

OKCHE

SCHOOL OF CHEMICAL ENGINEERING AND MATERIALS SCIENCE THE UNIVERSITY OF OKLAHOMA

Historical Issue—Part I



*chemists with an instinct for engineering...
grow into chemical engineers*

by other engineering departments.

In addition to the course work, the completion of a thesis was necessary. According to the catalogue, the thesis was to be on some special engineering subject, or one could, upon the consent of the director of the School, take an additional engineering course. (The requirement of a thesis was dropped from the program by 1915.)

There had been a decrease in engineering enrollment, in all divisions, during this 1910-12 period. Dean Felgar offered two explanations. First, the demanding freshman-year curriculum frightened off many students, and second, the expense of the laboratory fees was prohibitive for some. The deposit for chemistry labs was \$10 apiece — quite a large sum for those days!

The directorship of the new School of Chemical Engineering automatically fell to the head of the chemistry department. (The School was a part of the chemistry department; it was not part of the College of Engineering.) Initially, this double respon-



The Engineering Building, dating back to 1909, is a familiar campus landmark that still sees service as the Engineering Laboratories.

sibility was taken on by Dr. Edwin C. ("Daddy") DeBarr, one of the four founding faculty members of the University. Dr. DeBarr actually wore three hats during these formative years: head of the chemistry department, director of the School of Chemical Engineering, and vice-president of the University.

In addition to the instruction given by Dr. DeBarr, many of the required chemistry courses were taught by an OU graduate, Dr. Guy Yandall Williams. Williams had entered the freshman class in 1902 after attending Enid High School. According to Roy Gittinger in his *The University of Oklahoma: A History of Fifty Years*, Williams "became so much interested in chemistry that he was asked to serve as lab assistant while still a student."

He received his B.A. in 1906 and was selected as an instructor in



Dean James Felgar

"In spite of his manifold duties in connection with the University, town and church, Dean Felgar is never too busy to listen sympathetically to the hundreds of engineering students who seek his help and advice on all sorts of problems — religious, social, moral and financial as well as educational." (*Sooner* magazine, April 1931)

chemistry for the next fall term. After teaching for several years, he went on to the University of Illinois to complete his Ph.D. in 1913. "Guy Y" resumed his professorship at OU in 1914 and was a major figure in the establishment of chemical engineering as a separate degree program.

"Practically a Military School"

Guy Y's return to campus in 1914 was overshadowed by a cataclysmic world event. War was declared in Europe.

Enrollment in engineering increased greatly, and by the time the United States entered the war, the number of students in engineering had swelled to 228.

The war interfered with the normal University procedures in a number of ways. Many professors were on leaves of absence. The Board of Regents in the school year of 1917-18 required all male students to take military training during their first two years. Indeed, by the time the armistice was signed, it was said that the University was "practically a military school."

The College of Engineering responded to wartime needs in a



Professor Guy Y. Williams

A campus folktale is that Guy Y kept students on their toes by entering the classroom via the transom, and by often standing on his head atop the desk.

number of fashions. The Engineers' Reserve Corps was organized, and the College offered "special courses in radio engineering and wireless operating, gas engine work, military topography, and oxyacetylene welding for students who expected to enter military service."

Perhaps due to the great expansion of American chemical industries in the war period and the concomitant demand for more chemical engineers, in 1918-19 the School of Chemical Engineering radically altered its program. Now a candidate for a bachelor of science degree could choose one of three specializations: metallurgical chemistry, petroleum technology, or sanitary chemistry.

(This move toward specialized chemical engineering curricula to prepare the student for a particular field was a national tendency during this time. This educational approach was eventually abandoned, since it provided too limited an education in a profession demanding knowledge of a broad spectrum of industrial operations and needs.)

The program in metallurgical chemistry was under the direction of Guy Y. Williams, back on campus for yet another period, after serving in the military during World War I.

Professor Fred Warde Padgett headed the program in petroleum technology. Padgett had been appointed associate professor of

(continued on page 6)

April 1892. It was three years since the run had opened the Territory of Oklahoma. On a 40-acre site half a mile southwest of the thriving little city of Norman (population 1,218) work was under way on a building which the newspaper was already calling the state university.

With the process of construction and landscaping going on, the Board of Regents made a trip to Arkansas City, Kansas, to examine the heating system in use in a school building in that town. There they met the superintendent of schools, David Ross Boyd. Two months later, he was offered the presidency of the University of Oklahoma at a salary of \$2,400 a year.

On September 15, 1892, the University welcomed its first 57 students — tuition was free for residents of the territory. The three faculty members whom Boyd had recruited during the summer were William N. Rice (ancient languages, literature); Edwin C. DeBarr (chemistry, physics); and French S. E. Amos, (English, history, civics). To complete the teaching staff, President Boyd took the title of professor of mental and moral science. Since the university building was still not ready for occupancy, classes met in an empty building on West Main.

Professor Rice noted of these beginnings: "Up the steps of the old stone building come the university students to enroll. All are very quiet, some painfully bashful, and not a few extremely awkward. Most of them are the unspoiled products of pioneer life, without pretension and without conventionalism. But, best of all, they are in dead earnest and feel they are facing a great opportunity."

The three-story building on campus was ready the following year. According to the Norman Transcript, it was "not alone a picture of beauty and symmetry, but a model of art, an encomium upon the architect and a living panegyric upon the skill of the contractor."

