



# Association of Indiana University Chemists

## NEWSLETTER

Vol. XVI, No. 2, Fall, 1968

### AIUC MEETINGS

April Fool's Day found a large group of chemists gathered in the Telegraph Hill Room of the Jack Tar Hotel and much of the talk at the Social Hour was not of chemistry but of Indiana University. Among those who signed the guest list were Bob Collins (PhD '65) and his wife, Joan, who are living in Walnut Creek (They did not have to travel so far.); Dick Wen (PhD '62), Lin Dorman (PhD '61), Duane Lehman (PhD '59), all from Midland, Michigan; John (PhD '50) and Ruth McAnally from Occidental College in LA; Fred Mattes (PhD '68) from Willamette University in Oregon; George (PhD '66) and Dian Waldo (BS '66) Kriz from Western Washington State College in Bellingham; Melvin Druelinger (BS '62) from Iowa State University; Charles Rohrer from East Texas State at Commerce; John Tirsell (PhD '66) and Mrs. Tirsell from UCLA; Tal Bosin (PhD '67) from UC at Berkeley; J. Edmund White (PhD '58) from Southern Illinois University; Richard Neithammer (PhD '57) from Presbyterian College, St. Petersburg, Florida; Jay Young (BS '39) from King's College, Wilkes-Barre; and Frank Frayer (PhD '67) from the US Air Force Academy. Paul Monson (BS '67) who is doing graduate work at UC in Berkeley was there, as well as Kenneth Mantei (PhD '68) who is living in Los Angeles, Chris Vogel (PhD '67) from New York City, Gunter Keuhl from Pennsylvania, James McFarling (MA '55) from Columbus, Ohio, and the Rick Kuempels (PhD '67) from Menlo Park, California. Dr. and Mrs. F. L. Kauffman (he received an AM in '39) from Palos Park, Illinois; Jim Egan (PhD '53) from Brookhaven; William Key (BS '48) from Yardley, Pennsylvania; Dr. and Mrs. Lee

Thompson from Lake Forest, Illinois; Marvin Yates (PhD '64) from Arlington, Virginia; Ralph Christofferson (PhD '64) from Lawrence, Kansas; Warren Buddenbaum (PhD '64) from Portland, Steve Humphrey (PhD '65) from Schenectady, New York; Leonard Weinstock (PhD '58) from Rocky Hill, New Jersey. Joe (PhD '52) and Mary Leal from Maplewood, New Jersey, and John Pera (PhD '60) and his wife from Memphis, Tennessee, and Jack (PhD '55) and Jean Young from Oak Ridge were there. Roger Johnson (PhD '66) from Philadelphia and Rod Hamilton (PhD '64) who is at Stanford Research Labs were there. Jack Gill (PhD '63) from Varian Aerograph did not have to travel far since he is located at Walnut Creek, but Bob (PhD '58) and Jean Conley flew all the way from Elizabeth, New Jersey. Bill Thomas (PhD '66) and his wife, Arlan Norman (PhD '66), and Gunter Meier (PhD '64) were also there. Several of our faculty found their way to San Francisco and the Social Hour, too: the Carmacks, the Joe Gajewskis, the Campaignes, Dennis Peters, Ward Schaaap, and Harry Day.

The biochemists among our alumni and friends at the FASEB meeting in Atlantic City got together for a breakfast on April 17 and 38 were present including F. Marott Sinex (MA '45) from Boston U. School of Medicine, Frank Cheng (PhD '57) from State University of Iowa, Wallace Friedberg from Oklahoma City, Edward High (PhD '50) from Meharry Medical College, Jim Groff (PhD '63) from Sterling Winthrop Research Institute, and Bill Rogers (PhD '57) from NIH in Bethesda. David Allman (PhD '64) and W. C. Tan (PhD '66) from the Institute for Enzyme

Research in Madison, Leon Ellenbogen (PhD '54) from Lederle Laboratories, Frank Momany (PhD '63) from Cornell University, and Kay Knight (PhD '66) from the University of Illinois Medical Center. Sid and Becca Fleischer (both PhD '58) from Vanderbilt University were there as was also Jubran Wakim (PhD '65) who is working for Procter and Gamble. Harry Walter (PhD '55) and Lew Graham (PhD '67) from the VA Hospitals at Long Beach and Sepulveda, California, respectively, traveled a long way for the meeting, but Lennie Brand (PhD '60) who is associate professor at Johns Hopkins was close to home. J. F. Bonner of the University of Utah came to the breakfast as did a number of those who are affiliated with the departments of chemistry or biochemistry at Bloomington and Indianapolis: Felix Haurowitz, Lily Yip, Roger Roeske, Harry Day, Lyle and Dorinda Beck, Robert Bullard, David Gibson, Bruce Dunlap, Ron MacGregor, William Berterman, Karl Koehler, David Scott, Nathalie Fedynsky, L. Chang, and Carolyn Fischer. We understand that much exchange of information went along with the excellent breakfast.

