

# Chem - news

Alumni Newsletter Published by Department of Chemistry University of Kentucky

Fall 1981

## A Message from the Chairman

The 'annual' newsletter is more nearly a biennial newsletter since this issue covers events and information for the two academic years 1979-80 and 1980-81. My only excuse besides procrastination is the extra time we have spent in preparing for the 33rd Southeastern Regional ACS meeting hosted by the Lexington Section and the decennial self-study for reaccreditation by the Southern Association of Schools and Colleges. We extend a cordial invitation to all our alumni and friends to attend the Regional Meeting, November 4-6, 1981 and are enclosing a leaflet describing the symposia, technical sessions, and tours. This should be a good opportunity to revisit our campus and renew acquaintances.

We were sorry to learn of the death of three of our alumni: Thomas B. Nantz, retired vice-president of B. F. Goodrich Co. on December 17, 1979; Donald W. Riestler, retired vice-president of American Can Co. on January 30, 1980 and John P. Head, in 1977. See the alumni news section for more details on their careers.

### Thanks for Writing

Our thanks go to those of you who respond to our request for news which I hope you will enjoy in our Alumni News Section. We are especially pleased with the response from those who graduated in the 'twenties' to give us more detailed information on their careers and reminiscences of their academic experiences at UK. We are especially indebted to Dr. Robert Baker for his detailed manuscript and furnishing us with the picture of the chemistry faculty and staff of 1934, the banquet program on the occasion of honoring the retirement of Professor F. E. Tuttle in 1934 and a bulletin published in 1903 relating the

activities of the Department of Chemistry, a part of which is reproduced in this newsletter.

### Naff Symposia

The sixth and seventh Symposia on Chemistry and Molecular Biology supported by the endowment fund in memory of Anna S. Naff were their usual success. The sixth symposium on April 25, 1980 was on 'Structure and Functions of Cell Membrane' presented by Professor Charles Tanford, Department of Biochemistry, Duke University, and Professor Efraim Rocker, Department of Biochemistry, Cornell University. The seventh symposium on April 24, 1981 was on 'Transmembrane Signalling: Receptors, Hormones, and Neurotransmitters', presented by Dr. Julius Axelrod, National Institute of Mental Health, and Dr. Pedro Cuatrecasas, The Wellcome Research Laboratories. We welcome any suggestions you have for topics and speakers for future programs.

Our faculty continues to be active in research and professional activities as reported in the section on faculty. The faculty has been more active in seeking and obtaining external grants to support their research programs. The faculty published 37 articles in 1979, and 38 in 1980. The new Varian XL-200 NMR spectrometer and high resolution mass spectrometer have been installed.

### Enrollment Still Increasing

Both our undergraduate and graduate student enrollment have increased slightly the past two years contrary to the predicted decrease.

Our teaching and research programs have suffered the past year and prospects

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## A Message from the Chairman

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are even worse for the coming year, which was brought about by an eleven million dollar cut in the University's budget for 1980-81, and an expected minimum 5% additional cut for 1981-82, owing to a short fall of state income of approximately \$300 million over the period.

The effect on chemistry has been freezing of two vacant positions—one faculty position in organic and the lecture-demonstrator position, a reduction in our travel budget to \$3120 for twenty-five faculty, and a 10% cut in printing costs last year. We did not receive any capital equipment budget except the special grants from the research funds administered by the graduate school. We will receive additional cuts in our operating budget and possibly lose some more faculty and staff positions.

To offset the bad news we are grateful for two new major contributions and continued support from the Anna S. Naff Endowment, Ashland Oil Summer Fellowships, Boyer Memorial Fund, Dow Corning, and contributions from our alumni frequently with matching funds from the companies. Mr. A. S. Behrman, who received a B.S. degree in 1914,

became a University fellow and contributed \$10,000 to the Department of Chemistry. Needless to say the funds came at an opportune time and we were able to utilize part of the funds to supplement funds from the Graduate School to purchase a \$35,000 laser-Raman spectrograph to support the research programs of Drs. Kincaid, Holler, and Tolbert. Some of the funds are retained to support student awards. I had the pleasure of having lunch and a visit with Mr. Behrman in Chicago, and thoroughly enjoyed hearing more details of his very interesting career and accomplishments in the area of water treatment and supplies. He kindly sent the Department a beautifully bound copy of his book on Phillipine Water Supplies published in 1918 and a copy of his book on 'Water is Everybody's Business' published in Japanese.

Mrs. Thomas B. Nantz established an Endowment Scholarship Fund of \$25,000 in memory of Dr. Thomas B. Nantz to provide scholarships for tuition and books to two students majoring in chemistry, at the Junior, Senior, or graduate level. The first awards should be available for the 1982-83 academic year. We appreciate the

generosity of Mrs. Nantz in providing the awards which will benefit many worthy students in the future.

Again we wish to thank those alumni and friends who have contributed funds to the Department of Chemistry. The funds have been used to support fellowships, equipment purchases, and refreshments for special seminars.

If you wish to make contributions to the University to be used by the Department of Chemistry, please specify that the donation is for the Chemistry Department Development Fund for unrestricted use by the Department of Chemistry. Donations may be sent to: Director of Development, 204 Administration Building, University of Kentucky, Lexington, KY 40506-0032.

We urge you to send us information of your activities to include in the Newsletter, and we welcome your suggestions of what you would like to see included in our Newsletter.

*William F. Wagner*

William F. Wagner,  
Chairman

## Student Awards

The following awards were made possible by gifts from alumni, friends and industry during the past two academic years:

### Undergraduate 1979-1980

Robert M. Boyer Memorial Fund Awards:

A. Undergraduate Seminar Poster Session Awards

First Prize: James L. Huckaby \$50  
Second Prize: Michael Kommor \$25  
Honorable Mention: Stanley F. Simpson,  
Curt L. Milliman, Kurt S. Niedenzu

B. Undergraduate Service Award:

Stanley F. Simpson \$25

Meredith Award to Outstanding Seniors:

Stanley F. Simpson \$60,  
Blake W. Townsend \$60

Merck Index Award:

Susan C. Wyatt

Analytical Chemistry Award:

Jennifer L. Baker

American Institute of Chemist Award:

Teresa Z. Russin

### Undergraduate 1980-81

Robert M. Boyer Memorial Fund Awards:

A. Undergraduate Poster Session Awards:

First Prize: Larry Green \$50  
Second Prize: Julie Pickard \$25  
Honorable Mention: Stuart Eldridge \$10,  
Susan K. Knoll \$10, Susan Luerman \$10

B. Undergraduate Service Award

James L. Huckaby \$25

Meredith Award to Outstanding Senior:

Michael Kommor \$125

Merck Index Award:

Melanie Miller

Analytical Chemistry Award:

Mark Henry

American Institute of Chemist Award:

John Matthews

Behrman Awards:

A. Outstanding Teaching Award:

Elizabeth Kleppinger \$100

B. One-Hundred Percent Plus Award:

Mohammad Z. Ali \$100

### Graduate 1979-1980

Alumni Development Fund Awards:

A. Outstanding Teaching Assistant:

Mathilda D. Doorley \$100

B. Outstanding Graduate Research Award:

Jimmy Feix \$100

C. One-Hundred Percent Plus Awards:

Nanda M. Brahme \$50  
Gary R. Williams \$50

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Alumni Development Fund Awards:

Outstanding Research Awards:

Przemyslaw Maslak \$100  
Stephen McClanahan \$100

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# STATE COLLEGE OF KENTUCKY

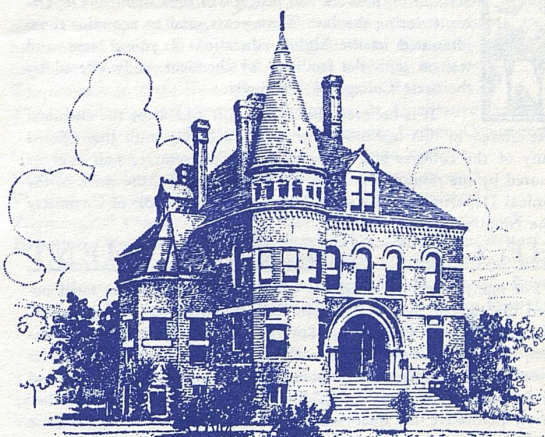
James K. Patterson, Ph. D., LL. D., President

## Chemistry

SEPTEMBER, 1903  
BULLETIN No. 11

PUBLISHED BY THE STATE  
COLLEGE OF KENTUCKY  
L E X I N G T O N

Entered at Lexington, Ky., as Second-Class  
Matter, Under Act of Congress, July 16, 1894



THE CHEMICAL LABORATORY

## Special News from the 20s Alumni

Requests to the alumni, who graduated in the 1920-30 period, to bring us up to date on their activities since graduation and relate some of their experiences while they were students, brought the following responses:

1919

**Arthur W. Petrey** received a B.S. degree in Industrial Chemistry. He now lives in retirement in Vancouver, WA after a career in developing quantitative spectroscopy for the analysis of aluminum during production and refining.

1920

Anne B. Bauer informed us that **John P. Head**, who received his B.S. degree, passed away on October 5, 1977.

1923

**Thomas C. Herndon**, retired and living in Richmond, KY, wrote the following letter:

After graduating from UK in 1923, I taught briefly in high school and two years at Bethel College, Russellville, KY.

I was granted the M.A. degree and the Ph.D. degree by George Peabody College in 1926 and 1930, respectively. I joined the faculty of Eastern Kentucky State College in 1930 as professor of chemistry, serving in that capacity until my retirement in 1967. I was chairman of the division of science from 1947 to 1964 and was chairman of the chemistry department at the time of my retirement.

In the summer of 1948, I was appointed by the U.S. State Department to participate in the UNESCO Seminar on International Understanding through Education which met in Berkhamstead, England. (A most interesting experience, living and working with forty-seven people from twenty-five nations.)