Not everyone shared this vision of "beauty and symmetry." Four years later, when Professor Vernon Parrington arrived to teach English and modern languages, he recorded these impressions:

"I had never been in Oklahoma, and as I got off the train that September day, what lay before my eyes was disheartening. The afternoon was insufferably hot and dry. A fierce wind was blowing from the southwest and great dust clouds —

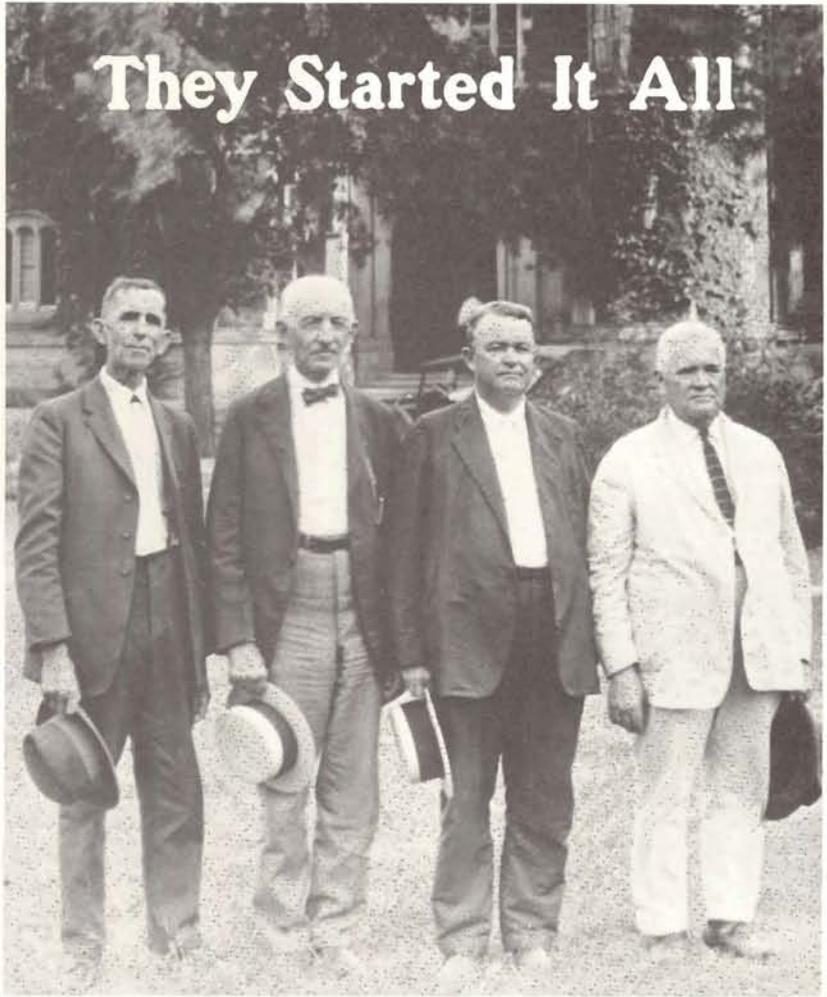
that I have got better acquainted with since — greeted me inhospitably. My mind was busy with the weather, the ugliness of the raw little town, the barrenness of streets and yards. As I came on to the campus I stopped — this was the university! The word had always meant — well, something very different to me. A single small red brick building — ugly in its lines and with a wart atop — a sort of misshapen cross between a cupola and a dome — stood in a grove of elms. Across the front and especially about the door, some ivy had made fine growth and was the one restful thing that met my eyes."

On entering the building, he did have one positive impression. "There was a chemical laboratory in the west end of the basement, and it struck me

as a very good one, in all likelihood adequate to the needs of the school."

Despite his initial misgivings, Parrington remained on the faculty for 11 years and was important to the students and the institution for organizing athletics and serving as football coach. When he left during an administrative shakeup in 1908, the University of Oklahoma was out of its infancy and well on its way to becoming a major supplier of the educational needs of the young state. Parrington, too, was on his way. His three-volume work, *Main Currents in American Thought*, won a Pulitzer Prize, and its author went on to become an outstanding teacher and scholar at the University of Washington, miles away from the ugly brick building with the wart atop.

They Started It All



The four original faculty members stand in formation on the North Oval, some years after the University's founding. Left to right: W.N. Rice, Dr. David Ross Boyd, F.S.E. Amos, and Dr. Edwin DeBarr.

chemistry in 1917 and gained special distinction that year by heading a special industrial research department which assisted the war effort through studies on oil, gas, and gasoline. His reputation was such that Padgett was asked in 1929 to assist Russia in the development and organization of its oil fields.

The industrial research department had another direct effect upon the University. It made OU one of the first in the country to offer industrial fellowships to students in which specific research could be carried on under faculty supervision in university laboratories. With programs such as this it was said that the American system surpassed the German education system. By the late 1920s, this country had "the most complete, up-to-date chemical training facilities in the world."

Some Famous Firsts

The first B.S. degrees in chemical engineering were awarded in June 1919. They were earned by John Orville Donaldson of Guthrie and Raymond Everett Selders of Oklahoma City. The first graduate degree in chemical engineering had been granted the previous year to Clyde Mitchell of Salem, New Jersey.

A professional degree in engineering was included in the Graduate College as early as 1914-15. Under this program, OU graduates who held either a bachelor or master of science in engineering could be granted the professional degree of Engineer, qualified by the school in which undergraduate work was done, according to the following conditions:

The candidate must present acceptable evidence of at least three years of practice in his profession, at least one of which must have been in a position of responsibility. He shall present a satisfactory thesis upon some engineering subject. The thesis shall cover investigation carried on personally by the applicant for the degree.

Several important additions to the faculty of the College of Engineering were made in the 1920s. In 1925, William Henry Carson became a professor of mechanical engineering. (He would later become dean of the College, with Felgar's resignation in 1937.)

In 1924, Joe Eugene Moose came to

the campus as an assistant professor of chemistry. Although there was still no course given in chemical engineering at this time, Dr. Moose taught a chemical technology course which treated the processes employed in industrial chemistry. Other courses in the chemical engineering curriculum were taught by the indefatigable Guy Y and by Arthur Curtis Shead (B.S. '19, M.S. '23), assistant professor since 1924, specializing in metallurgical chemistry.