#### TREASURER'S REPORT

Balance, 27 February 1968	439.82	
Receipts (contributions from alumni since 27 February)		<u>11.00</u>
		450.82
Expenditures*		
Social Hour, San Francisco	25.00	
Cost of Plaque for Robert Chernin Award	32.58	
Bank service charge	15	<u>57.73</u>
Balance, 25 June 1968		393.09

\*The cost of the Newsletters mailed in December and March is not yet known but with the current Newsletter the balance will be completely zero I am sure. If each person receiving this Newsletter would mail to me the suggested \$1 per year contribution it would help to insure two issues per year, and there would be extra money for the scholarship fund.

Harry G. Day, Treasurer

## DIRECTORY

Work on the Directory of the AIUC is progressing and we are planning to make a limited number of copies this summer. If you have special interest in a copy, please let us know at the time you send in your dues and a copy will be sent to you.

### NEWS OF THE DEPARTMENT

Drs. Eugene Cordes and Terry Jenkins have been promoted to the rank of Professor; and Drs. Jack Crandall, George Ewing, L. K. Montgomery, Charles Parmenter, and Dennis Peters have been promoted to the rank of Associate Professor. Drs. Cordes and Crandall have received Alfred P. Sloan Foundation Fellowships for the period 1968-70. Dr. Parmenter received the 1968 Standard Oil (Indiana) Foundation Distinguished Teaching Award. He was also appointed to the editorial board of the journal Molecular Photochemistry this year. Dr. Felix Haurowitz has been asked to serve as Editor for review articles and book reviews for the journal Immunochemistry. Dr. Peters is co-author with Robert Fischer (formerly of the Department) of a text book, QUANTITATIVE CHEMICAL ANALYSIS, which was published this year in its third edition. The first two editions were authored by Fischer alone.

In addition to their activities at the Spring ACS Meeting, the faculty have been busy giving lectures around the country and in other countries. Dr. Adam Allerhand was chairman of the "Pulse Techniques" session at the Ninth Experimental NMR Conference, February 29, and presented a paper, "Spin Echoes in the Presence of Magnetic Field Fluctuations and Other Disturbances." He also gave a paper, "NMR Techniques for the Study of Fast Exchange Processes," in March, at the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy. Dr. John H. Billman lectured on recent advances in cancer chemotherapy at Aurora College (Illinois) April 24. Dr. Harry Day was chairman of a

session on vitamin A at the Annual Meeting of the Federation of American Societies for Experimental Biology, held at Atlantic City in April. Dr. Frank Gucker presided at a session of the Symposium on Advances in Light-Scattering Methods of Observation and Analysis, which was part of 42nd National Colloid Symposium in June. He also presented two papers at the meeting. Dr. Gucker presented a paper, "Physical-Chemical Studies of Aerosols," at the 61st Annual Air Pollution Control Association Meeting in St. Paul. Dr. Haurowitz was a guest speaker at the Department of Microbiology of the University of Illinois Medical College and presented a lecture on "Antibody Heterogeneity and the Problem of Antibody Biosynthesis." He has been asked to chair symposia at two European meetings, the Federation of European Biochemical Societies, which will meet in Prague in July, and the Society of German Scientists and Physicians in Heidelberg next October. Dr. Haurowitz is also co-chairman of the 1968 Gordon Conference on Immunochemistry and Immunobiology. Dr. L. K. Montgomery presented a paper, "The Question of Aromaticity in 1,6-Methano-1,3,5,9-cyclodecapentaene. An Electron Diffraction Structure Determination," at the Second Austin Symposium on Gas Phase Molecular Structure. Dr. Peters gave a lecture, "Structure and Reactions of trans-Dihydroxotetrachloroplatinate (IV)," at the University of Minnesota in March. Dr. Riley Schaeffer was a visiting Professor in the Department of Chemistry at Kansas State University for a week last May. He delivered several lectures on the general topic of boron hydrides. He also spent several days visiting at the Central University of Venezuela at Caracas, for the purpose of discussing cooperative programs between that University and IU. Dr. V. J. Shiner, Jr. was an ACS Lecturer for the South Central Region and delivered nine lectures in Tennessee, Georgia, and Alabama last Spring. In June he gave the lecture, "Secondary Isotope Effects," at the Gordon Research Conference on the Chemistry

