publications and has research competence in many diverse research fields.

Dr. Fan has co-authored two books describing his work on optimization techniques for use in chemical engineering and other industrial processes; he is currently writing several new monographs and books.

A 1951 graduate in chemical engineering from the National Taiwan University, China, Fan received his master of science de-

gree in chemical engineering from K-State in 1954. He continued advanced studies at West Virginia University and earned his Ph.D. in chemical engineering in 1957 and an M.S. degree in mathematics in 1958 while working as a research engineer with the U.S. Bureau of Mines.

An outstanding scholar, Fan was a Research Fellow of the Du Pont summer research program in 1959-1960, a Visiting Researcher at Cambridge University, England, and a lecturer at National Taiwan University during the Summer Science Seminar in 1966. He is a professional engineer in Formosa.

The Distinguished Professor currently has research grants in force from six government agencies totaling more than \$300,000. His studies involve research in systems engineering, desalination, heat transfer, and fluid flow and mixing.

Dean Nevins noted that Dr. Fan will assume his duties as the KPL Distinguished Professor immediately. Dr. Fan will continue his research interests and teaching in the College of Engineering.

The KPL Distinguished Professorship is one of seven distinguished professorships established at Kansas State University.

Schilling Institute Names

R. L. Gorton, R. Clack to Board

Two Kansas State University professors have been appointed to the advisory board of the Schilling Technical Institute, Salina, according to Dr. Ralph G. Nevins, dean of engineering.

Appointed for indefinite terms were Dr. R. L. Gorton and Dr. Robert Clack. Gorton will be working with the division of mechanical technology and Clack with aeronautics.

"For each of the curricula at the Institute," explained Gorton, "they have representatives from both industry and education in advisory capacities. We meet twice yearly with the department

head and members of the faculty and do what we can to guide them in development of their program, choice of textbooks, obtaining equipment, etc. There really are no definite duties—just help where we can."

The Institute, itself, lies somewhere between the trade school and the university approach, Gorton added. It provides students with a two-year technical training program that is not really skills training or the theoretical training provided by the university. "It is rather a practical training that enables the student to take jobs in a supervisory capacity," he concluded.