Bruce Houston was the first professor hired with a degree in chemical engineering. He had received his B.S. from the University of Texas and his Ph.D. from Yale. He, too, joined the OU faculty in 1924. It is interesting to note that he taught general chemistry, organic chemistry, and the history of

pears that for the first time the teaching of unit operations was introduced into chemical engineering at OU. The five courses offered were the following:

- (1) Processes and Manufacturing (3 Hours) — prerequisite of Physical Chemistry. Evaporation, distillation, fractional crystallization; salts, acids, bases, and gaseous elements; electric furnace products; fats, oils, and waxes; soaps, fatty acids and glycerine; paints and varnishes; rubber, sugar, corn products, leather, etc.
- (2) Industrial Processes (2 hours) — Laboratory involving the carrying out on an enlarged



Company A.

chemistry rather than chemical engineering courses.

The School of Chemical Engineering underwent substantial reorganization in the 1920s. The directorship of the School passed from "Daddy" DeBarr to Guy Y. Williams in 1923 upon DeBarr's resignation as head of the chemistry department. In 1926-27, the curriculum again was incorporated into one program, rather than areas of specialization. And for the first time, chemical engineering courses were introduced, taught by Dr. Moose. In 1927 he became the first professor of chemical engineering.

From the descriptions of the courses in chemical engineering, it ap-

scale of distilling, crystallizing, filtering, and drying operations. The manufacture of selected materials.

- (3) Theory of Industrial Operations (2 hours) — A technical study of transportation of liquids, heat transfer, heating evaporation, and filtration.
- (4) Theory of Industrial Operations (Continued) (3 hours) — A descriptive study of machinery and processes for conveying grinding, sizing, and

mixing of chemical materials on the manufacturing scale.

(5) Plant Design (2 hours)

In 1929, Dr. Cecil Langford was appointed professor of chemical engineering upon the resignation of Dr. Moose. He took over the teaching of all five chemical engineering courses in addition to the chemical technology and industrial chemistry courses in the chemistry department. In 1930, Charlie Rudd Bailey was hired as instructor in chemistry to assist Dr. Langford with the School of Chemical Engineering. The first year he taught the industrial chemistry laboratory in addition to analysis of petroleum and its products and gas and fuel analysis.



Dean William H. Carson

His appointment as dean of the College of Engineering in 1937 marked a turning point for the School of Chemical Engineering. Dean Carson designated it as a separate unit within the College, and decreed that its director would no longer be selected from the chemistry department faculty.

Into the 1930s

"Engineers are a quiet lot, except on St. Pat's Eve.

"Now and then, one of them escapes from the profession into some such adventure as the White House; but most of them enjoy the pleasure of facing problems that mathematics and engineering principles only can overcome.

"Our Oklahoma engineers seem to have been unusually successful, as graduates go. The graduate is rare who does not place in some good job. Hard work and intelligence, of course, keep the job; but proper engineering training does a lot."

That editorial comment on the temperament of engineers and the quality of the engineering education at OU was written in 1931 in an issue of *Sooner Magazine* dedicated to that "quiet lot" on campus. The College of Engineering had now been in existence less than 25 years, and the 1,100 engineers were a relatively small but significant component of the student body.

By the early years of the 1930s, the effects of the Great Depression were felt on the nation's campuses. In

most propitious.

In 1935 there were 24 institutions that were accredited by AIChE, but the University of Oklahoma School of Chemical Engineering was not among them. One reason for the lack of sanction was its direct affiliation with the chemistry department and adjunct relationship to the College of Engineering. The AIChE Committee on Education wrote, regarding this standard:

The Committee believes that the cause of chemical engineering education will be more rapidly advanced if this subject is taught by an independent department and not by a subordinate section in the department of chemistry. . . . For the same reason the Committee believes that in large universities the chemical engineering



In 1925, a new administration building was completed to house the College of Engineering. It is now designated as Felgar Hall.

Oklahoma there was an extreme disruption of state finances. According to one source, the Board of Regents announced in 1933 that OU's College of Engineering would be transferred to Oklahoma A&M and merged with its Division of Engineering. But the move never materialized, as financial conditions began to improve and the University received economic assistance from the federal government.

The decade of the '30s showed slow growth for the University as a whole. The curriculum in chemical engineering experienced various changes throughout these years. (For general trends in curriculum development, see chart, page .) Primarily these changes at OU appear to be ones which involved juggling the required courses from one year to another, as if to find which arrangement was the

curriculum should be administered with other engineering courses in the school of engineering and not in the school of arts and sciences.

New Dean, New Director

This pronouncement by AIChE on the most favorable conditions for the teaching of chemical engineering was evidently supported by the faculty and administrators at the University of Oklahoma. In 1937, when William Henry Carson assumed the position of dean of the College of Engineering, he announced that the School of Chemical Engineering would become a separate unit within engineering. He

also announced that its new director would be not from the faculty of the chemistry department, but from the College of Engineering.

In September 1938, Dr. Richard Lee Huntington, former professor of petroleum engineering, became the new director of the School of Chemical Engineering. Dr. Huntington had received his B.A. degree in chemistry from OU in 1917. Following service in World War I with the Medical Corps and several years in industry, Huntington returned to complete his education during the depression years. He received his Ph.D. from the University of Michigan in 1933.

After working for the Phillips Petroleum Company for only a few weeks, Huntington was offered a position at OU, teaching petroleum refining. He accepted, and remained a consultant for Phillips while with the University.

Other faculty members of the reorganized School of Chemical Engineering were Dr. C. T. Langford and J. W. Donnell. Dr. Langford had been teaching chemical engineering since his appointment to the faculty in 1929, and after the reorganization he helped institute the changes in cur-

riculum required for recognition by professional associations. The predominant change at this time was augmenting the number of hours required in engineering courses and decreasing the hours required in chemistry.