and Physics of Isotopes. Dr. Earl Wehry spoke to the Analytical Subsection of the St. Louis ACS section in April on the topic, "Photochemistry in Analysis." Dr. Ernest Wenkert was asked to be moderator for the European Conference on Stereochemistry at Burgenstock, Switzerland in April.

Five of the faculty are engaged in research or teaching at other locations for the summer. Dr. Russell Bonham is performing research at the Electron Diffraction Laboratory of the University of Paris early in the summer and then he is to serve as an instructor at the NATO Advanced Study Institute, Aarhus University, Denmark. Dr. Ewing is spending the summer in research at the National Center for Atmospheric Research at Boulder, Colorado. Dr. Henry Mahler returned to the Marine Biological Laboratories at Woods Hole, and Dr. Riley Schaeffer is doing research at the Lawrence Radiation Laboratory, Livermore, California. Dr. Harry Shull left in June for a year's sabbatical leave in Uppsala, Sweden, where he will work in the Quantum Chemistry group with P. O. Löwdin.

Dr. C. E. Kaslow will retire from the position of Director of Laboratories in September and will be replaced by Dr. William Streib, who has been working with him for several months in order to learn the job. Dr. Kaslow looks forward to moving to an office/laboratory on third floor and renewing his research efforts in quinoline chemistry. He has agreed, however, to continue his valuable help in the planning and coordination of the new building.

Three new faculty members have been appointed to join the faculty in September. Professor John S. Griffith is interested in theoretical chemistry and theoretical biology. He received the Sc. D. from Cambridge University and is now Professor of Applied Mathematics at Bedford College in the University of London. Professor Donald A. McQuarrie is a physical chemist who will come from the North American Rockwell

Science Center where he has been a member of the Theoretical Chemistry Group. His PhD was earned at the University of Oregon. At Indiana, he will conduct research in the areas of statistical mechanics, quantum mechanics, stochastic processes, and intermolecular forces. Dr. Lee J. Todd (PhD '63) is returning to the Department as Associate Professor. For the past several years he has been an Assistant Professor in the Department of Chemistry at the University of Illinois. He did postdoctoral research at M. I. T. Professor Todd specializes in organometallic chemistry, metal carbonyl chemistry, and synthetic and structure elucidation methods.

Professor Ludvik Bass, Head of the Department of Mathematics at the University of Queensland, Australia, will be a National Science Foundation Senior Foreign Scientist Visiting Professor during the fall semester. His research concerns the development of theories of electrical activity in membranes and the relevance of these theories to biological structure and functions. Professor Walter J. Moore has been working with Professor Bass this year in Australia.

Gordon P. Eckley, Jr., who expects to receive his PhD in physics from IU this year, has accepted a position as Programming Consultant in connection with the new departmental computer, a Scientific Data Systems Sigma 2. He has a BE degree in electrical engineering from Yale.

The computer was installed in the Chemistry Addition last May and is already being extensively used. Accessories to be obtained in the near future will allow connection of research instruments such as the mass spectrometers and nuclear magnetic resonance spectrometers to the computer, and within a year or so we hope to have direct access, through our Sigma 2, to the CDC 3400-3600 computer at the Research Computing Center.

At the annual Chemistry Honors Banquet, 106 students were honored. The winner of the 1968-69 Courson-Greeves Scholarship was