In 1952 I was president of the Kentucky Chemistry Teachers Association and in 1953 I was president of the Kentucky Academy of Science. I have been fairly active in church and civic club work as elder and chairman of the Official Board of First Christian Church in Richmond, KY and as a member and president of the Richmond Lions Club.

I have been listed in Who's Who in American Education, American Men of Science and Who's Who in the South and Southwest.

My hobbies (now mainly past) have been traveling in the U.S., Canada and Europe and gardening, fishing and bridge.

More details of my life can be found in 'Life in the Bluegrass' by 'Squire' J. Winston Coleman, Jr.

1925

**Raymond K. Flige** obtained a B.S. degree in 1925, an M.S. in 1927 and an

# CHEMISTRY



THE object of this bulletin is to give a brief and general account of the work and progress of the Chemical Department during the last fifteen years, and to acquaint those interested in the higher education of young men and women with the facilities for chemical study offered by the State College of Kentucky.

It is believed that in breadth and scope the chemical course offered in this institution compares favorably with that offered by any of the colleges and universities in the country, and that as measured by the results of the last ten or fifteen years, the work of the Chemical Department ranks with that of the best Schools of Chemistry in the country.

## THE CHEMICAL DEPARTMENT

For many years the chemical laboratories and lecture-room occupied the eastern part of the main College building. In September, 1889, however, the Experiment Station building having been completed, the apparatus and equipment were removed from the laboratories in the main building to more suitable and beautiful rooms on the second floor of the Experiment Station Building. The lecture-room and the laboratories, qualitative and quantitative, of the Chemical Department are exceedingly well adapted to their purpose, and are among the best constructed and most handsomely furnished of the rooms in the College. The qualitative laboratory contains three very large working tables, each of which can easily accommodate ten students. The quantitative laboratory is also well equipped with tables, hoods, water, gas, electricity, etc., and has desk room for at least fourteen students in all. The lecture-room has a seating capacity for seventy-five persons and is admirably adapted for class room work. Besides the laboratories and lecture-room, there are several other small rooms on the same floor set aside for the use of the Chemical Department—an instructors' office, a balance-room, and a store-room.

It has been apparent to the authorities of the institution, for some time, that both the Chemical Department and the Kentucky Agricultural Experiment Station were in need of larger quarters. It was, therefore, decided by the Board of Trustees, at their semi-annual meeting, in December, 1902, to build a new building for the Station and to turn over the present Station building to the Chemical Department. In this way the needs of both departments have been met.

With very slight modification and improvement this beautiful building can be converted into a well arranged and commodious laboratory of modern type. It is proposed to convert the right half of the basement into a Metallurgical Laboratory and Assay Room. The basement rooms on the left of the building will be used as store rooms for apparatus and chemical supplies. On the first floor will be located the instructor's office, the library, the recitation room for more advanced students, a balance room and the laboratories for Quantitative Analysis, Organic Chemistry and Chemical Research. The lecture room on the second floor of the building will be retained for its present use, while the laboratories on the second floor will be converted into one large laboratory for instruction in General Chemistry. Such an arrangement will insure permanent and adequate quarters for the Chemical Department for years to come, and with such, there is every reason to expect its continued growth and success. From two or three rooms in the Main Building fifteen years ago to the beautiful building which is to be the future home of Chemistry in this institution, is in itself indicative of the progress made along these lines.



M.S. in Chemical Engineering from MIT in 1932. He retired in 1972 from his position as professor of textile engineering at Georgia Institute of Technology. From 1932 to 1954 he was employed in textile and managerial capacities until he joined Georgia Tech.

**Sarah Thorn Mitchell**, (Mrs. Harry J), Covington KY, received her A.B. in 1925 and her M.S. in 1932 and relates the following activities since that time:

After graduating from UK in June 1925, I taught all of the science classes at Greenville High School, Greenville, KY. From September 1928 to June 1941 I taught chemistry at Henry Clay High School, Lexington, KY. It was during these years that I worked for my masters degree which I received in 1932. Dr. Tuttle was head of the chemistry department and taught my classes in quantitative analysis. Dr. Charles Barkenbus directed the work on my thesis. Their patience and helpfulness will always be remembered.

I married in 1941 and moved to Covington, KY. I did not teach for five years but in the fall of 1946 I became a teacher of science at Holmes High School in Covington, KY. I retired in 1969.

During my years of teaching I had many outstanding students. A goodly number of these have pursued careers in or closely associated with chemistry. I always read the Alumni News in Chem-news with great interest for I often found the names of ones whom I have taught that have done well in their chosen profession. One of the most rewarding experiences of a former teacher is to learn of the accomplishments of students and to feel that maybe in some small way he or she helped to direct their thinking.

I feel a great affection for the University of Kentucky and for the professors there who were kind and considerate of me when I was a student.

**Manly M. Widsor** retired in Elyria, OH and received an M.S. degree and a Ph.D. from MIT in 1932.

1926

**Miss Lydia C. Kahnt**, B.S. received in Industrial Chemistry and she received an M.S. in biochemistry from St. Louis University in 1928. She worked for 42 years as medical technologist at Elmyra Memorial

Hospital (Ohio). She has retired to Orlando, Florida. She writes:

The professors in the chemistry department that I recall are:

Dr. Tuttle head of the department and very distinguished looking.

Dr. Maxson alias Mighty Maxson by the students.

Dr. Barkenbus popular with the girl students.

Time dims the memory of the other professors in the chemistry department.

Letter from **Edward Cecil Tarpley** (B.S. received in Industrial Chemistry):

Home-town Franklin, KY (Simpson Co.) I was employed in 1926 by the Pennsylvania Railroad as a chemist in their testing laboratories at Altoona, PA. In 1927 I married Elizabeth Ann Miller also of the class of '26 from Paducah, KY. We were both cashiers at the university cafeteria during our junior and senior years. The cafeteria at that time was located in the basement of the Administration Building.

I struggled through five years of classes under 'Mighty' Maxson, Mitchell, Stewart,

## E Q U I P M E N T

The Department is well supplied with the commoner forms of chemical apparatus and chemicals. In addition to these, it owns several of the more expensive pieces of apparatus, such as several delicate balances for analytical work; a grand model Bunsen & Kirchoff spectroscopy; platinum apparatus; a complete outfit for electro-plating; vapor density apparatus; a glass model ice-machine; freezing-point and boiling-point apparatus for the determination of molecular weights; differential thermometers; reading telescope and a Pulfrich's refractometer. These, of course, will be added to from time to time, as the needs of the Department demand, and the resources of the institution permit; as it is now, however, the equipment is such as readily to enable the student to obtain at first hand a good working knowledge of chemical science.

## C O U R S E O F S T U D Y

The Chemical course is one of the several scientific courses offered by the College. It requires four years' resident work for completion, and leads to the Degree of Bachelor of Science. It was first offered in 1894, with the view of preparing the student for life work in Chemistry, and also with the view of fitting him for the study of medicine and kindred professions. To the accomplishment of this, the following course of study has been adopted:

### STUDIES REQUIRED

The first year is devoted to the study of English, German, Physiology, Free-hand Drawing and Mathematics, including Plane Geometry, Trigonometry and Algebra. The second year, to German, Physics, Botany, Chemistry and Mathematics, including Solid and Analytical Geometry and Calculus. The third year, to Theoretical Chemistry, English, Calculus, French, and laboratory work on the Chemistry of the Metals and Qualitative Analysis. The fourth year, to Quantitative Analysis, Organic Chemistry, Chemical Reading on advanced topics, and to Chemical Research, History and Political Economy, Logic and Moral Philosophy and Metaphysics.

The entrance requirements for this course of study are the same as for the other scientific courses offered by the college. Generally speaking, a knowledge of common school branches is all that is required.

### THE TRAINING IN CHEMISTRY PROPER

The study of Chemistry proper, as outlined in the above, is sufficient in its scope to bring the student into close contact with the great fundamental truths of the science, and to make him enthusiastic and capable in his profession. It includes the following subjects:—  
The Chemistry of the Non-metals, Lectures and Recitations.  
The Chemistry of the Metals, Laboratory work, Qualitative Analysis, including the examination of the Commoner Carbon Compounds.  
Quantitative Analysis, gravimetric and volumetric methods.  
Organic Chemistry, lectures, recitations and laboratory work.  
Physical Chemistry, lectures, recitations and laboratory work.  
Physiological Chemistry, lectures, recitations and laboratory work.  
Historical Chemistry includes the study of Venable's Short History of Chemistry, Tilden's History of Scientific Chemistry, and collateral reading, such as Roscoe's Life of John Dalton, Thorp's Essays on the History of Chemistry, the Alembic Club Reprints, Ostwald's classics and Berthelot's works on the History of Alchemy.

In addition to the regular work of the Department, the Journal Club meets weekly throughout the year, for the reading and discussion of current chemical topics, as presented in the current numbers of the various chemical journals.

## L I B R A R Y F A C I L I T I E S

A complete Chemical Library is one of the most important adjuncts to chemical instruction, and is an indispensable aid to chemical investigation and research. The Chemical Department now owns a small reference library of standard authorities, which has proven of great assistance and help to Chemical students. In addition to this, through the kindness of Professor Scovell, Director of the Kentucky Agricultural Experiment Station, students of this Department have access to the library of the Experiment Station. This is by far the largest and most complete Chemical and Agricultural library in Kentucky, if not in the

Barkenbus, Bedford and, of course, the beloved Dr. Tuttle, head of the chemistry department. I set up the lecture tables for Maxson and Mitchell and was stockroom boy in the one chemistry building 'Kastle Hall' most of my spare time. I left the P.R.R. in 1935 when I was employed by the U.S. Department of Interior (Bureau of Mines) at Pittsburgh, PA, as a junior chemist. In 1948 I was transferred and promoted to chief of the analytical section for two synthetic liquid fuel demonstration plants at Louisiana, Missouri. These plants were closed in 1953 and I was transferred back to the Pittsburgh station. While in Missouri I was a charter member of the Missouri-Illinois Section of the American Chemical Society and Chairman of the Section in 1952. Also I was listed in the American Men of Science in 1948. After 31 years with the Department of Interior I retired as a research chemist having worked jointly with Orsance (Ohio River Sanitary Commissions) on studies for the abatement of stream pollution by acid mine drainage from coal mines. I was author and co-author of nu-

merous publications and government technical papers.

