

DEPARTMENT OF CHEMISTRY

THE UNIVERSITY OF KANSAS LAWRENCE KANSAS 66045

July 1, 1986 - June 30, 1987

THE CHAIRMAN'S REPORT

As always, the past year's activities and high-points are too extensive for me to describe in the short space allotted by the editor, this year again Bert Reynolds. Most of the major news items are described in detail in the following sections of the newsletter so I will just highlight them for you. They include the recruiting of two outstanding new faculty, namely, Dr. George Wilson (who will be the first Higuchi Distinguished Professor of Bioanalytical Chemistry) and Dr. Craig Lunte (who will join us as assistant professor of analytical chemistry). Sadly, we have unfortunately lost a great friend and colleague with the recent and untimely passing of Professor Takeru Higuchi. The impact of Tak on the community, the University and the chemical sciences will be a lasting one and we share with his wife, Aya, the great loss. Our faculty continue to receive national attention as particularly evidenced by the prestigious and coveted Guggenheim Fellowship award to Professor Shih-I Chu for the summer and fall of this calendar year.

On still other points - the Department continues to show vigor, growth and excellence in its teaching and research programs. I am pleased to report that Dr. Barbara Schowen has been appointed to the richly deserved position as Associate Professor of Chemistry and Coordinator of Undergraduate Studies. Barbara will be working closely with other faculty in assuring that our undergraduate program continues to provide the academic excellence and topical timeliness for which it has been widely recognized and appreciated. Related to this, two of our faculty, Professor C.A. (Bert) Reynolds and Professor W.J. Argersinger Jr., have just completed their penultimate years in active teaching, so we must begin to plan for their replacement at the end of the 1987-88 academic year. Finally, I will call your attention to two reports of events during 1986-87 which were grand successes, the College Teachers Alumni Reunion last June 19-21, and the Graduate Research Symposium this past March 6-7.

Your correspondent in this opening segment has now completed seven years in the post as Department Chair, which, as many of you know, is two years longer than initially planned. I have formally announced my desire to leave administrative tasks behind me in order to return to full-time teaching and research activities. A search committee, ably chaired by Professor Richard Schowen, is presently formulating plans for seeking and identifying a replacement. I will continue functioning in this position (for a reasonable period, not forever!) while the search for my successor proceeds. It is too soon to give you a complete assessment, but I can report to you that the years have been exciting, challenging and rewarding. While I have had the dubious distinction of being the only chair to have had to endure two state budget rescissions, it has been an exceedingly great pleasure to have been involved in the acquisition of no less than ten faculty and professional staff during this period of time.

Bert Reynolds is retiring as my trusted Associate Chair at the end of this summer so that his last year may be spent full-time in the professional activities that attracted him to K.U. forty years ago. My colleague in the physical division, Prof. Peter Hierl, will replace Bert during the coming year. As my own tenure ends I nevertheless look forward to sharing front-office responsibilities with Peter.

Best wishes to all of you and keep us posted on your own activities!

Marlin D. Harmony

CAMPAIGN KANSAS

Planning is well underway for a major fund-raising campaign at the University of Kansas. An executive board, composed of 15 key business and higher education leaders from throughout the region, has been formed to organize the campaign.

Chancellor Gene A. Budig announced that the campaign, which will be led by The Kansas University Endowment Association, will have a significant impact on the future of the University, its academic programs and its level of excellence. Although a final goal for the campaign has not been determined, the executive board's preliminary estimates place the financial objective well in excess of \$100 million.

Many of you undoubtedly recall the numerous ways that endowment funds strengthened your academic experience in chemistry at KU. You may remember the special endowed colloquia series, the summer and academic-year fellowship support, and travel support to attend ACS meetings. You may not have known that your graduate research advisor was in the laboratory in the summer, rather than out painting houses, because he or she was supported by an Endowment Association summer grant. Or, that those new pieces of instrumentation you used in your undergraduate or graduate research were purchased with endowment funds.

Without the loyal support of thousands of alumni and friends such as you, the quality of Kansas Chemistry would not be what it is today. KU's alumni and friends supported the University during a major campaign once before. In the 1960's, the Endowment Association launched the "Program for Progress," with a goal of \$18.5 million. More than \$21 million was given, and at that time this total represented the second largest private campaign at a state university.

With a major fund-raising campaign for KU in the immediate future, 1987 is an exciting time to become an important part of a superior University, which is growing in academic excellence and prestige. Your support for KU Chemistry can help maintain and improve its level of excellence for the benefit of the young men and women of this region.

COLLEGE TEACHERS REUNION

A reunion of our Ph.D. alumni who are teaching in colleges and universities was held on campus between June 19 and 21. Thirty alumni from all over the country attended the reunion, many of them with their families.