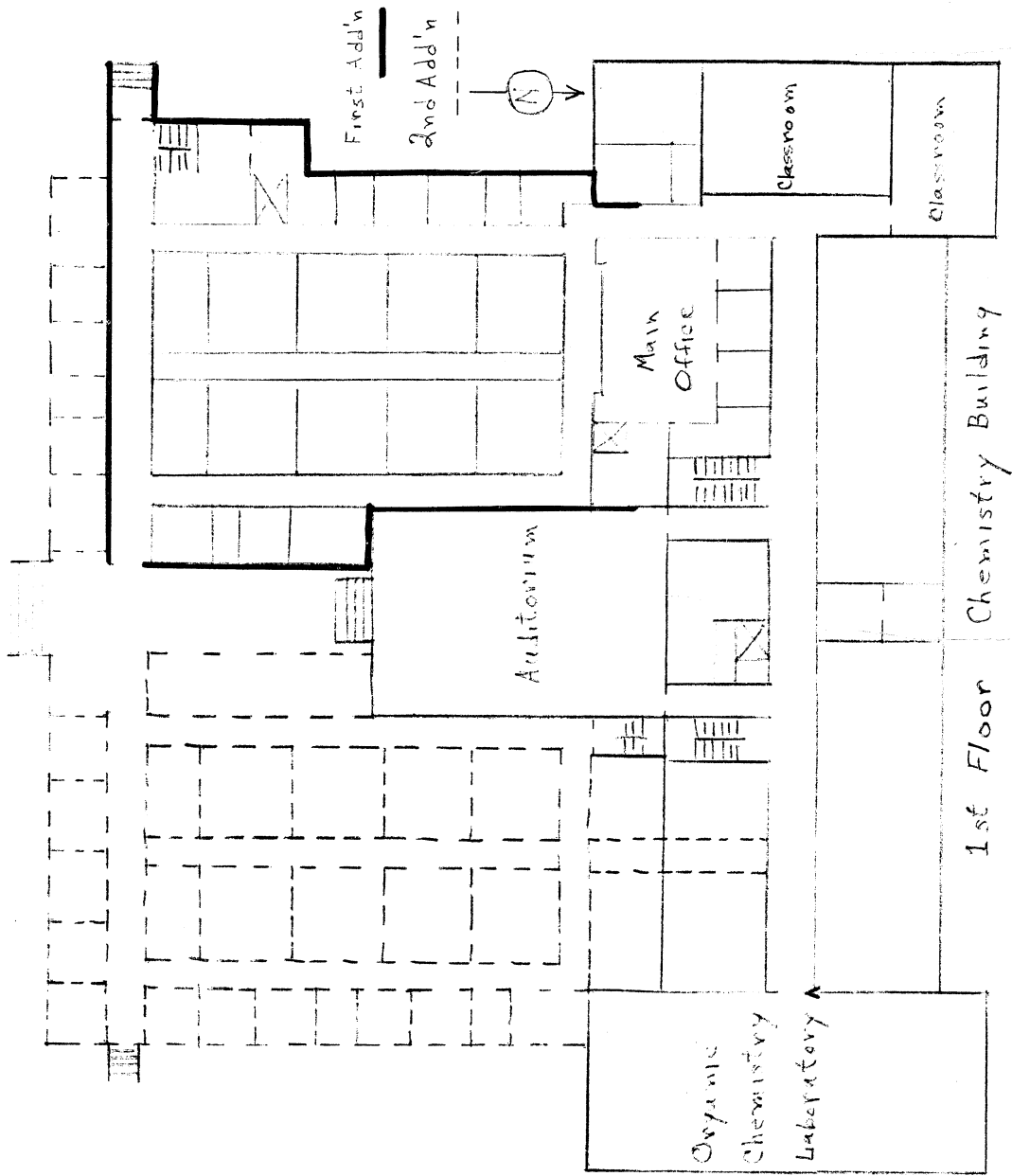
M. Amanda McKee, a junior. Last year's holder of the scholarship, Alan Grosbach, a senior, was named winner of the American Institute of Chemists Certificate. Five persons were chosen as the outstanding students in freshman chemistry. They were: Kirk Robert Wilhelmus, Kenneth L. Shafer, Mark R. Stevens, Kenneth Mickelson, and James F. Brandman. Michael Schuyler was named winner of the Robert Chernin Award for the best first-year graduate research project. Many other awards and special citations were given.

### CHEMISTRY ADDITION PLANS

Due to the fact that so much chemistry space was spread around in other buildings, when the first Addition was completed and occupied in the spring of 1964, it was almost completely occupied, leaving very little for expansion.

It has been planned to extend the second Addition to the south from the present Addition but this arrangement has been abandoned in the interest of general University plans for the area south of the present building. The new location calls for an extension from the east side, mirror-imaging the present addition, with a foyer or arcade area for the rear exit to the Chemistry Auditorium. The two Additions will be connected above this arcade, so that there is ready access from either side.