We attended our 50th reunion in 1976 and hope to celebrate our 53rd anniversary this fall. Our only daughter, Martha Ann (Mrs. Clinton Baker), Auburn, Alabama is also a graduate of U.K. class of '53 and majored in journalism. Our grandson, David, will enter his third year at UK this fall while our granddaughter is attending Auburn University. After retirement I moved to St. Petersburg, FL in 1967 where we have enjoyed extensive traveling and condominium living.

1929  
Statement prepared by **Robert H. Baker**, Bowling Green, KY.

My brother W. Marvin Baker and I arrived at the University in September 1927, having transferred from 'Old' Bethel College, Russellville, KY. Neither of us were certain of a choice of major interest but were preparing for teaching. After one semester of physics, history, political science and organic chemistry we determined to graduate in chemistry in the remaining three semes-

ters if possible. We had been captivated by the style and intense interest, particularly of Professor Charles Barkenbus. In the spring of 1929 we emerged into a waiting world of opportunity with good teaching jobs and an offer from Du Pont.

While trying to decide on the right direction Professor Tuttle suggested for me a graduate assistantship and a masters degree in two more years. Brother Marvin did take a teaching post at Middlesboro, but rejoined me a year later in the quest for higher education. Hence we again graduated in the same class, this time with masters degrees in 1931. The world, however, had changed in the interim and one took what he could get. Marvin returned to Bethel College and moved rapidly becoming dean by Christmas. Financial difficulties led him to close the college in 1933, at which time he transferred himself and many of the students to Western Kentucky State Teachers College. Some ten years later he joined the F.B.I. for the remainder of his professional life. Now retired we are together again in Kentucky. Again Dr. Tuttle came to my rescue and

**Southern and Middle States.** Besides the standard reference books on Chemistry and Agriculture, it includes complete sets of such journals as Liebig's Annalen; The Berichte; the Journal of the London Chemical Society; The Chemical News; The American Chemical Journal; the Journal of the American Chemical Society; Fresenius' Zeitschrift für Analytische Chemie; the Chemisches Central Blatt; Die Versuchs-Stationen and the Journal of the Society of Chemical Industry, etc., etc. Current numbers of these great journals are kept on file, and are easily accessible to students at all times. This, in itself, is one of the most important factors in Chemical instruction.

## POST-GRADUATE WORK IN C H E M I S T R Y

Abundant facilities are afforded for post-graduate work in Chemistry. The State College admits to all lines of post-graduate study the graduates of other schools and colleges of corresponding grade and standing. In order to obtain the Degree of Master of Science (in Chemistry), the student must have the degree of A.B. or B.S. or the equivalent thereof, and is required to do at least one year's resident, or two years' non-resident work in advanced Chemistry, as a major study and one or two minor subjects, assigned by the Faculty.

## F E L L O W S H I P S

As an aid to deserving students, and as a reward of merit, two Fellowships in Chemistry are awarded at the close of each collegiate year. Seniors and post-graduate students are eligible to appointment. The emolument accruing from the Fellowship to the under-graduate student is \$100 per annum, whereas that accruing to the post-graduate student is \$150 per annum. One Fellow in Chemistry is expected to assist in preparing the experiments for the lecture table, the other is expected to assist in the instruction of laboratory classes.

## AID FOR CHEMICAL RESEARCH FROM THE CARNEGIE INSTITUTION OF WASHINGTON

It is, perhaps, known to the majority of our readers, that last year Mr. Andrew Carnegie placed at the disposal of the United States Government the sum of ten million dollars, the interest on which was to be expended in the promotion of Scientific Research in this country. On this magnificent endowment the Carnegie Institution of Washington has been founded. Among its other plans for the promotion and encouragement of scientific investigation in this country, it was decided by the authorities of the Carnegie Institution to establish and maintain out of its funds a certain number of Research Assistants. These Research Assistants were to be appointed from young men and women of promise and ability throughout the United States. They were to receive liberal compensation for their services, amounting in most cases to \$1,000.00 per annum, in return for which they were expected to devote themselves entirely to the study and investigation of some scientific subject under the direction and guidance of some competent investigator. According to the first annual report of the Carnegie Institution, twenty-five Research Assistants were appointed in 1902. It is gratifying to record that one of these appointments went to Mr. Elias Elvove, one of the Senior students of the Chemical Department. This is certainly a splendid tribute to the industry and ability of Mr. Elvove, and a well deserved recognition of the work that is now being done in the Chemical Department of the institution.

## THE WORK OF THE GRADUATES OF THE CHEMICAL DEPARTMENT

The work of the graduates of the Chemical department, after leaving the institution, has always been a matter of pride and satisfaction to those concerned. Of the young men and women who have completed the chemical course, some are now engaged in the work of Chemical Industries, some are instructors in Chemistry and related sciences in larger institutions of learning, and some are chemists in Agricultural Experiment Stations, and without a single exception all who have had the opportunities of still higher education, have taken all the University honors to which they were eligible, and all have done highly creditable work in their respective vocations. The following is a list of the graduates and post-graduate students of this Department, together with certain data as to their work since leaving the institution.

offered an interim instructorship, filling in for Mr. Zimmerman who was on leave in 1931-32. My applications for teaching assistantships in some fifty other universities having turned up only two inadequate offers, I accepted the instructorship. Mr. Zimmerman's untimely death during the year raised my rank a bit, but the failure of the university to pay the last third of the year's salary dimmed the prospect of survival. I did hang on though with annual dismissals at budget time in the spring and reappointment in the fall whenever larger classes were enrolled.

The department during those depression years included Professors Tuttle, Maxson, Bedford, Barkenbus, Mitchell, Stewart, Miss Love (departmental secretary) and an infamous pride of young lions with no tenure and few expectations. Keller, Krewson, Gabbard and Baker. The main thrust of the department was teaching and the esteem went to the students in the industrial chemistry program—essentially five years of work condensed into four. But it must be said that the stringent first two years left their marks on students even in other fields.

This trend was evident as far back as 1909 when Murray Raney graduated in mechanical engineering and went on to make such important theoretical and industrial advances with nickel catalysts. And in 1917 when Louis Ware graduated from the 'Norwood School of Mines' and went on to found and preside over the International Minerals and Chemical Corporation.

I have encountered many others who profited from the chemistry offerings. From the list of one-hundred medalists of 1965 I recognized eleven who at some time indicated to me their joy at having taken the courses. Five of them I taught and many were pre-meds. One not yet in the hall of distinguished alumni became my colleague at Northwestern as dean of the medical school.

Research in the department previous to 1941 was a subject of much conversation but little action. The instructors were busy at it and all of us worked out our doctorates at major universities with only short leaves for dissertation research. After 1933 my instructorship was served in organic chemistry and

my association with Dr. Barkenbus became both more fruitful and enjoyable. My teaching included the course for home economics majors, qualitative organic and full responsibilities for all the laboratories in the division. By adapting a storeroom-prep. room adjoining the main laboratory to use for research space I could keep one eye on the students while carrying out my own experiments with reagents and supplies within easy reach. With a good library, again with thanks to the vigilance of Dr. Barkenbus and with plenty of time, I managed a half-dozen publications in about that number of years. I fabricated the glassware and instruments and did all the experimental and analytical work with my own hands—a regime that became invaluable in later years as I directed doctoral students in their research. Generally, the areas of my research could be classified as hazardous, difficult, or objectionable; difficult in the sense that the compounds were often sensitive to water, air or shock; objectionable in that the odor of ketomercaptans and the isocyanides are almost unbearable. The hazards, aside from

working with liquid HCN, dry diazonium salts, tear gases, etc. came from working many times when no one else was even in the building. Fortunately, in over forty years of laboratory work I never suffered an injury that could not be covered with a small bandaid. But it was not all luck because very early I developed the habit of working at the semimicro scale.

By choosing such research conditions I was assured privacy and freedom from competition. A couple of projects brought me some elements of fame. The one on 'Whiskey Verdigris' in 1937 stirred the industry because it accounted for some of the copper in the liquor and added about ten new organic compounds to the list of known congeners. It was not a happy thought that I was about announce that ethyl linolate for example was contained in the state's most celebrated product. I built a 'Large Spinning-band Fractionating Column' from the floor of my office through a hole in the ceiling and into the attic above. Its construction used all my manual skills and cost \$300, but its output was less than one ml. per day. News about this also leaked out and brought me visits from the revenueurs who held that before I started the first run I must have a distillers license.

My fame was growing as a 'Kentucky' chemist. I was asked to analyze various messes and did help an industry set up to extract certain acids from tobacco stalks. Some work on nicotine removal from cigarettes was forty years ahead of its time in showing that the taste goes with the alkaloids and tars. An outlandish call for help came from the superintendent of the signal system for the Kentucky Division of the Southern Railroad. During some unseasonably cold weather the semaphores had been down (red) and neither had the trains been

able to move nor the signal man sleep. In calling on me he was grasping at last straws and looking at amateur approaches, so out on the system we go in a gas-powered hand-car staring into box after box containing the mechanisms and shorting the rails to actuate movement of any kind. The motors would start then labor and quit. I jumped to the conclusion that frost building up selectively on the copper commutators was the seat of the difficulty. A combination of serendipity, a smattering of surface chemistry and nucleation—and a recollection of the odor of camphor in old silver chests led to the suggestion that we buy out the Lexington supply of gum camphor and put some in every signal box. By the greatest of good luck by noon the trains were running, the Super was in bed asleep and I was as I remember \$50 richer—groceries for two months!