Dr. Langford remained on the faculty until 1941 when he resigned to head the chemical engineering section of the Engineering and Development Division of the National Regional Research Laboratory in Peoria, Ill.

The other faculty member of the newly established school, Assistant Professor Donnell, was also a product of OU (B.S. 1925, M.S. in Petroleum Engineering, 1931). He began working on his doctoral degree at M.I.T. between teaching duties. While at the University, Donnell set up the facilities for the processing of lubricating oil from the refinery unit.

Donnell's various research projects included work on vacuum drying, humidification, study of oiliness, colloidal properties of drilling muds, monomolecular oil films, and motor testing of lubricating oils, a project of great importance to the future U.S. war effort.

In September 1938, as chemical engineering was transferred to the

College of Engineering under the direction of former petroleum engineering professor Huntington, the professional work in refinery engineering in the School of Petroleum Engineering was transferred to the School of Chemical Engineering. All three professors — Huntington, Langford and Donnell — were engaged in research concerning the petroleum industry. Dr. Huntington was then the chairman of the Research Committee of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers.

By 1940, in the country at large and at the University of Oklahoma in particular, the discipline of chemical engineering had matured into a fully developed and well-established subgroup in engineering. The American chemical industry had undergone tremendous growth since World War I, and the demand for chemical engineers continued to accelerate.

Now, with Europe in the grips of a war that would engulf the world, effects were already being felt in the industrial sector of the United States. The University, too, would soon feel the shock waves that rocked the American people on December 7, 1941. *(to be continued in next issue)*



Dr. Richard Lee Huntington
In September 1938, the former professor of petroleum engineering was named director of the School of Chemical Engineering. He had joined the OU faculty in 1933 as OU was being recognized as one of the best centers for education in the exploration and production of oil. Huntington helped expand its program in refining and gasoline extraction.



Sooner engineers wait in line to register outside of the Engineering Building (now Engineering Laboratory).

The OU freshman of 1912 who wanted to major in chemical engineering did not have much to cheer him as he looked at the curriculum outline. He needed about 164 credit hours for graduation and was required to write a thesis on a special engineering subject. There were no formal offerings in chemical engineering; he had to take a combination of chemistry courses and courses taught by various engineering departments.

There were no electives and no humanities besides the English and German requirements. With this course load, there wasn't much time for participation in the annual class fights or for cheering the football team at Boyd Field when they played such perennial powers as Kingfisher College, Weatherford Normal, Oklahoma Baptist, and Alva Normal.

Between 1918 and 1926 the chemical engineering curriculum contained three options: metallurgical

chemistry, petroleum technology, and sanitary chemistry. Courses in chemical technology and industrial chemistry replaced some of the courses in mechanics.

Following the publication in 1923 of the classical text *Principles of Chemical Engineering* by Walker, Lewis and McAdams, chemical engineering education turned away from specialized curriculum options toward unit operations. This approach stressed the general principles of various processes so that the chemical engineer could apply this knowledge to a broad spectrum of industrial operations and problems.

In 1926, the first courses in "pure" chemical engineering were offered at the University of Oklahoma. The chart below summarizes the distribution of courses from this point to 1938, when the School of Chemical Engineering became a part of the College of Engineering and was fully accredited by AIChE.