The accompanying sketch is one of the arrangements being considered. It is expected a final decision will be made next fall and detailed planning may be started at that time. The University architects expect that construction will begin in the summer of 1969, but we have our doubts. In the meantime several more research groups are moving into Wiley Hall in order to relieve the crowded conditions. Dr. Robert Mortimer and his groups moved to Wiley this Spring, Dr. Donald McQuarrie will move into Wiley when he arrives in September, and Dr. Ed Bair will move during the next year, as soon as remodelling is completed.



1st Floor Chemistry Building



FOCUS ON:

TERRY  
JENKINS

(Note: Each Newsletter from now on will contain, in addition to brief news items, an informative article about one member of the Department.)

Dr. W. Terry Jenkins joined the faculty as Associate Professor of Chemistry in 1966, and has just been promoted to Professor.

Although he was born in the U. S., Dr. Jenkins grew up in England where his father was employed by an American company after Dr. Jenkins was two years old. He attended Heversham Grammar School and subsequently received his bachelor's and master's degrees from Magdalene College, Cambridge University. He returned to this country and held an NSF National Fellowship throughout his doctoral program at MIT. Before coming to Indiana, he was Assistant Professor of Biochemistry at the University of California, Berkeley.

Dr. Jenkins and his wife and children (ages 9, 6, and 5) live on ten acres of land north of Bloomington which they plan to develop into a pony farm. He has a twin brother, John, who is a chemical engineer in research for Shell Development in Houston, Texas.

Dr. Jenkins describes his current work in enzyme chemistry as follows:

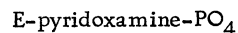
"In order to understand the unique features of enzymic catalysis, substrate specificity and

unusual catalytic ability, one has to characterize the enzyme-substrate intermediates involved and the nature of the chemical reactions by which they are interconverted. Unfortunately, few of the usual methods used by physical organic chemists can be employed. For example, because enzymes exhibit marked restrictions in their substrate specificities, it is not possible to draw conclusions from systematic structural alterations in the substrate.

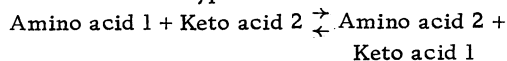
"The most useful approach is the identification of the intermediates by spectroscopy in the visible and near ultraviolet regions. For most enzymes, however, this method cannot be used because the spectral changes are too small to measure accurately and because the intermediates are so labile that they exist only briefly after the enzyme and substrate have been mixed.

"To overcome these disadvantages, we have isolated a series of enzymes which interact with their substrate amino acids by forming Schiff's bases with the firmly bound chromophore pyridoxal phosphate, a derivative of vitamin B<sub>6</sub>.

"Much of our research has been concerned with transaminases, a class of enzymes which catalyze the following reaction:  
 $\alpha$ -amino acid + E-pyridoxal-PO<sub>4</sub>  $\rightleftharpoons$   $\alpha$ -keto acid +



Although the transamination is, strictly speaking, between the amino acid and the enzyme-bound chromophore, two such reactions are coupled in living tissues which contain catalytic enzyme concentrations, to yield the overall metabolic reactions of this type:



The principal advantage offered by this class of enzymes arises from the fact that the reactions are reversible. This means that although the complexes are very labile they may be readily observed in the steady state equilibria in the presence of both reactant and product.

"Because we can observe the intermediates it has been possible for us to study the specific step in the catalysis in which the covalent bond is broken. We have also been able to study the sequence in which the bonds between the enzyme and substrate are formed, reactions which primarily determine the substrate specificity. The latter work introduces elements of the chemistry of inorganic chelate complexes into enzymology."

#### NUCLEAR MAGNETIC RESONANCE LABORATORY

The NMR laboratory is under the supervision of Mr. Arthur Clouse, a specialist in the field. A full time technician has been added to the laboratory during the past year because of the increased usage of the facilities. The original NMR spectrometer (1960) has been updated to a modern flexible precision instrument and a new HA-100-IL spectrometer was acquired last year. One of the accessories added, a multiple frequency generator, allows the performance of a rapid-scan, a frequency sweep and spin decoupling. Another improvement in the usefulness of the facilities was the addition of a time averaging computer.

The laboratory does routinely NMR determinations for  $H^1$ ,  $H^2$ ,  $B^{10}$ ,  $B^{11}$ ,  $Cl^{35}$ ,  $F^{19}$ ,  $Br^{79}$ ,  $K^{39}$ ,  $Co^{59}$ ,  $O^{17}$ ,  $Al^{27}$ ,  $P^{31}$ , and by special arrangements for  $C^{13}$  and  $S^{33}$ . There is the capability of doing about forty different nuclei. For H, D, B, F, and P, the determination may be made in a temperature from  $-100^{\circ}$  to  $200^{\circ}C$ .