A turning point in my career came in the spring of 1939. Having been given a sabbatical with half-pay of \$900 I was fortunate enough to win a Rockefeller grant through the General Education Board. The purpose of the grant was to upgrade the competence and opportunities of southern collegiate teachers and the stipend was magnificent. The 'Southern' part of the conditions was gratefully negated two years later with the beginning of a most fruitful relationship with the foundation.

I had twelve months to take all the examinations and do the doctoral dissertation at Wisconsin. In fact all was finished within seven months and I had a good summer's rest. The year had been the most important one of my life. I had been immersed in an intellectual atmosphere at a depth never before experienced and I had won the confidence of my preceptor, Homer Adkins, who a year later literally named me to the new post at Northwestern.

The year back at Kentucky was another turning point. I started a line of research that later was turned toward quinoline chemistry on a project at Northwestern. Further I began to do many small services, synthesis of special compounds, purification of others for NDRC contractors around the nation. I wound up the year by teaching in the summer of '41 a class aimed at training powder and explosives experts for the armed services.

It was a great disappointment in the spring of 1941 when the department's recommendation for a significant raise in salary was not to be granted. I wrote Dr. Adkins that my hopes seemed futile and soon Northwestern offered a tenured position at nearly twice the Kentucky salary. After being released by Rockefeller and warmly encouraged by Professors Barkenbus, Bedford and Mitchell I accepted.

At Northwestern I was involved almost exclusively with the graduate program and was put on the committee which appointed fellows and assistants in the department. By January my other committeemen had been called to military assignments and for the 'duration' I alone did the job and could manage because my war effort was right there. I became co-director, with Professor Byron Riegel of a large group working for the Committee on Medical Research, OSRD. This responsibility also required constant search for trained people.

I was elated with teaching, particularly, the returning war veterans and I enjoyed research—still continuing to do much of it myself in order to have a feeling for the problems facing my students. Then too I enjoyed the camaraderie of the chemistry faculty. We brown-bagged it every day for lunch and attendance was almost universal with the topics of discussion completely so. Visitors were simply brought in and left to defend themselves for past sins. I remember 'Doc' Barkenbus being there once and handling himself quite well indeed.

Gradually my activities as recruiter-financial aid officer spread to much wider fields and the move to embrace those responsibilities in the whole graduate school seemed quite natural to me. By 1946 I had developed a network of mutual friends for the exchange of students. The base was the 'Big Ten' and lest that be considered too provincial, it must be considered that the province produced a third of the nation's Ph.D's.

These experiences with admissions requirements and a reputation for tough adherence to high standards brought many rewards. I became involved in the establishment of conditions for nearly all the national fellowship programs. These included NSF



1934 CHEMISTRY FACULTY AND STAFF. From left: W. H. Keller, C. Barkenbus, M. H. Bedford, O. J. Stewart, F. E. Tuttle, C. F. Krewson, Miss Love, R. N. Maxson, R. H. Baker, J. R. Mitchell, J. L. Gabbard.

## Department of Chemistry

University of Kentucky

### Banquet

in honor of

Dr. Franklin Elliott Tuttle



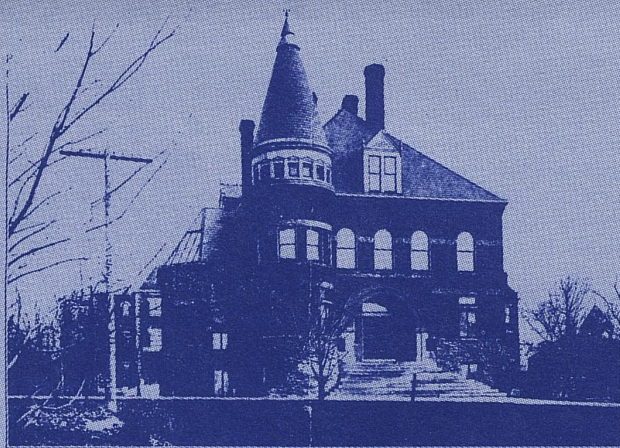
1906

1934

Monday, May 28, 1934

8:30 P. M.

Red Room, Lafayette Hotel  
Lexington, Kentucky



CHEMISTRY BUILDING 1905

#### M E N U

Half Cantaloupe, Lillian Russell

Celery      Radishes      Olives

Broiled Steak, Butter Sauce

New Potatoes, Parsley Butter      New Peas, Casserole

Hot Rolls      Coffee

Tomato Stuffed with Cottage Cheese and Pecans  
Mayonnaise

Fresh Strawberry Parfait

Layer Cake

Graduate and Cooperative, Woodrow Wilson, Fulbright, the 'Iron Curtain' as we called it, the NDEA Titles IV and II and the African Graduate. I also worked closely with the Institute of International Education on their programs. During my service on the committee of twelve for the NDEA Title IV we distributed more than a billion dollars worth of fellowships.

There was in my office a bound copy of the 'Proceedings of the Association of American Universities' and I became a thorough student of that organization which had been founded for the sole purpose of enhancing the strength of doctoral education in America. I was not alone in perceiving that much of the responsibility for the attainment of that goal fell on the graduate deans, but among them I was not outdone in efforts to achieve cooperation through friendship. This led to honors including the chairmanship of the Big Ten group (twice) and the Presidency of both The Midwest Conference for Graduate Study and Research and the Association of Graduate Schools in The Association of American Universities. As senior dean in the latter I had met often with the presidents and for a dozen years served with two of them on the committee for membership.

Finally I wish to express my warmest thanks to the University of Kentucky for the preparation for life it offered me and for the honors it bestowed upon me: the Centennial Medal in 1965, the Honorary degree in 1968 and the call to speak for my class of 1929 on the occasion of its fiftieth anniversary.

#### 1929

Letter from W. Marvin Baker, Bowling Green, KY.

Following is a brief resume of my activities since leaving the University:

#### 1929

Graduated from the University of Ky., Lexington, Kentucky. Received a B.S. degree in chemistry.

#### 1929-30

Chemistry teacher and assistant football coach, Middlesboro High School, Middlesboro, KY.

#### 1930-31

Returned to UK as laboratory assistant in organic chemistry under Dr. Charles Barkenbus and received a masters degree in June, 1931.

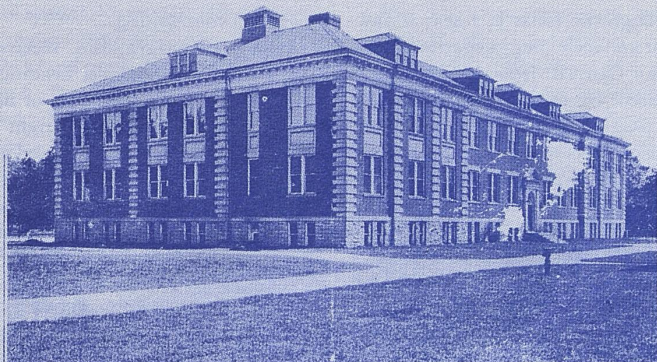
#### 1931-32

Chemistry and physics teacher Bethel Junior College, Russellville, KY.

#### Summer 32

Returned to UK and began work under Dr. Barkenbus toward my Ph.D.





KASTLE HALL 1934

PROGRAM

- M. HUME BEDFORD, *Toastmaster*  
 DAVID W. YOUNG . . . . . *Violin Selections*  
 MRS. GULLIS at the Piano  
 F. L. McVEY . . . . . *President of University of Kentucky*  
 P. P. BOYD . . . . . *Dean of College of Arts and Sciences*  
 A. O. SNODDY . . . . . *Alumni*  
 JOHN J. OWEN . . . . . *Students*  
 G. DAVIS BUCKNER  
 R. N. MAXSON  
 F. E. TUTTLE

September 1932-January 1933

Chemistry teacher and dean at Bethel College, Russellville, KY.

January 1933-42

Chemistry teacher, Western Kentucky State Teachers College (now Western Kentucky University), Bowling Green, KY.

1942-75

Special Agent of Federal Bureau of Investigation assigned to Washington, D.C. and other offices on the East Coast and last assigned to the Louisville office from which I retired in 1975.

1975-present

Own and operate dairy and cattle farm in Warren County Kentucky and reside in Bowling Green, Kentucky with wife, Hildegard Masey Baker.

Professors Tuttle, Bedford and Barkenbus are best remembered by me. They were great teachers and were an inspiration to their students. Professor Barkenbus was, of course, my favorite and his untimely death was a great loss to the University.

1929

Alex Black, State College, PA, sent the following letter:

Having graduated with a major in chemistry in 1929, I was fortunate in securing a job at the Pennsylvania State University as an assistant in animal nutrition in the Institute of Animal Nutrition made famous by Dr. H. P. Armsby with the use of the respiration calorimeter. One unique aspect of locating at Penn State was my major professor, Dr. F. E. Tuttle, who went from Pennsylvania State to Kentucky to be head of the chemistry department. The year 1929 was the start of the great depression and to be able to start in your chosen profession was indeed fortunate.

Much of my work during the first years at Penn State was with the famous Armsby Calorimeter dealing with energy metabolism of farm animals. In 1933 I was given a leave to study at the University of Rochester where I earned the doctor of philosophy degree in nutrition at the Medical School.

Continuing in various phases of energy metabolism at Penn State until World War

II days, I was then commissioned as a captain in the Sanitary Corps as a nutrition officer and spent 4 years from 1942-1946 in the army, with the last two years in the European Theatre. Being assigned to district, base and theatre headquarters gave me an opportunity to be involved in nutritional problems of the army as well as to experience the final phases of the war.

Returning to Penn State after the war, I resumed research activities on energy metabolism subjects mainly with a moderate amount of teaching. I have some 30 publications which were published in various technical and professional journals—mainly, the Journal of Nutrition and the Journal of Animal Science. I served a term on the Editorial Board of the Journal of Nutrition.

I was promoted through the professional ranks reaching full professor in 1946, then assistant director of the Pennsylvania Agricultural Experiment Station in 1953 and associate director in 1960.