The meeting opened with a reception for alumni, faculty, and family members at the Adams Alumni Center on Thursday evening the 19th. The next day there were morning and afternoon business presentations by members of our faculty. Marlin Harmony, our Chairman, gave an overview of the current status of the Department. This was followed by talks bringing our alumni up-to-date on some of the research currently in progress. Ralph Adams spoke on "Brain Chemistry", Dick Schowen on "Bioinorganic Chemistry", Tom Engler, Joe Heppert, and Carey Johnson, the newest members of the faculty, on their research in areas of organic, inorganic, and physical chemistry respectively, and Ted Kuwana on "Bioanalytical Research." The morning meeting closed with questions and comments on the talks by members of the audience.

That afternoon the major contributions to the program were made by selected alumni. Samuel von Winbush of SUNY/College of Old Westbury, Jo A. Beran of Texas A & I University, and Sheldon Cohen of Washburn University gave their views of teaching and research in a liberal arts tradition. Then Kenneth L. Marsi of California State University at Long Beach discussed the role of a faculty member in a large research-oriented university. Marsi's talk was followed by one on the recruiting of graduate students by Dan Quinn of the University of Iowa. Finally, there were four small-group discussions that dealt with how the start made at this reunion in bringing alumni and faculty together to discuss their mutual problems could be expanded and developed in the future. The day ended with a dinner at the Adams Alumni Center.

On Saturday morning Wes Elliott of Fisk University summarized the results of the group discussions and a spirited discussion followed. That ended the formal business of the reunion. The rest of the morning consisted of visits to laboratories in Malott Hall and on West Campus. The reunion ended with a picnic at Clinton Lake.

The reaction of alumni and faculty to the reunion was one of enthusiasm. There is no doubt that there will be similar meetings in the future. The recommendations of the discussion groups were widely accepted by the faculty and are in process of being implemented.

GRADUATE RESEARCH SYMPOSIUM

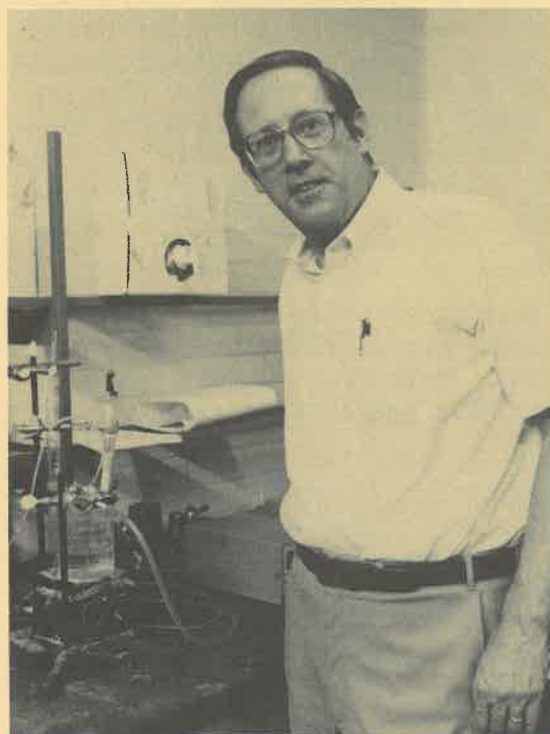
This spring, the Chemistry Department held its first Graduate Research Symposium to introduce undergraduate juniors and seniors to recent advances in modern areas of chemical research and to the graduate program and research opportunities in chemistry at the University of Kansas. Thirty-three undergraduates from eleven states and twenty colleges and universities attended the symposium over the weekend of March 6 and 7, 1987.

Research symposium sessions dealt with research in bioanalysis, enzyme action, organometallic chemistry, ultrafast laser spectroscopy, coordination chemistry, chemistry of schizophrenia, spectroscopy with monochromatic radiation, organic synthesis, and molecular modeling. Other sessions dealt with the graduate curriculum and with career options in chemistry. The weekend activities also included a tour of Lawrence, directed by tour guides Bill and Marnie Argersinger, a dinner at the Castle Tea Room, and a mixer at the Alumni Center.

A sizable fraction of the students who attended the symposium were recommended to us by our chemistry alumni, and as a result of this symposium, several students will begin graduate studies at Kansas this coming Fall.

NEW FACULTY

The Department of Chemistry is pleased to announce that George S. Wilson, at present Professor of Chemistry at the University of Arizona, will join our faculty in August. He will be the first Higuchi Distinguished Professor of Chemistry and Pharmaceutical Chemistry, a position which honors the late Takeru Higuchi, who passed away in March.