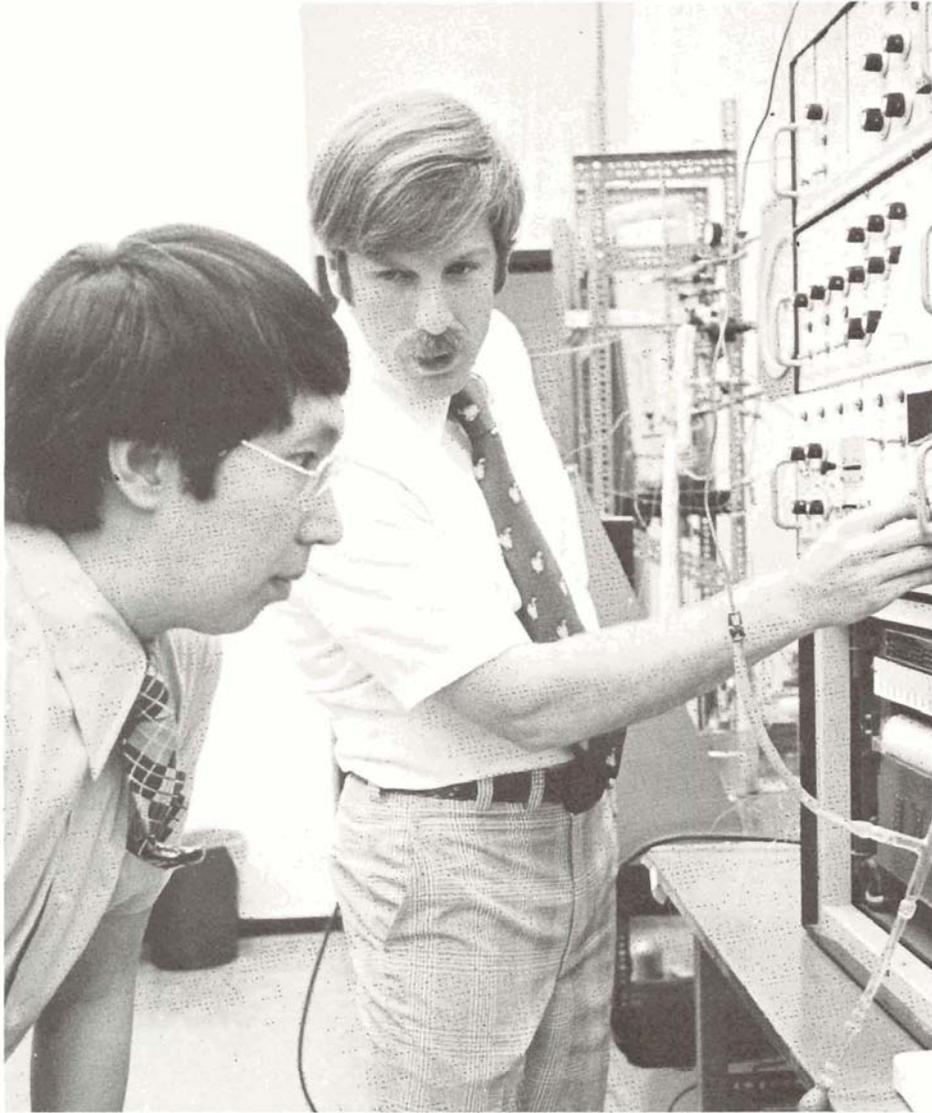
Building Better ChEs

CHEMICAL ENGINEERING EDUCATION

Subject	AIChE Standards 1926	OU* 1926	AIChE Standards 1936	OU* 1936	OU* 1938
Cultural	11.7%	12.2%	15.0%	18.0%	12.7%
Mathematics	10.7	12.1	12.0	12.4	12.7
Physics	7.7	6.4	8.0	6.9	7.0
Mechanics	5.7	7.6	6.0	6.9	7.0
Chemistry	29.2	31.2	25-30	34.5	23.7
Chemical Engineering	11.0	7.6	20-15	11.0	19.0
Other Engineering	18.7	17.1	12.0	15.5	15.4
Other Science	1.1	6.4	2.0	0	0
Electives	4.0	0	0	0	3.5

*158 hours required for graduation

Lloyd and Jay; Almost Veterans



The two newest assistant professors at CEMS: Lloyd L. Lee, John M. Radovich.

Although they've been here less than a year, the newest CEMS faculty members already fit comfortably into the academic and extracurricular life of Carson Engineering Center.

Assistant Professor Lloyd L. Lee has one month's seniority at the University over Assistant Professor John M. (Jay) Radovich. Lee, a native of China, has had a career in both industry and academe. He is a blend of the East and West by education and background, having earned his bachelor's degree from National Taiwan University (1963), a master's degree from the University of Nebraska (1966) and his doctorate from Northwestern University, Evanston, Ill., (1971).

His professional experience includes a year as research engineer with E. I. du Pont de Nemours & Co. in Richmond, Va., followed by a period as researcher at the University of Paris South, Orsay, France. During this time, he was engaged in studies of liquid physics.

Lee has been on the faculties of National Central University in Taiwan and Cleveland State University, Cleveland, Ohio. He is active in research on the thermodynamic and transport properties of fluids, especially for natural gases and synthetic natural gases. He also has interest in polymer processing technology in film forming (extrusion) and filament forming (spinning) operations.

Since coming here, he has published six papers in the areas of the structure and thermodynamic properties of hard spheres, soft spheres, Lennard-Jones fluids and anisotropic fluids. He has also completed three proposals for national funding with such subjects as turbulent flow, equations of state, conformal solution theory, liquid structure, Monte Carlo calculations, molecular dynamics techniques and transport property studies.

"Dr. Lee is fascinated by detail," one of the graduate

students in his class observes. "He plays mathematical games in his mind." One day, to the amazement of the entire class, Lee demonstrated on the blackboard that he knew by rote the value of pi to the thirty-fifth decimal place.

Even with such a range of scholarly activities, it's not quite all work and no play for the 35-year-old bachelor. He lists as his hobbies scuba diving, ice-skating, and — a newfound passion — skiing. "It's exhilarating and refreshing," Lee says. "It opens your mind and elevates your spirits as you descend on slopes with the panoramic view of mountain, sea and snow-covered townships down below."

Skiing and scuba diving aren't too satisfactory in Oklahoma, however, so closer to home Lee settles for a rigorous game of volleyball. He coached last year's team of winning intramuralists from CEMS.

Sports also figure prominently in the after-classroom-hours life of Jay Radovich. He names volleyball, softball, football, tennis and weightlifting as favorite activities — though the rumor persists that Radovich was recruited strictly for his athletic promise as a distance man with the CEMS striders. (Dr. Sam Sofer denies that a trial five-mile run over the University golf course is a part of the routine application process for all CEMS faculty.)

Radovich was born in Philadelphia, but Oklahoma students have mastered his accent as it has been tempered by periods spent in the Midwest and West. He is a graduate of the University of Notre Dame (B.S. maxima cum laude 1970), Stanford University (M.S. 1971) and Washington University, St. Louis, (D.Sc. 1976). He has worked as a process engineer for Sun Oil Co. and served as an instructor in chemical engineering at Washington University. Radovich has been a National Science Foundation trainee and also held a NEDA Title IV fellowship in 1973-74.

His research is directed toward the study and application of membrane separation processes, with longer-range work planned in the application of membrane processes to water pollution problems and the food processing industry. During the Spring semester, he taught undergraduate Unit Operations and the graduate course in Engineering Rate Operations. Radovich is in the process of designing a new Unit Operations laboratory course, to be added to the curriculum next Spring at the junior level. He is also developing a course in separation processes — Equilibrium Staged Operations.

Future teaching, in addition to unit operations, will be in the areas of transport phenomena (momentum heat and mass transfer), separation processes and chemical engineering fundamentals.

Married and the father of Camille, age 4, and twins Julie and Amy, 22 months, Radovich calls his principal outside interest "all the challenges inherent in raising three girls." He is an avid reader of history and science fiction and has completed a six-year stint with the Army Reserves.

As AIChE student chapter counselor, Radovich has had a chance to get to know a cross section of the student body. He has also become a potent political lobbyist for one major improvement in working conditions at CEMS — the serving of milk at faculty meetings. "Milk is better than coffee with cookies" is the Radovich platform.

His reform measure may be adopted. Milk is cheaper, too!