Responsibilities in the station encompassed almost every phase of the station's activities. The major administrative duties included management of the publications program, grants for research projects and the college of agriculture's building program.

I was involved in a significant role in the design, coordination of research work with various public and state agencies and organizations, regional and national projects and federally associated experimentation.

I served on several committees of the Association of Land-Grant Colleges and State Universities and as chairman of the Committee of Nine, a statutory committee of the U.S. Department of Agriculture.

I am a member of the American Institute of Nutrition, American Society of Animal Science, Sigma Xi, Alpha Chi Sigma, Gamma Sigma Delta, Pi Mu Epsilon and the New York Academy of Sciences.

I retired in 1969 and have since been spending summers in State Colleges and winters at Fort Myers Beach, Florida. I continue in some committee work and have been active in alumni management of my social fraternity, Delta Chi, for many years.

A word or two about life as an undergraduate at Kentucky. Those were enjoyable years and Professors Tuttle, Barkenbus and Mitchell did much to make chemistry an exciting subject to study and pursue. Working in Dr. Barkenbus' organic laboratory was an experience not to be forgotten. Dr. Tuttle was instrumental in my association with Penn State and was an inspiring teacher and man.

# ALUMNI NEWS

**David W. Young**, received a B.S. in Industrial Chemistry in '31 and an M.S. in '35. He has moved to Park Forest South, IL. He maintains a very active consulting career after his long time experience in the petrochemical industry. We will include a more complete resume in our special section in the next Newsletter.

**H. Philip Orem**, B.S. received in Industrial Chemistry in '32 and an M.S. was received in '34. After two and a half years of graduate work at Penn State, he joined Calco Chemical Co. in 1937 and in succession served as research chemist, assistant chief chemist and technical supervisor of the Azo Dyes and Intermediates of the American Cyanamid Co. to 1950. He then joined the staff of Sheffield Steel and Iron Co., which became U.S. Pipe and Foundry Co. and finally Jim Walter Corp. where he was group leader of chemical research. He retired in 1975 and now does consulting work.

**J. Ralph Vannoy**, B.S. received in Industrial Chemistry in '33. Retired in 1974 after a forty year career with Exxon Chemical Co. holding various executive positions, the last of which was manager of the polyethylene plant in Baton Rouge, LA where he now resides.

**Charles C. Randall**, B.S. received in '36 and retired July 1, 1978 as Professor and Chairman Emeritus, Department of Microbiology, University of Mississippi Medical Center, Jackson. He received his M.D. in '40 from Vanderbilt. He is engaged part-time in virological research at the Medical Center.

**Thomas B. Nantz**, B.S. received in Industrial Chemistry in '37. Died Monday, December 17, 1979 after suffering a heart attack while on vacation in Naples, FL. He was the retired executive vice president of B. F. Goodrich Co. In 1947 he was made production manager of Goodrich's nitrile rubber plant in Louisville and in 1952 was named plant manager of the company's vinyl monomer plant in Calvert City, KY. He was a resident of Aurora, OH. He was a member of the UK Development Council, a UK Fellow and was a recipient of the Distinguished Alumni Centennial Award in 1965. He is survived by his wife Mary Halley Kerr Nantz and two daughters.

**Donald W. Riester**, B.S. received in Industrial Chemistry in '37. We were sorry to learn from Mrs. Ethel H. Riester that Mr. Riester died on January 30, 1980 after a distinguished career in industry and government. He had additional studies at the University of Chicago, Columbia, UCLA and George Washington University Law School.

He rose through the ranks in research and development and technology departments in the American Can Co. from 1937 to 1972 when he retired. His expertise was in metal, paper and plastic packaging. He attained the positions of director of research and vice president of the corporation. His second career was from 1972-78 with the Bureau of Foods, Food and Drug Administration, Washington D.C. as deputy director receiving two awards of merit from the F.D.A. Mrs. Riester resides in Santa Rosa, CA.

**Richard L. McConnell**, B.S. received in '48. Recently was appointed senior research associate in Tennessee Eastman's Research Laboratories. He received an M.S. and a Ph.D. degree from the University of Virginia under a Du Pont Fellowship. He has been active in the American Chemical Society, Sigma Xi and is a member of the UK Alumni Board. He and his wife, Carolyn, have a son, Richard L., Jr., in Arlington, VA and two daughters, Ann M. Johnson of Louisville and Elizabeth, a student at Vanderbilt.

**Clifford J. Webster**, M.S. received in '48. He is the analytical laboratory supervisor at Monsanto Textiles Company in Decatur, AL and has industrial retirement in view.

**Saul Gordon**, M.S. received in '49 and his Ph.D. was received in '51. He is the President and Founder of The Center for Professional Advancement in East Brunswick, NJ. The Center is the world's largest private non-degree educational institution offering continuing technical education with over 300 individual courses currently available, in many cities in the U.S., Switzerland and Holland. Courses are given by outstanding experts during intensive two to five day sessions. Recently the 50,000th participant was given a handsome award and scholarship to attend another course. Saul was chairman of the chemistry department at Farleigh Dickinson University before starting the Center.

**W. M. (Bill) Keely** received one of our first Ph.D. degrees in '49. Since that time he has been engaged in catalysis research in Louisville, KY, now with United Catalysts. He was the course director for a four-day course in Catalyst Selection and Evaluation in September at The Center for Professional Advancement in East Brunswick, NJ.

**William E. Sweeny**, B.S. received in Industrial Chemistry in '49. He is the director of the Plastics Laboratory, Texas Eastman Company, Division of Eastman Company in Longview, Texas. Our apologies for reporting this information last year under the name of Siveeny-honestly it's our poor eye-

sight-not your writing.

**Ivan J. Goldfarb**, B.S. received in '53. He is a research chemist heading a group characterizing new polymers of interest for aerospace applications at Wright-Patterson Air Force Base, OH. He received an M.S. in '55 and a Ph.D. in '59 from the University of Cincinnati. He has three boys, the oldest is majoring in physics and mathematics at the University of Cincinnati.

**Thomas A. Gover**, B.S. received in '55. He is a professor of chemistry at Gustavus Adolphus College, St. Peter, NM. He received a Ph.D. degree in 1960 from the University of Wisconsin.

**Gladys L. Menges (Maloy)**, B.A. received in '56. She has been a computer consultant since 1962 in scientific applications development, with a current project for Hydrogen Corporation investigating solar applications in Florida. She has been a member of the town council, Town of Mangonia Park, Florida since 1969 and Mayor since 1975. She was a past member of the Board of Trustees of Sullins College, Bristol, Virginia; current vice president and member of the Board of Directors, Ballet Arts Foundation, a regional ballet company and school; author and publisher of EQUESTRICISE, an exercise program for the equestrian.

**John W. Ryan**, Ph.D. received in '57. He is the director of corporate research at Dow-Corning in Midland, MI. He received an AMP from Harvard University in 1979. He reports that there are three UK Alumni living on the same block in Midland, himself, Frank Brown and Ronald Blumenshine. We always enjoy visiting during his annual recruiting trips to UK. He is also primarily responsible for the recent grants we have received from Dow-Corning.

**Donald R. Rogers**, B.S. received in '59, M.S. received in '61 and a Ph.D. was received in '68. It really didn't take ten years for him to get his Ph.D. degree. He started work at Monsanto's Mound Laboratory in 1961 and given a leave to obtain his Ph.D. He is an expert in radioisotopic materials, radiochemical fuels and nuclear safeguards. In January 1980 he was named a Monsanto Fellow to recognize his significant, continuing technical contributions. He was cited for his ability to combine theoretical and practical experimental skills and his ability to perform original research to meet the evolving needs of Monsanto's Facility and U.S. Department of Energy. He is the second UK graduate to receive this honor, the other being Ed Griffith, who received his Ph.D. in '51 and who is a Senior Monsanto Fellow.

The positions allow almost complete freedom to select research problems. Don is the author of 'Handbook of Safeguards Measurements Methods' and is modelling material control systems for several NRC licensee fuel fab plants. Too bad you weren't at Three Mile Island when they needed you.

**Charles A. Daniels**, B.S. received in '62. He received a M.D. degree from Vanderbilt in 1966 and a Ph.D. from Duke in 1971. He currently is an associate professor of pathology at the Duke University, School of Medicine.

**Robert D. Fields**, B.S. received in '62. He obtained a M.D. degree from the University of Tennessee and is now a surgeon in private practice in Mayfield, Kentucky.

**Thomas C. Vanaman**, B.S. received in '64. He received his Ph.D. degree in biochemistry at Duke in 1968. After postdoctoral work at Stanford University he joined the faculty in the department of microbiology and immunology at the Duke University Medical Center where he rose through the ranks to professor in 1979. He has over thirty publications and is serving on the editorial board of the *Journal of Biological Chemistry*.

**Nicholas R. Jurich**, B.A. received in '65 and a M.D. was received in '65 and a M.D. was received in '70. He is in private practice in Prestonsburg, KY.

**James W. May, Jr.**, AB received in '65. He completed his M.D. degree in 1969 at Northwestern. He is assistant professor of surgery at Harvard, Medical School and chief of hand surgery at Massachusetts General Hospital. Besides his professional activities he keeps busy being the father of two children and numerous animals.

**Gerald Roehrig**, Ph.D. received in '65. He is an assistant professor of chemistry at the Oral Roberts University.

**Richard Cox**, Ph.D. '66 left NIEHS at Research Triangle to join Phillip Morris Research in Richmond, VA.

**James Duffy**, Ph.D. received in '66. He is the director of technology at Hooker Chemical Co. in Niagara Falls.

**Kishore Nadkarni**, postdoctoral fellow with Dr. Ehmann in 1966 and his wife, Nancy, have a new child, Sharmila Renee, born May 28, 1981.

**Judith York Smith**, B.A. received in '66 and M.A.T. degree from Duke University in 1972 and teaches chemistry in Jordan High School, Durham, NC.