George Wilson

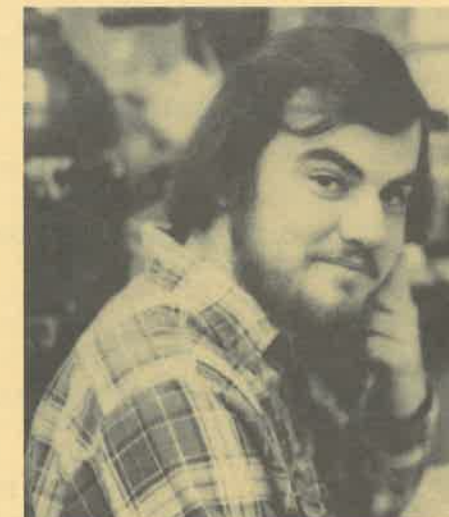
Professor Wilson was born in Bronxville, New York, in 1939, and received his A.B. degree from Princeton in 1961. His graduate work was done at the University of Illinois where he received his M.S. in 1963 and his Ph.D. in 1965. After a two-year post-doctoral appointment at Illinois, he joined the faculty at Arizona in 1967.

Professor Wilson has established an international reputation in the area of bioanalytical chemistry, ranging from his early studies on the electrochemistry of porphyrins to enzyme electrodes, and more recently into the electrochemistry of sulfur compounds and immunochemistry. He is also currently engaged in research to develop a reliable biosensor which can be implanted to detect minute changes in blood glucose levels, and he is also actively working in the field of flow-injection immunochemistry.

His research is currently funded by the National Science Foundation and the National Institutes of Health, and he is bringing six graduate students and three post-doctoral research associates with him to Kansas.

Professor Wilson is a Fellow of the American Association for the Advancement of Science, is on the Editorial Board of Biosensors and the Board of Directors of the Society of Electroanalytical Chemistry, and is Professeur Associe of the University of Paris.

We are also pleased to have Craig E. Lunte joining us in August as Assistant Professor of Analytical Chemistry. Dr. Lunte did his undergraduate work at the University of Missouri at Rolla, and received his doctorate from Purdue, where he worked with Peter Kissinger. He then stayed on at Purdue for a year of postdoctorate work before joining Proctor and Gamble as a bioanalytical research scientist. In 1986 he accepted another postdoctorate appointment at the University of Cincinnati working with Bill Heineman.



Craig Lunte

Dr. Lunte's research interests are in the general areas of electrochemistry and chromatography, with special focus on enzyme cofactor function and reaction mechanisms, drug metabolism, and trace determination of organic compounds in environmental and biological samples.

32nd ANNUAL AWARDS BANQUET

The annual Departmental Honors luncheon was held in the Kansas Room of the Kansas Union on May 2, 1987. Alfred J. Lata again served as toastmaster, and after all the awards were presented, Sheldon H. Cohen (Ph.D. 1962), Professor of Chemistry at Washburn University, Topeka, Kansas, addressed the audience concerning some of the key problems confronting scientists today.

General Chemistry: One-semester course (A \$35 book certificate)

Slade Eric Griffiths

General Chemistry: Two-semester course (A \$35 book certificate)

Tak Pui Tam

David A. Slade

Thomas W. Burgoyne

Organic Chemistry: One-semester course (A \$40 book certificate)

John B. Pascarella

applications of physical chemistry to drug design, delivery and analysis. He trained more than 200 doctoral and post-doctoral scientists, published more than 300 publications, and held more than 50 patents.

Soon after coming to Kansas in 1967, he persuaded the ALZA Corporation to establish a pharmaceutical research institute at the University. This venture subsequently became the independent INTERx Research Corporation which eventually merged with Merck Co. Inc. Dr. Higuchi also was instrumental in the establishment of the Center for Bioanalytical Research and the creation of the new private company Oread, Laboratories, which markets discoveries made by the Center.

Higuchi and his wife, Aya, established funds with the Endowment Association to support the Higuchi Research Achievement Awards, which annually provide \$10,000 grants for the work of outstanding researchers in medicine, basic sciences, humanities or social sciences, or projects of special interest to Kansas. These funds also support the Higuchi Distinguished Professorship. He will be remembered as a scholar, entrepreneur and benefactor, and he has left an indelible mark on the University of Kansas.

Edward (K.C.) Lee, (Ph.D. 1963) passed away after kidney surgery on September 29, 1986. After receiving his degree from Kansas, Ed joined the Department of Chemistry at the University of California at Irvine in 1965, and was promoted to Professor of Chemistry in 1971. He is survived by his sons, Andrew and Maurice.

R. Milford White (Ph.D. 1961) died in Lawrence this past November after an extended illness. Dr. White was 54. After receiving his doctorate with Professor Rowland, Milford taught two years at Jacksonville, Florida, before joining the faculty at Baker University in Baldwin, Kansas, where he became Chairman of the Chemistry Department. He later received a degree in electrical engineering, and was teaching in the Electrical Engineering Department for the past year.