Graduate students and other research personnel whose work depends upon very frequent usage of a spectrometer are taught and supervised in the use of the special instrument, otherwise the spectra are run either by Mr. Clouse or the assistant. The general research groups are instructed in the use of a less precise proton NMR Spectrometer and allowed to run their own determinations on it.



N. M. R. Laboratory

An electron spin resonance spectrometer is also located in the NMR laboratory and under the supervision of Mr. Clouse.

Dr. Adam Allerhand, a recent addition to the faculty, has special interests in pulsed nuclear magnetic resonance research. His work involves the study of fast rate processes by means of proton and fluorine Spin-Echo NMR, the indirect determination of nitrogen-14 relaxation rates in liquids, electrical field effects in NMR, and halide ion NMR and relaxation.

#### FROM THE GRADUATE ADVISOR'S DESK

During the past semester 184 students were doing graduate work and all were receiving support as fellows, trainees, teaching assistants or research assistants. This Spring there were 72 fellowship and traineeship holders, 37 on research assistantships and 75 were serving as teaching assistants. There were also 38 post-doctoral research associates in the Department.

The latest ACS Directory of Graduate Research lists Indiana University at 18th in total size in terms of graduate study in chemistry. The Department also ranked 8th in the nation in number of PhD degrees in chemistry granted during the two year period 1965-67.

If the Draft Boards do not deplete our lists too much, this fall we expect to have 65 new entering graduate students to work toward either MS or PhD degrees and 14 are being admitted to work toward the Master of Arts for Teachers degrees.

Of those who have completed their work in the past twelve months we find a wide distribution of geographical location and type of work they are now pursuing. Among those the following were not reported in the earlier Newsletter:

Frank Frayner who completed work for a PhD in physical chemistry with Dr. George Ewing is now teaching at the U. S. Air Force Academy; Fred Mattes, who completed his work in inorganic with Dr. Schaap, is teaching at Willamette University (Salem, Oregon); George Pauli, whose work was with Dr. Bonham in physical chemistry, is now on the faculty of Lancaster College (Easton, Pennsylvania); Henry Longerich who worked under Dr. Peters, and his wife (MS '67 with Dr. Cordes in Biochemistry) traveled all the way to the cold country where he is now Assistant Professor at the University of Alaska. John Tonnis who has continued his work with Dr. Billman after completing his PhD last winter with him, will be moving on to Wisconsin State University (LaCrosse) as Assistant Professor of Chemistry.

A number of our recent graduates are either now working as postdoctorals or will be in the fall. They include: Carl Phillips (worked with Dr. Schaeffer in inorganic) at Ohio State University; Ralph White (thesis in organic with Dr. Campaigne) at the University of North Carolina; Carl Cotman (majored in biochemistry with Dr. Mahler) now at University of California at Irvine; Gary Dutton (also with Dr. Mahler) in Department of Molecular Biology, Albert Einstein University, Bronx; Tony Hugli (worked with Dr. Gurd in biochemistry) will report in September to work at the Rockefeller University in New York City;

Stewart Schneller (who worked with Dr. Campaigne in organic) at Stanford U. ; Kern von Hungen (worked with Dr. Moore in biochemistry) went to the Department of Chemistry and Molecular Biology at the University of California (Berkeley); Hao-Lin Chen (worked with Dr. Ewing in physical) also at the University of California (Berkeley); and Chun-che Tsai has stayed here for postdoctoral work with Dr. Streib with whom he worked for his PhD in physical chemistry. Emil Wildman who left us some time ago to work at Allied Chemical and returned this winter to take his oral and complete his degree work, has returned to Allied.

Carl Sigel who completed work for the PhD with a major in organic chemistry has not given your editors any information about his present whereabouts, but we assume he is busy learning more chemistry.

Mary Morris Hill who did her work for the MS with Dr. Schaeffer, followed her husband, David J. T. Hill (who had been a postdoctoral research associate with Dr. Gucker) to Queensland, Australia. We do not have any current information about Jane Heard who received an MS this year.

#### ACTIVITIES OF PLU, 1968

1967-68 was a fruitful year for Omega chapter of Phi Lambda Upsilon. Past programs were revamped and several new programs were started. The annual picnic was deemed a huge success. It should be noted that everyone who has been associated with the Chemistry Department is invited to attend this event which is held in the early fall. New activities this year included initial work toward the preparation of a safety manual and a program to increase graduate student interest in and contact with colloquium speakers. Informal meetings with the speakers were arranged and were called useful and beneficial by both the students and the visiting lecturers. Thirty-one new members were initiated at the Spring Banquet, bringing the current resident membership to a total of 102.