**John L. Daniel**, Ph.D. received in '68. He is a process supervisor in the Textile Fibers Department of Du Pont in Old Hickory, TN. He and his wife, Ginger, have two children, Sharon and Mark. Ginger teaches English at Hendersonville High School.

**William Fisher**, Ph.D. received in '68. He is senior chemist with Dexter Chemical Corp. in Bronx, NY. He is in charge of R and D for new products and the analytical work. His most important syntheses are Surelle 10, Muri 7 and Neil 2.

**Lewis L. Nunnelley**, B.S. received in '68. He received his Ph.D. degree in nuclear chemistry from Oregon State and is an instructor of physics at Chemecta Community College in Salem, Oregon. He took a leave from his teaching duties to enroll in the school of Engineering at the University of Washington in Seattle.

**Theodore Phillips II**, Ph.D. received in '68. He is an assistant professor of Aviation Technology at Embry-Riddle Aeronautical University at Daytona Beach, FL. Prior to that position he was a postdoctoral fellow with Dr. Kartha at Roswell Park Memorial Institute in Buffalo, NY doing x-ray diffraction studies of anti-cancer drugs.

**Thomas Fangman**, Ph.D. received in '69. He obtained a M.Ed. from Rutgers in 1980 in administration and supervision. He is science supervisor in the New Providence, NJ School District. He is serving as president of the New Jersey Science Teachers Association, was co-chairman of an Institute on Religion in an Age of Science Conference at Star Island, NH. His wife, Paula Hunt, received her Ed.D. in 1971 and is a member of the I.R.A.S. Executive Board. He is a member of the New Jersey Department of Education Committee on Safety in the Laboratory.

**Steve Hannum**, Ph.D. received in '69. He is teaching in the Department of Chemistry at Asbury College, Wilmore, KY.

**Michael Lupin**, a postdoctoral fellow in 1968-69. He is a senior research officer at the Dead Sea Works in Beer-Sheva, Israel, involved in the development of processes for new products.

**Glen Possley**, Ph.D. received in '69. He left Texas Instruments and joined the Mostek Corporation in Carrollton Texas. He married Patricia, who also works at Mostek. They have a busy household with four children: Lonnie Mullen, Susann Mullen, Kerie and Nick with their activities in Lewisville, Texas.

**Robert W. Young**, B.A. received in '69. He has received his M.D. and M.P.H. degrees. Governor Bill Clinton appointed Dr. Young to serve as director of the Arkansas department of health in Little Rock. He and his wife Brenda have two children, Phillip and Allison.

**John O. Eaves**, B.S. received in '70. He has been named Visiting Fellow at the Cooperative Institute for Research in Environmental Sciences (CIRES) of the University of Colorado and the National Oceanic and At-

mospheric Administration in Boulder, Colorado. After receiving his doctorate in theoretical chemistry from the University of Wisconsin, Eaves assumed the position of Research Associate at the Joint Institute for Laboratory Astrophysics of the University of Colorado and National Bureau of Standards. In his new position at CIRES Eaves will design theoretical models for predicting the rate of molecular cluster growth in the atmosphere, work which will contribute to a better understanding of atmospheric pollution.

**Clifford D. Miller**, Ph.D. received in '70. He is chairman of the Sci/Math/Tech Division at Mountainview College, Dallas Texas. He is developing curriculum in chemical quality control for paints and coatings, water quality and food technology.

**Don Showalter**, Ph.D. received in '70. He is a professor at the University of Wisconsin, Stevens Point, and received an award for outstanding teaching.

**David L. Greene**, Ph.D. received in '71. He finished his term as chairman of the department of physical sciences at Rhode Island College in Providence. After spending the summer of 1980 doing research at the University of Colorado, he was appointed to the position of dean of Arts and Sciences at Rhode Island College after serving one year as acting dean.

**Fred M. Hawkrige**, Ph.D. received in '71. He is an associate professor at Virginia Commonwealth University in Richmond, VA. He presented invited talks at the 1980 Gordon Research Conference on Electrochemistry and the Conference on Radical Ions. His research on heterogeneous electron transfer by biological molecules is supported by grants from NIH and NSF.

**Patricia M. Santoliquido**, Ph.D. received in '71. She joined the U.S. Department of Energy's New Brunswick Laboratory as a chemist in the standards and reference materials section in July 1980.

**Alvin Ray Crook**, B.S. received in '72. He changed careers from chemistry to scientific computer programming, developing software for laboratory minicomputers for nuclear power plant efficient monitoring. He is an applications engineer with Applied Physical Technology in Smyrna, GA. He also became a certified mixologist from the Georgia School of Bartending.

**Ronald Sensmeier**, M.S. received in '72. He is a member of the Association of Official Analytical Chemists in the Department of Biochemistry at Purdue University and regularly attends meetings of the AOAC.

**Karen Cisler Moore**, B.S. received in '73. She is an associate chemist at the Institute for Mining and Minerals Research at the

University of Kentucky working on trace element analysis of fossil fuels and related materials.

**Richard A. Pacer**, A postdoctoral fellow in 1973-74 is a professor of Chemistry at Indiana, Purdue University in Fort Wayne Indiana.

**Melvin Sensmeier**, M.S. received in '73. He is an engineer III, at Potter and Brumfield, Division of AMF in Princeton, IN.

**William Reid Thompson**, B.S. received in '73. He received an M.S. in biophysical chemistry at Cornell in 1976 and is completing a Ph.D. degree at the Laboratory for Planetary Studies at Cornell. He was an investigator on the Voyager spacecraft mission with Dr. Carl Sagan. His research is in using light scattering theory for planetary atmospheres and laboratory simulations of atmospheric reactions and measurements of spectroscopic properties of photochemically produced P, S, N compounds.

**William Dennis James**, A postdoctoral fellow in 1974-76 left his position as Senior Research Scientist at the Research Reactor Facility in Columbia, MO to join the Center for Trace Characterization at Texas A University.

**John P. Moteow**, Ph.D. received in '74. He is a senior analytical chemist with Exxon Chemical in Baton Rouge, LA.

**Ahid Ali-Rumana**, A postdoctoral fellow

in 1975-76. He is a Senior Geologist at Atlantic Richfield Co. in Lafayette, LA, after serving two years with Amoco in New Orleans.

**J. Preston Miles**, Ph.D. received in '76. He has been promoted to manager of Analytical Research and Development at Ross Laboratories in Columbus OH. He taught an evening freshman chemistry course at Capitol University in 1979. He and his wife, who is a counselor at the Southeast Columbus Mental Health Center, have two children. Preston points out that even though John Mottow left Abbott, there still remains five UK graduates with the Abbott connection: Miles, Phil Davis, Plaszc, Bauer and Granneman.

**Byron Keith Christmas**, M.S. received in '76 and Ph.D. received in '78. He is a research chemist at Celanese Plastics and Specialities Co. in Jeffersontown, KY, which involves research on emulsion polymerization of vinyl acetate and acrylates for uses in coatings and non-woven binder applications.

**Doris Huang Su**, M.S. received in '76. She lives in Hockessin, DE with her husband, Paul, who works at Hercules. She is planning graduate work at Villanova University.

**John Bauer**, Ph.D. received in '77. His wife, Katherine Steinmetz Bauer, received her B.S. in '75. They live at 1223 Colgate

St., Wilmette, IL. Katherine received an M.S. degree in 1979 from Northwestern and is working on a Ph.D. in the field of laser spectroscopy, studying the relationship of hydrogen bonding to fluorescent lifetimes. John is a team leader in the analytical research department of Abbott Labs approaching five year's service. He and Andy Plaszc are organizing a loosely structured alumni society called 'The Third Weekend in August Society' (T'WAS) which has some occasional reunion picnics. They would welcome responses from alumni at UK from 1965-77. A reunion is being planned for August 21, 1982 in Lexington. Please contact John Bauer as soon as possible if you are interested.

**Edward Kaiser**, B.A. received in '77. He received an M.S. from Wright State University in Dayton, OH. He is a first lieutenant in the U.S. Air Force at Wright-Patterson AFB, OH, where he reviews and analyzes U.S. and foreign government chemical reports and publishes a collective interpretation.

**David A. Hrovat**, B.S. received in '79. He is continuing graduate work at Columbia University and received an M.A. in 1980 from Columbia.

**Terry Scahill** completed his Ph.D., May 1981. He was promoted to Scientist I at Upjohn Co. and will be in charge of their new 500 MHz NMR system.

## Financial Report

One of the provisions of the **Anna S. Naff Endowment Fund** which supports the Annual Symposium on Chemistry and Molecular Biology is to provide a published financial statement of the Fund periodically. We felt it would be most appropriate to publish the report in our Alumni News to inform many who have benefited from the Symposia. The Fund was established to stimulate thought on, understanding of and insight into the chemical processes in living things.

SYMPOSIUM DATE	CHAIRMAN	TOPIC	SUPPORT
3/28/75	J. W. Wilson	Immunoglobulins	\$1,104
3/26/76	J. M. Patterson	Nucleic Acids	1,050
4/1/77	W. T. Smith	Protein Structure	1,197
4/31/78	D. E. Sands	Control of Enzymes	1,500
4/23/79	R. D. Guthrie	Genes and RNA	1,500
4/25/80	D. A. Butterfield	Cell Membranes	2,292
4/24/81	J. W. Wilson	Transmembrane Signalling	2,380

Endowment Fund Reserve 7/1/81 — \$41,044

## News from the Faculty and Staff

**Tom Attig** has resigned to accept a position with Standard Oil of Ohio in Cleveland, OH.

**Rodney Black** is retiring effective September 30, 1981, after thirty years of dedicated service to the Department and the University. He attended the ACS workshop on Computers in Chemical Education and has remained active in the Kentucky Academy of Science.