OU Regents Salute CEMS

At their May meeting, members of the University of Oklahoma Board of Regents approved a resolution of commendation for the School of Chemical Engineering and Materials Science, in recognition of its national ranking in the Griskey report.

The complete resolution read as follows:

WHEREAS, the University of Oklahoma has always strived to provide the best education possible for the students it serves; and

WHEREAS, the University continues to seek ways to make its academic programs even more attractive; and

WHEREAS, the Chemical Engineering programs in the University of Oklahoma's School of Chemical Engineering and Materials Science recently have been rated in an evaluation prepared for *The Chemical Engineering Education Journal* of the American Society for Engineering Education as fifth in the nation from among more than 150 colleges and universities; now, therefore,

BE IT RESOLVED, that the members of the Board of Regents of the University of Oklahoma, on behalf of the student body, faculty and staff of the University and citizens throughout the State, express great pride in the accomplishments of the School of Chemical Engineering and Materials Science, its Dean, Dr. William R. Upthegrove, its Director, Dr. Samir Sofer; their colleagues, and the students of the School, and salute them for their contribution to the overall mission of the University.

Details of the Griskey ranking were given in the Fall/Winter 1976 issue of *OkChE*, page 11. Or, for the original source, see *Chemical Engineering Education* 10, No. 3, 140-144 (1976).

Top Students Win Awards

Outstanding students in the School of Chemical Engineering and Materials Science were recognized at the second annual CEMS Awards Banquet on Wednesday, April 27. Those receiving the awards were:

Susan Smith, Norman, and Mark Southard, Ponca City—Celanese Award for Outstanding Freshmen in Chemical Engineering;

Jim Friesner, Tulsa—Pamela Pesek Johnson Award for the Outstanding Senior in Chemical Engineering Design;

Debra Mitchell, Enid—Phillips Petroleum Company Award for Outstanding Junior-Senior in Chemical Engineering;

Tracy Snyder, Idabel—AIChE Award for the Outstanding Student at the End of the Sophomore Year;

Mark Hollrah, Paoli, Pennsylvania—Frank Maginnis Award for the Outstanding Student in Metallurgical Engineering.



Outstanding freshmen students in chemical engineering, Susan Smith and Mark Southard, flank CEMS director Sam Sofer at annual awards banquet.



Welcoming Back A Popular Prof

Laurance S. (Bud) Reid has had a long and multi-faceted association with the University of Oklahoma. He has been a student (M.S. '37), a faculty member in the College of Engineering (1940-69), and a loyal alumnus.

This spring, in the midst of the heavy demands on all those associated with the petroleum industry, Reid was back on campus, presenting the third annual Harry G. Fair Memorial Lecture on April 27. His subject: "The Mother Lode."

The following week, before jetting off to Venezuela on business, he began jotting notes for the Fall 1977 issue of *OkChE*. It will cover

the years from World War II to the present, a time span that he is uniquely qualified to comment upon. Bud has graciously agreed to be editorial consultant on this forthcoming issue. (Alumni interested in contributing stories or pictures from their era are urged to do so. We can't promise to use them all, but we will return any photos on loan!)

Reid is chairman of the board of Ball-Reid Engineers, Inc., and a long-time petroleum industry consultant. In 1970 he was recipient of the NGPA Hanlon Award for outstanding contributions to the petroleum industry.

In the picture above, Reid and Dr. Kenneth Starling chat with students following the Harry G. Fair lecture. Good to have you back at the Mother Lode, Bud.

Life After Graduation

The 19 CEMS graduates of Spring 1977 have almost all said goodbye to OU (Bernard Van Wie will return to campus for graduate school) and are making their marks in the world.

An informal poll of the class, just prior to commencement, revealed the following employment plans:

Four alumni are working for Continental Oil Co. in Ponca City (Michael J. Conley, Kathleen Patterson, Ritchie Romine, Charles D. Thomas); Cities Service Co. in Tulsa has hired William C. Boyer and James L. Rodkey; Dow Chemical Co., Freeport, Texas, is the corporate home of David W. Coombs and Donald G. West; Hunt Energy Co. in Dallas has recruited Kenton E. Lyon and George V. Ricks, Jr.; and Richard A. Clausen is with Arco Oil Co., Bakersfield, Cal.

Other matches of firm and engineer: Techrad Laboratories, Oklahoma City, Michael A. Logan; Phillips Petroleum Co., Oklahoma City, G. Richard Talley; Proctor and Gamble, Cincinnati, Paul S. Wallace; and Amoco Oil Co., Liberal, Kan., Kerry L. Zemp. Two classmates will join Van Wie in his quest for an advanced degree: Ali Djowharzadeh at Central State University and Mark A. McDonald at Stanford. Jack H. Hitt was still undecided as to his plans when *OkChE* went to press.

The College of Engineering is interested in restoring its student population with qualified persons like these graduates.

If you know of someone who should receive materials about academic programs at the University of Oklahoma, you are encouraged to contact the proper student information office through letter or phone with the vital data

concerning your prospect. They will quickly make contact with the person to ascertain how OU may meet his or her specific interests and needs.

For high school prospects, contact the School Relations Office, (405) 325-2151. For junior college or transfer student prospects, call the College Relations Office, (405) 325-3042. Write to either office at 900 Asp Avenue, Norman, Oklahoma 73019.

Beginning Salaries Continue to Climb

What is the earning power of a bachelor's degree from the University of Oklahoma School of Chemical Engineering and Materials Science? According to job offers to graduates of the class of 1977, it ranged from a high of \$1,525 per month (by an oil company) to a low of \$1,100 (by a utility). Associate Professor Carl Locke has summarized these offers and acceptances, shown here. The miscellaneous category includes engineering construction, pollution control and utility companies.