### GETTING TO KNOW YOU - Sparks

William J. (AM '29) and  
Meredith Pleasants (AM '28)

Dr. William Sparks received his AB in 1926 and AM in 1929 at Indiana University before going on to the University of Illinois where he was granted the PhD in 1936. Dr. Meredith Sparks received an AB in 1926 and the AM in 1928. She also completed work for the PhD degree at the University of Illinois in 1926.

Bill's career has been an illustrious one as most of the readers know (see Newsletters for '63, '64, '65, '66). Assuming this pre-knowledge by the reader, we wondered what the Sparks were doing now.

Your Editor has learned that while Bill has "retired" he is keeping busy as is also Meredith. Mrs. Sparks obtained an LLB from Rutgers University School of Law in 1958 and became a patent attorney and member of the Florida bar (planning ahead at the time for Bill's retirement.) She practiced patent law in New Jersey, taking time out to travel with Bill during his "tour" as President of the American Chemical Society. He received an Honorary Degree from Michigan Technological University in 1966 as well as an Honorary Sc. D. degree from I. U. It was after

these events that he retired, giving them an opportunity to move to Florida for a much needed rest and for Meredith to set up her legal practice in Miami.

She has a beautiful office in the DuPont Building overlooking Biscayne Bay. Her partner is John Cyril Malloy, a very competent young patent attorney who is Dade County's leading trial expert in the field of patents, copyrights and trademarks. His degree in engineering makes a good combination with Mrs. Sparks' chemical patent background. Although Florida is not one of the more active states in chemical invention, she has some clients from other states who find Florida an attractive place for a winter conference.

The Sparks joined the beautiful Riviera Club in Coral Gables and Bill has been practicing on his golf game with the ambition to shoot his age but he is still some strokes on the high side yet. He explains this by the peculiar equilibrium between giving up old jobs and taking on new ones. Last year he was elected a member of the National Academy of Engineering which is a unique experience for a chemist. This July he became National Chairman of the Scientific Research Society of America. This is a national association of industry and government research clubs which has been closely associated with Sigma Xi.



He has also consented to run for nomination as American Chemical Society Director for the Fourth District (Southern). The Sparks spent the summer in Westfield, New Jersey where Mrs. Sparks worked for Merck Pharmaceutical as a patent attorney. On their way to New Jersey they stopped at Atlanta where Bill gave a talk in honor of Orville May who received the gold medal of the American Institute of Chemists.

Their children, a chemist-housewife, an M. D., a lawyer-housewife, and one in medical school are all married and living near Westfield. They are proud of the five grandchildren.

#### NEWS OF ALUMNI

Edward Tom Marquis (AB '61) who received a PhD from the University of Texas in 1966 has been promoted to Senior Research Chemist at the Jefferson Chemical Company in Austin. Lloyd Miller (BS '47) reports that he has been with National Distillers Products Co. for sixteen years.

Jerard Hurwitz (AB '49) was elected a member of the American Academy of Arts and Sciences. According to a note on research discussed at the 33rd Cold Spring Harbor, N. Y. Symposium on Quantitative Biology, Dr. Hurwitz is one of the scientists studying the possibility that at least one (perhaps both) of the strands of double-stranded DNA replicates in short segments (called "Okazaki fragments") about 1000 nucleotides long which might be joined through phosphodiester linkages by an enzyme called polynucleotide ligase. The findings of the group of scientists independently studying this raise the possibility that DNA polymerase is not the only enzyme responsible for replication.

Wendell W. Meyer (PhD '62) has been named supervisor of Research Placement in the Professional Placement Department of the Dow Chemical Company. He will be responsible for the selection and transfer of doctoral level personnel at the Midland location. Ramon F. Rolf

(AB '51), Director, Corporate Recruiting at Dow, bylined an article in TIME April 5, 1968, on employment.

George Kriz, Jr. (PhD '66) after postdoctoral work in France and at Ohio State University, is now Assistant Professor of Organic Chemistry at Western Washington State College in Bellingham.