**Carol Brock** presented papers on her research at the American Crystallographic Association in Eufaula, AL and the ACS in Houston, TX in March, 1980. She was on sabbatical leave for the 1980-81 academic year working with Professor J. D. Dunitz in the Laboratorium für Organische Chemie, Eidgenössische Technische Hochschule, Zurich, Switzerland. During the year she gave seminars on her work at the University of Zurich and Berne in Switzerland, and the Weizmann Institute in Israel. In her role on the Public Information committee of the ACA, she prepared a flyer entitled 'Careers in Crystallography'. She was Program Chairman of the March, 1980 ACA meeting. She has received a grant from the Petroleum Research Fund to support research on crystal packing in substituted biphenyls. She is chairman of the Lexington section of the ACS for 1981-82.

**Ellis Brown** presented talks on his research at the Southeast ACS meeting in Roanoke and New Orleans. He was presented the 1980 Distinguished Scientist Award of the Kentucky Academy of Science at its fall meeting at Northern Kentucky University in 1979. He is the General Chairman of the 33rd annual Southeastern ACS Meeting in Lexington November 4-6, 1981.

**Edward Burton** resigned his position as lecture demonstrator to move to Florida. That position has been 'frozen' during the financial crisis.

**Allan Butterfield** was appointed University Research Professor for the 1980-81 academic year, during which time he was relieved of his teaching duties to devote full time on research. He was appointed to Biophysics and Biophysical Chemistry Study Section A of the NIH, Spring 1980 meeting, the NIH Site Visit Study Section, Summer 1980 and to the advisory board of the Southeastern Electron Spin Resonance Research Center, University of Alabama. He presented invited seminars at the University of Chicago, Duke, University of Maryland, St. Jude Children's Research Hospital and Ohio State. He was invited to write a critical review of 'Electron Spin Resonance in Disease'

for the continuing series Biological Magnetic Resonance. He was invited to speak at the 1980 Gordon Research Conference on Magnetic Resonance in Biology and Medicine and invited participant at conferences and symposia on muscular dystrophy and Huntington's Disease at Bethesda, MD, Tott's Gap, PA, Key Biscayne, FL and Minneapolis, MN. He also presented papers at the ACS meetings in Houston, New Orleans and Roanoke and the World Federation of Neurology, Oxford University, England. His research is supported by grants from NIH and the Muscular Dystrophy Association of America. Recently he was elected to membership in the American Society of Biological Chemists.

**Audrey Companion** was re-elected alternate councilor in the COMP division of the ACS. She continues to serve on the ACS National Committee for the Conant Award and the committee for selection of National Academy of Sciences National Research Council Postdoctoral Fellowships. By invitation she is listed in 'Speakers and Tours for ACS-SA Chapters'. She has been asked to serve as consultant in the revived C3S, an ACS-NSF sponsored service designed to assist chemistry departments in the improvement of their programs. After five years as Director of Graduate Studies, Audrey has asked to be relieved of these duties which have consumed much of her time. The Department and students are grateful for her conscientious and excellent service in this area. Her devoted efforts have contributed greatly to improving the quality of our graduate program.

**Paul Corio** will be on sabbatical leave for the 1981-82 academic year at Virginia Polytechnic Institute.

**Bill Ehmman** was appointed as Associate Dean for Research, Graduate School, half-time for two years 1980-82. He continues an active research program in instrumental neutron activation analysis for the determination of trace elements related to human brain diseases, chemical characterization of coal, oil shales and conversion products. He presented invited papers at the Symposium on Chemical Analysis of Coal at the 1979 ACS Central Regional Meeting in Columbus, at the Symposium on Multi-element Analyses at the ACS Southeastern Regional Meeting in Roanoke, VA in 1979, the 65th Annual Meeting of the Kentucky Academy of Science at Northern Kentucky University in 1979 and the ACS/ANS Conference on Atomic and Nuclear Methods in Fossil Energy Research in Mayaguez, Puerto Rico, De-

cember, 1980. He contributed two papers and chaired a session at the 4th International Conference on Nuclear Methods in Environmental and Energy Research, Columbia, MO, April 1980, two papers at the Kentucky Academy of Science in 1980, co-authored a paper on trace elements related to Alzheimer's Disease and Aging presented at the 105th Annual Meeting of the American Neurological Association in Boston, MA, September 1980 and presented another at the 6th International Conference on Modern Trends in Activation Analysis in Toronto, June 1981. His research is supported by grants from the NIH, Institute of Mining and Mineral Research and the Aluminum Association, Inc.

**Phillip E. Fanwick** attended the Gordon Conference in Inorganic Chemistry at New Hampton, NH and the ACS meeting in New Orleans, December 1980. He has received grants from the Research Corporation and the ACS-PRF to support his research on rhodium(I) phosphine complexes and polymeric platinum complexes.

**Homer Grimes**, head storekeeper, retired after 30 years of service. He was wined, dined and properly 'roasted' at a reception at the Spring Lake Country Club. He may be found on the golf course or attempting to catch the rest of the fish he has been unable to lure on his hooks.

**Robert Guthrie** presented an invited talk on 'Electron Transfer Reactions of Carbanions' at the Northeastern Regional ACS Meeting in July 1980. In Fall 1980 he attended the IUPAC Conference on Physical Organic Chemistry in Santa Cruz, CA and contributed to a poster display on mechanistic nomenclature. He plans to attend the 31st IUPAC General Assembly in Leuven, Belgium, August, 1981 to promote the system of mechanistic nomenclature at a meeting of the IUPAC Commission on Nomenclature. From there he will proceed to Freiburg, Germany to present a paper on 'Recent Developments in Carbanion Electron-Transfer Studies' at the Third International Symposium on Free Radicals. He has presented three papers at the National ACS Meeting, Fall 1979 and a paper at the ACS meeting in Las Vegas, September 1980. His grant from NSF in support of his research has been renewed.

**Jim Holler** attended the Gordon Research Conference on Analytical Chemistry Summers 1980, 1981, the Midwest University Analytical Chemists Conference (MUACC) fall 1980 at the University of Illinois and the Pittsburgh Conference in At-

lantic City, Spring 1981. He also delivered an invited lecture on his research at Miami University in the Spring of 1981. He and his students delivered several papers at the 1980 and 1981 KAS meetings. His book 'Laboratory Electronics for Scientists and Engineers' is scheduled to be in print, November, 1981.

**Jim Kincaid** recently has received funding from the Graduate School and Alumni funds to purchase a Laser-Raman Spectrograph for his research program on the characterization of selectively modified hemoglobins. He contributed three papers at the Kentucky Academy of Science Meeting, fall 1980. He attended the VII International Conference on Raman Spectroscopy in Ottawa, Canada in Summer 1980.

**Bob Kiser**, in 1980, was an invited ACS Tour Speaker on the Palmetto Circuit (Charlotte, NC, Arken, SC, Savannah, GA) and the Chisholm Circuit (Wichita, KS, Ponca City, OK, Bartlesville, OK, Wichita Falls, TX and Duncan, OK). He presented papers at the 27th Annual Conference on Mass Spectrometry and Allied Topics, American Society for Mass Spectrometry, Seattle, WA, June 1979 and at Minneapolis, MN, May 1980. He has received funding from the Ames Consortium, NASA.

**John Layton**, NMR spectroscopist, spent five weeks this Spring in California, taking the Varian XL-200 NMR Service Engineers Course.

**Wilbur C. Mateyka** hosted the first regional meeting of the Midwest, Great Lakes, and Southeastern Sections of The American Scientific Glassblowers Society, April 3-5, 1980.

**Doug Naae** resigned to accept a position with Gulf Petroleum in Houston, Texas.

**Kurt Niedenzu** presented papers on his research at the Max Planck Society, Frankfurt, Germany, October 1980, the German Chemical Society, Munich in 1979 and the 4th International Meeting on Boron Chemistry, Salt Lake City, Utah. He has received research support from the Kentucky Tobacco Research Board and the McDowell Cancer Network. He will be on sabbatical leave the fall semester 1981 at the University of Munich, West Germany.

**Glenn Nutter**, our chief electronics technician resigned to take a position with RCA in Bloomington, IN.

**Jim O'Reilly** spent the 1980-1981 year on sabbatical leave as a visiting scientist in the Division of Chemical Technology at the Food and Drug Administration in Washington, D.C. conducting research on speciation of trace metals in food. He attended the MUACC Meeting, Fall 1980 at the University of Illinois and contributed papers at the 94th Annual Meeting of the Association of Official Analytical Chemists, October 1980,



Washington, D.C., 7th Annual Meeting, Federation of Analytical Chemistry and Spectroscopy Societies, Philadelphia, October 1980, Second Chemical Congress of North American Continent, Las Vegas, NE, August 1980 and the 15th Middle Atlantic Regional ACS Meeting, Washington, D.C. in 1981. Allyn and Bacon recently signed an agreement with Piccin Editore publishers in Italy to publish an Italian edition of the Instrumental Analysis book by Bauer, Christian and O'Reilly. The text continues to sell at the rate of about 5,000 copies annually.

**Merle Pattengill** presented a paper at the Symposium on Molecular Theory of Gases and Liquids, Madison, WI, June 1981.

**John Patterson** contributed papers to the 33rd Tobacco Chemists Research Conference, Lexington, 1979 and 34th Meeting, Richmond, VA, October 1980 and the Kentucky Academy of Science, fall 1980. He presented a paper at the ACS meeting in New Orleans, December 1980. His research was supported by grants from the Tobacco and Health Research Institute.

**Bill Plucknett** attended ACS meeting in Houston, TX, March 1980. He continues as Director of General Chemistry and keeps the faculty and students in line.

**Don Sands** served as Acting Dean of the College of Arts and Sciences, 1980-81 and has assumed the position as Associate Vice President of Academic Affairs half-time starting July 1981. In spite of his heavy administrative duties he continues his teaching and was invited to lecture on Molecular Geometry at the school preceding International Congress of Crystallography in August 1981 in Ottawa, Canada. Besides attending several meetings of deans, he lectured on vectors and tensors, at the School on Crystallographic Computing, American Crystallographic Association, Eufala, AL, Spring 1981.