	Oil	Chemical	Misc.	Total
Offers				
Number	35	9	7	51
Average Monthly Amount				
76-77	\$1,430	\$1,416	\$1,331	\$1,394
75-76	\$1,324	\$1,285	\$1,281	
74-75	\$1,253	\$1,208	\$1,162	
Acceptances				
Number	9	3	3	15
Average Monthly Amount				
76-77	\$1,430	\$1,405	\$1,433	\$1,426
75-76	\$1,331	\$1,295		
74-75	\$1,313	\$1,250	\$1,175	

The class whose employment profile is shown here should be the smallest in number for some years to come. (In addition to the 15 graduates now working in the field, three students went on to do graduate work and one was still undecided as to career plans.) Pre-enrollment figures for Fall 1977 indicate increasing numbers of chemical engineering students coming along. This situation is not unique to OU, according to information from AIChE; similar enrollment patterns are being reported at most departments around the country.

Class	Year Taken	Fall 1977 Pre-enrollment
Intro. to Ch.E.	Sophomore	72
Thermo	Junior	52
Kinetics	Senior	35



Mrs. Richard Huntington (second from left), whose late husband was a director of the School, is among guests at the annual CEMS awards banquet this spring. David Ross Boyd Professor Mark Townsend (in dark jacket) visits with the group.

Alumni News

W. Jack Anderson, B.S. '43, is vice president and managing director of Pertamina (Indonesia State Oil Co.) in Jakarta, where he and his wife Betty are living. He reminds his classmates, "I am the Jack Anderson who took the cow to college in 1941." Both of his sons, Steven and Bruce, attended OU.

James R. Bridgett, B.S. '73, and his wife Leanna became parents of a son, David James, on September 16 last year. Bridgett is engaged in research for Monsanto Co. in St. Louis, Mo.

Gerald D. Butterworth, B.S. '41, has retired from Standard of Indiana. He and his wife Pat live in Guthrie, Okla.

James H. Chamness, B.S. '54, lives in suburban Boston with his wife and their four sons. Chamness is division vice president of negative manufacturing and quality control for the Polaroid Corp.

Fred Hall, B.S. '71, and his wife Glenda are living in Fairport, N.Y. He is with Taylor Instrument Co. in Rochester as a control systems engineer, after working for UOP, Inc., in Des Plaines, Ill.

Ralph R. Hall, B.S. '64, is on a six- to twelve-month assignment in Singapore, working in an Exxon lube plant as staff engineer. Hall is permanently employed in the Lubes Section, Florham Park, N.J., as senior project engineer.

John C. Jepsen, Ph.D. '64, is business manager for Shell Chemical Co. in Eldstomer Business Center, Houston. He lives at 5631 Long Creek Lane, Houston 77088.

Don Minnix, B.S. '60, and his wife and three children live in Joplin, Mo., where he owns and operates two motels and some rental properties. Prior to starting his own business (Minnex Enterprises) in 1972, he was a product superintendent for Celanese Fibers Co.

Ruben L. Osborn, B.S. '71, is a petroleum engineer with Union Oil Co. of California. He works in the Oklahoma City office and lives in Norman with his wife Cheryl and two children, Tammi and Brian.

Robert R. Reid, B.S. '43, has retired from Cities Service Oil Co. after 34 years as product engineering manager.

Jerry M. Robinson, B.S. '58, is manager of special projects for KVB, Inc., Tustin, Calif. He is working on air pollution control through combustion control and removal of sulfur and nitrogen from fuels.

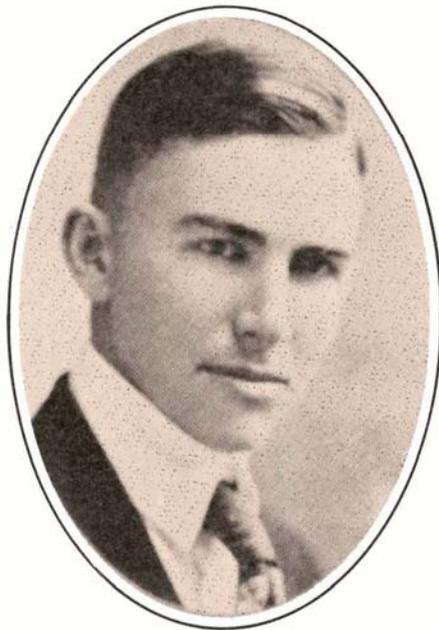
Robert C. Robinson, B.S. '57, serves as chief engineer in the Aeronautical Systems Division at Wright Patterson AFB, Dayton, Ohio.

David B. Sloan, B.S. '72, M.S. '75, is living in Decatur, Ala., where he works as a process engineer for Amoco Chemicals Corp.

Cameron A. Vickers, B.S. '64, M.S. '66, is supervisor of the thermo setting resins and formaldehyde department of Monsanto Co. Vickers and his wife and two children live outside Springfield, Md.

James Word, B.S. '39, and his wife live at 3439 Amherst, Amarillo, Tex. Word works for Delta Water Laboratories in Lubbock, and his wife recently retired from United Way.

We are interested in knowing where you are and what you are doing. Please fill out one of the enclosed information cards and send it to us. We will publish the information in our next issue.