We were very sorry to learn of the death of Paul Silva (PhD '53) on 18 February this year. He had been working recently for the DuPont Co. In addition we have learned of the deaths of several others who received degrees in chemistry in the past, including Isidore H. Fuhs (AB '05) on 10 July 1967; Claude D. Holmes (AM '10) on 5 February 1968; Bernard D. Ravdin (BS '16) on 20 October 1966; and John A. Danglade (AB '16) on 7 February 1968.

A recent letter from W. T. Rinehart (PhD '40) tells us that he is in charge of arranging for seminars and evening classes given on the Rocketdyne Company grounds, designed to fight technical obsolescence and improve the overall capability of our scientists and engineers and for the last two years he has been teaching a class each semester and each summer on "Chemistry and Physics of Propellants for Rocket Engines and Aircraft." The latter experience he reports finding most gratifying.

Grace Chiu, who served for two years as postdoctoral research associate with Dr. Gucker and more recently has been teaching at the Chinese University in Hong Kong, will be serving as Assistant Professor of Chemistry at the University of West Florida, Pensacola, Florida in 1969.

Richard B. Jackson (PhD '68) has received an NIH Postdoctoral fellowship to study biomolecular structures with C. H. Carlisle at the Department of Crystallography, Birbeck College (London).

Elmer Williams (PhD '59) who heads the solid state research group at the Owens Illinois Technical Center, Toledo, is currently Chairman of the Toledo Local Section of the ACS.

James Grutsch (BS '51) of the manufacturing department, American Oil collaborated with Dr. H. E. Ries, Jr. of the Company's Research and Development Department in designing a system to remove oils and other contaminants from water surfaces. This work was reported at the meeting of the Petroleum Chemistry Division at the 155th ACS National Meeting.

Elizabeth Fraser (AB '42) is now teaching in the Department of Home Economics at I. U. Michael Sela who worked here several years ago with Professor Haurowitz returned to campus this past March to give a Colloquium address. He is now Professor of Chemistry in the Department of Immunochemistry at the Weizmann Institute of Rehovath, Israel. Among other visitors to the Department this spring were: LeRoy Dugan, Jr. (BS '37), David Banks (BS '67) who is now a student at UC (San Diego), Sarah Zimmerman (MA '61) now at the Department of Biochemistry, Wayne State University School of Medicine, who told us about watching some of the rioting and burning in Detroit last fall from the vantagepoint (?) of her apartment, Charles Sharp (PhD '66) now in Seattle, Washington, Norman Sweeny (AM '51) from 3M Company in St. Paul, and Max Marsh (BS '47) and William Bromer (PhD '53) from the Lilly Laboratories in Indianapolis.

We were very happy to have Agustin (Gus) Pulido (PhD '61) from the Department of Chemistry, University of the Philippines at Diliman, Q.C. visit here for several days in early May. He was touring a number of American Universities.

Evelyn (Sisson) Frohman (BS '43) dropped by this spring with her children to show them the department where she and Charlie spent

many long hours. She tells us that Charles (BS '44) had a very stimulating and exciting trip to Russia last fall to attend a Symposium at which some of his work was featured. He is now in the Psychiatry Department at Wayne State Medical School and they are living in Grosse Pointe Woods, Michigan.

A letter from Ruth Ann (McClure) Sanders (BS '67) reported that she and Scott are living in Cambridge where he is working on his doctorate in English literature. She is working part time in the Biochemistry Department under Dr. V.P. Whittaker, with the work ranging from literature searches to bibliography preparation to filing and running enzyme assays.

#### ALUMNI BEQUEST SPECIAL MONEY

The Indiana University Foundation has received a \$50,000 bequest from the estate of the late Mrs. Marie Grim of Montgomery, W. Va. to establish a scholarship fund in chemistry.

The fund is to memorialize Mrs. Grim's husband, Dr. Reuben J. Grim (PhD '41) who was head of the Chemistry Department at West Virginia Institute of Technology in Montgomery at the time of his death in 1958. Throughout the years Dr. and Mrs. Grim were loyal to I. U. The University and the Department are indeed grateful for their generosity.

\* \* \* \* \*

#### YOUR NEWSLETTER STAFF

- E. Greene . . . . . Editor  
L. Crum, C. E. Kaslow and D. G. Peters  
. . . . . Contributors  
H. G. Day . . . . . Consultant

# HELP

# HELP

# HELP

Your editors need your help. We need news either of you or any other alumni about whom you can give us information. Below is a form to make easier for you to send us news;

Name \_\_\_\_\_

Address \_\_\_\_\_

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News \_\_\_\_\_

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