**Paul Sears** received the UK Alumni Association Great Teacher Award in 1980. He presented a paper at the 31st ACS Southeastern Meeting in Roanoke, VA, October 1979. He is on a two year special assignment

as Director of the Institutional Self-Study and Chairman of the Steering Committee for the Self-Study (a decennial self-study related to the reaffirmation of the accreditation of the University of Kentucky by the Southern Association of Colleges and Schools). He was reappointed as a member of the University Athletics Association Board of Directors for a three-year term.

**Stan Smith** was on sabbatical leave the fall semester 1980 to devote time to the installation of the new NMR facility in the basement rooms formerly the 'bull pen' for entering graduate students. He was invited by Varian Association to serve on the faculty for <sup>13</sup>C NMR Workshops offered nationally; two of which were held at Cleveland State University, May 1981 and Rutgers, June 1981. He presented an invited seminar to the NIH NMR Study Group, Bethesda, MD, October 1980.

**Tom Smith** presented papers at the 33rd Tobacco Chemists Research Conference, Lexington, 1979, the 34th Conference in Richmond, VA, October 1980, ACS meeting in New Orleans, December 1980 and the Kentucky Academy of Science, fall 1980. He was elected president of the AAUP chapter for the 1981-82 academic year. His research was supported by grants from the Tobacco and Health Research Institute. He attended the ACS Medicinal Chemistry Symposium, Troy, NY, June 1980 and the ACS Meeting in Las Vegas, August 1980.

**Laren Tolbert** was promoted to rank of Associate Professor with tenure effective July 1, 1981. His research program in carbanion photochemistry is supported by grants from the Department of Energy and National Science Foundation. He was invited to present a paper at the ACS meeting in New Orleans, December 1980. He presented papers at ACS meetings in Houston, TX, March 1980, and Atlanta, GA, March 1981, the Fourth Annual Conference on Chemical Aspects of Solar Energy Conversion, Department of Energy, South Bend, IN, June 1980 the IUPAC Photochemistry Symposium in Seefeld, Austria, July 1980 and the Universi-

ty of Alabama, Huntsville, AL, March, 1980. A third girl was born November 25, 1979 proving Woodward's Rule 'All organic chemists have girls'.

**Bill Wagner** attended the Southeastern ACS Meeting in Roanoke, VA, Fall 1979 and the New Orleans meeting in December 1980. He participated in the 1980 and '81 meetings of Chairmen of Southeastern Ph.D. granting Departments of Chemistry and attended the Conference on Cooperative Advances in Chemical Science and Technology at Lehigh University, Fall 1980. He was elected to a three year term as faculty member of the UK Board of Trustees.

**Joe Wilson** after a little arm twisting agreed to serve as Director of Graduate Studies, effective June 1981. Send him some good graduate students! He served as chairman of the 1981 Naff Symposium on Chemistry and Molecular Biology.

**Steve Yates** received the University of Kentucky Research Foundation Award 1980-81 for outstanding achievement in research in nuclear chemistry. He will be on sabbatical leave the fall semester of 1981 at Kernforschungsanlage Juelich, West Germany. He presented papers at the American Physical Society, Knoxville, October 1979, ACS meeting, Houston, TX, March 1980 and International Conference on Nuclear Structure, Berkeley, CA, August 1980. He attended the Gordon Research Conference on Nuclear Chemistry, New London, NH, June 1981. He has received grants from the Department of Energy and NSF to support his research. His wife, Linda, has taken a position as a chemist at the Institute of Mining and Minerals Research.

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## New Faculty

Dr. John P. Selegue joined our faculty in August 1980 replacing Dr. Attig. He received a B.S. degree from Miami University, Oxford, OH in 1974, where he received many honors, and a Ph.D. from MIT in 1979 working with Professor Alan Davison. He was a postdoctoral associate at Yale with Professor Richard Adams before coming to our department. He has sixteen publications based on his research. He has received grants from the Research Corporation, ACS Petroleum Research Fund, Sigma Xi, Matthey-Bishop Inc. and Engelhard Industries to support his research on metal clusters and inorganic complexes. He presented a seminar at the University of Cincinnati, February 1981. He is co-authoring a chapter in Comprehensive Organometallic Chemistry (osmium) with Dr. Adams.

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## Recent Graduates

During the 1979-80 academic year the Department awarded eight B.S., five B.A., eight M.S. and two Ph.D. degrees. Those receiving B.S. degrees are: John Gilbert, in UK Medical School; Hosinhon Nguyen, in UK Pharmacy School; Teresa Russin, Graduate School in Biochemistry at UK and William R. Vincent. The following received B.A. degrees: Jean E. Dean, analytical chemist at Monsanto, Nitro WV; Ronald R. Frank, Bobby K. Friley, Ashland Petroleum; Rosemary Miller, Leslie Moosnick, Dental School, University of Louisville; Tamela J. Tinsley, Walter S. Wilson, UK Medical School and Susan C. Wyatt. The M.S. degrees were awarded to John Cangemi, Jane Eldred Goodin, Daniel Goodin, General Atomic Co., San Diego, CA; Elizabeth Kleppinger, continuing on Ph.D. program; Patrick K. Leung, UK Medical School; Richard Read, Graduate Program UK Chemical Engineering; Robert L. Sasser, Graduate Program UK, Chemical Engineering and Stanley Seelig, Allied Chemical, NJ. Ph.D. recipients: Dr. Donald M. Bruser, School of Biological Sciences, UK; Robert C. Young, Babcock and Wilcox, Lynchburg, VA.

During 1980-81, eleven B.S., fourteen B.A., five M.S. and four Ph.D. degrees were granted. B.S. graduates: William E. Bowers, III, Richard C. Davis, UK Graduate School, Chemistry; Larry Green, Wisconsin Graduate School, Molecular Biolo-

gy; Russell F. McWhorton; John Matthews, Illinois Graduate School, Chemistry; Melanie J. Miller, Battelle, Columbus, OH; Rickey J. Moore, Andrew O'Hare, UK Graduate School; George Schneider, UK Graduate School, Chemistry; Stanley Simpson, UK Graduate School, Chemistry; David Waterhaus, Case-Western Reserve Graduate School, Chemistry. B.A. graduates: Jennifer L. Baker, David W. Baston, Auburn Vet School; Stuart Eldridge, University of Louisville Graduate School, Chemistry; James C. Gregory, UK Graduate School, Chemistry; Charles G. Grigsby, Sammy R. Hess, Susan Knoll, Michael D. Kommor, University of Louisville Medical School; Kurt Niedenzu, UK Law School; Kenneth L. Oder, University of Louisville Medical School; Tufan Sener, Blake Townsend, Jeffrey L. Turner, Medical School and Christopher L. Williams. M.S. degrees: Mahfuza Ali, continuing toward Ph.D., UK Chemistry; Mathilda Doorley, Maybelline Cosmetics, Memphis, TN; Peter Doorley, Humko Chemical Division of Witco Chemical, Memphis, TN; Lamar Evans and Sarah Pirtle, UK Medical School. Ph.D. degrees: Jaweed Ashraf, research and teaching associate, UK Chemistry; Nanda Brahme, Drug Dynamics, University of Texas, Austin; Edgar C. Nicolas, Mead Johnson, Evansville, IN; Terrance Scahill, Upjohn Co., Kalamazoo, MI.

# Ashland Oil Foundation Summer Fellowships

Four \$1000 fellowships for the Summer 1980 were awarded to the following students:

Alan M. Kook, a graduate student, received a B.S. degree from S.U.N.Y. at Stonybrook in 1977. His research on multi-nuclear NMR studies was directed by Dr. S. L. Smith. Stephen McClanahan, a graduate student, obtained a B.S. and M.S. degrees from Western Kentucky University. He is in the Ph.D. program, working with Drs. James Kincaid and F. J. Holler studying the kinetics of fast reactions. Stanley Simpson, a Senior, from Sebree, Ky, transferred from Henderson Community College in 1978, and developed an automated system to permit electronic gathering of pH titration data, by flow injection titrimetry under the supervision of Dr. Holler. Gary Willimans, a graduate student, received a B.S. degree in 1975 from the University of Michigan-Flint. He was a graduate student at Michigan State and moved to UK when

Dr. Holler joined our faculty from Michigan State in 1977. He worked with Drs. Holler and Tolbert in developing a totally automated instrument for analyzing photochemical systems. The students and Drs. S. L. Smith and W. F. Wagner enjoyed a visit during the summer to Ashland Petroleum Refinery and Research Laboratories, where the students presented brief seminars to some of the Ashland research staff.

The four \$1000 fellowships for the Summer 1980 were awarded to the following:

Rita Kay Calhoun, a graduate student, obtained a B.S. in 1972 from Morehead, a M.S. in 1975 from the University of Georgia. She taught chemistry at Alice Lloyd College from 1976-79, before entering our Ph.D. graduate program. She is working with Dr. Holler on the applications of computer controlled conductance instrumentation.

Steve Engh, a graduate student, received

an A.S. in 1976 in medical laboratory technology from Harper College and a B.S. in chemistry from Northern Illinois University. His research with Dr. Holler is developing a high performance stopped flow instrument.

Christa Hartmann, an undergraduate changed from a pre-med, biology major to chemistry in 1980 and is working with Dr. Guthrie on an investigative study of tritert-butylphynl radicals and rearrangement via tunneling.

Dwight Weldon, a graduate student received a B.S. from the University of Michigan and a M.S. from Michigan Technological University. After three years as an industrial chemist for Cook Paint and Varnish and Inmont Corporation, he entered our graduate program in 1980. His research, directed by Dr. Kincaid, is using Raman spectroscopy to study the effects of various pesticides on model membranes.

The students together with Drs. Holler, Kincaid and Wagner visited the Ashland refineries and laboratories.

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