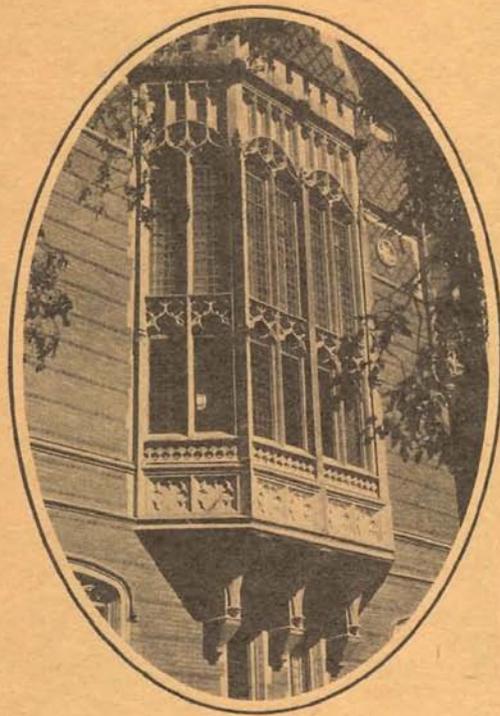
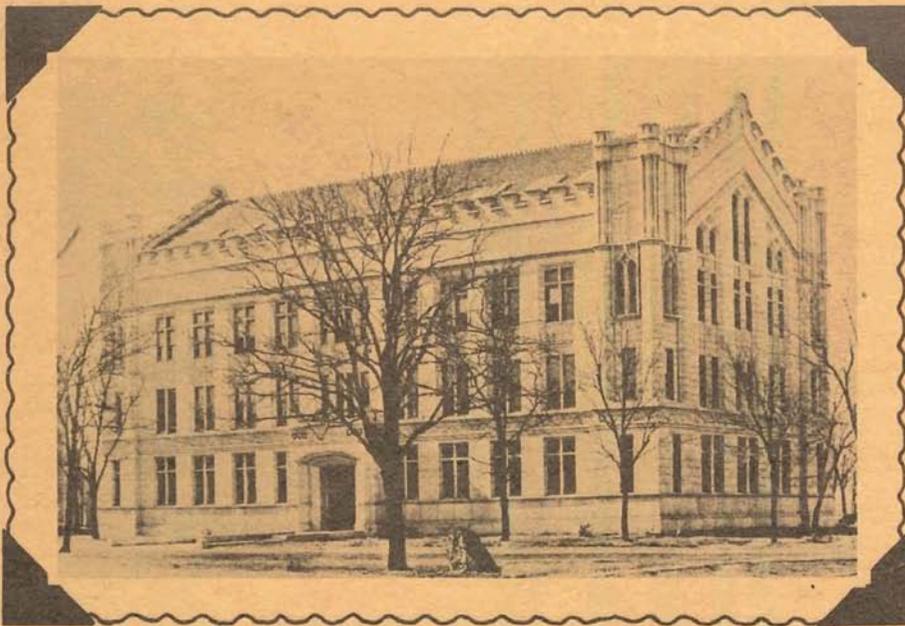


Our two first Chemical Engineering bachelor's degree graduates, Class of 1919:
Raymond E. Selders, John O. Donaldson.

How do you capture half a century and compress it onto a scant dozen pages of pictures and print? The answer: inadequately, imperfectly; but in our case, with a good deal of reverence and affection.

For an individual, a 50-year life span signals maturity. For an institution, the first 50 years may only bring it to the threshold of adolescence. There is a serious side to adolescence, of course, as shown by the hard working students crowded in the old library. But this part of campus life was (and still is!) balanced by a measure of high jinks and general friskiness. That explains the smiles that will cross our faces when we think back to the picnics, the Homecoming floats, and the University as it was during those best of times — when WE were students there!



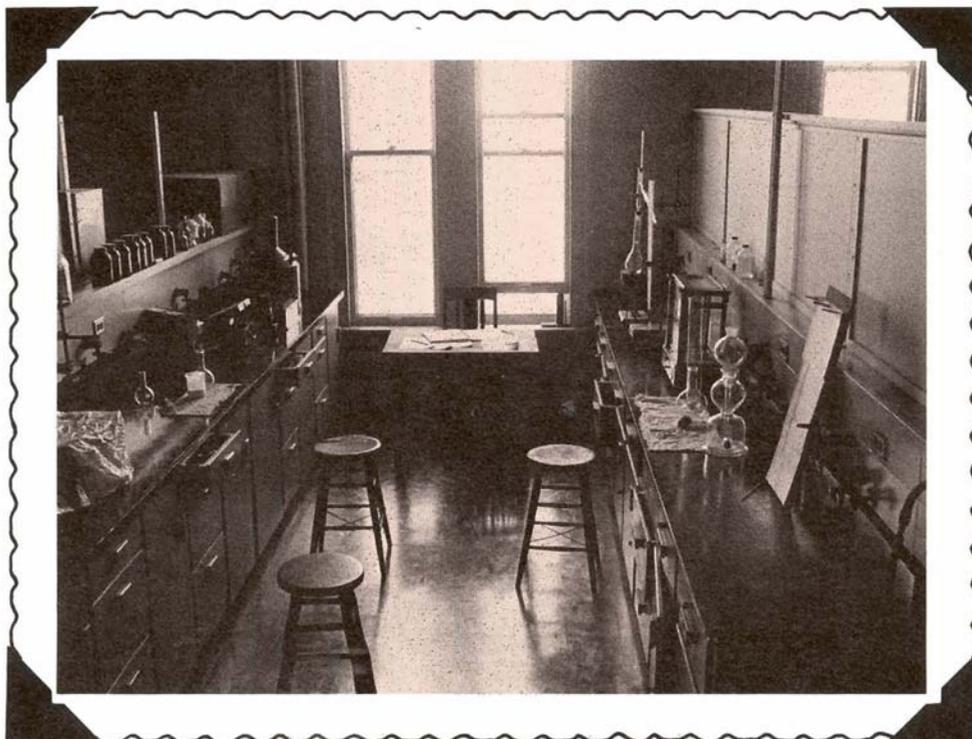


Homecoming float, 1937 (left).

First OU Band, 1904-05 (above).

Window detail, Bizzell Memorial Library (in oval).

Chemistry building (DeBarr Hall) remains a well-used landmark on the North Oval.



For the reproduction of a turn-of-the-century chemistry lab in DeBarr Hall, as shown on the cover, we are grateful to Professor Emeritus of Chemistry Bernard O. Heston.