GRANTS TO DEPARTMENT

During the past year grant support by federal agencies (NSF, NIH, Navy, DOE) for research activities totalled \$515,000. Additional research funding in the amount of \$160,000 was obtained from various foundations (such as ACS-PRF, Research Corp., and Scottish Rite) and the University General Research Fund provided \$47,000. Departmental faculty have continued as major participants in the Center for Bioanalytical Research with support of approximately \$150,000 from State and Oread Labs matching contributions. As usual the Department received a substantial computation allocation with an estimated value of \$300,000.

Individual friends and alumni of the Department and various corporations contributed funding of approximately \$43,000, and income from past endowments totalled nearly \$62,000. You may be interested in knowing that the major fraction of these funds was utilized for summer and academic year scholarships, seminar programs and faculty summer research grants. Without this generous support, the Department's accomplishments could not have been nearly so great.

RECENT EVENTS IN THE CENTER FOR BIOANALYTICAL RESEARCH

The Center for Bioanalytical Research, under the able guidance of Ted Kuwana, has expanded in its personnel, its mission and its facilities during the twenty four months since the last newsletter report on its activities. Of the many events of the last two years that mark the progress of the Center, perhaps the most significant are the addition of Chris Riley (Associate Professor in Pharmaceutical Chemistry) in 1985 and the additions next fall of Professor George Wilson (Higuchi Professor of Chemistry and Pharmaceutical Chemistry) and Dr. Craig Lunte (Assistant Professor of Chemistry). Each of these individuals brings scientific expertise in important areas of multidimensional column chromatography, biosensors, immunochemistry and electrochemical methods in bioanalytical chemistry that will complement the faculty of eight chemists and pharmaceutical chemists who now comprise the Center for Bioanalytical Research.

We note with sadness the loss of Tak Higuchi, Regents Professor of Pharmaceutical Chemistry and Chemistry and founder of Oread Laboratories, and one of the principals in the Center. His stimulating influence on the research and progress of the center will be difficult to match; his leadership in the pharmaceutical and chemical sciences and his enthusiasm will be greatly missed.

The research efforts of the Center have reached the publication stage; over the past year, seven articles have appeared in the scientific literature on the various and diverse projects that the Center has sponsored. Three papers have appeared in Analytical Chemistry on the use of the fluorogenic reagent system, naphthalene-2,3-dicarboxaldehyde and cyanide, for the assay of primary amines, amino acids and oligopeptides with fluorescence-based HPLC methodology. The synthesis and characterization of the reagent and fluorescent products appeared last fall in the Journal of Organic Chemistry. Finally, a preliminary report on the basic mechanism encountered in hydrogen peroxide/oxalate ester induced chemiluminescence was published in the Journal of the American Chemical Society last summer.

The first week of June marked the meeting of the first International Bioanalytical Workshop held in Lawrence, Kansas, and sponsored by CBAR, the University and Oread Laboratories. Nearly a hundred participants from the international chemical and pharmaceutical sciences community interested in the modern developments of bioanalytical chemistry met for three and a half days and discussed state-of-the-art methods and techniques such as separations, immunosensors, laser induced fluorescence, chemiluminescence, derivatization methods, bioelectrochemistry, as well as specific biomaterials assay development.

The Center and Oread Laboratories have consummated an agreement with the Shimadzu Corporation to develop a new chemiluminescence detector for high performance liquid chromatography systems which will be based on the technology developed within CBAR. In return, Shimadzu has provided the Center with HPLC and spectrophotometric equipment on a lease agreement for bioanalytical analyses.

Three major projects represent the primary thrusts of the Center's research efforts: (1) The design, synthesis and development of new fluorescent "tagging" reagents to augment and broaden our current capabilities with fluorescence-based HPLC analytical methods; (2) Fundamental studies and applications development of the chemiluminescence phenomena for analytical detectors and sensors; and (3) Exploration of immunoaffinity column chromatography techniques for separations of subclasses of biologically active polypeptides. Each of these projects is funded through the Project Grants program sponsored by the Kansas Technology Enterprise Corporation with the required matching funds from Oread Laboratories, Inc. The Center and the Departments of Chemistry and Pharmaceutical Chemistry are also the recipients of a Summer Research Participation Award from the National Science Foundation for this summer. These grants, together with the core grant from KTEC-Oread Labs and a number of other smaller project grants, have enabled the Center to operate on an annual budget of nearly \$750,000. Next fiscal year, the projected budget will be nearly \$1,000,000 which will support the bioanalytical research efforts of 10 faculty, 8 postdoctoral, 12 graduate students and several undergraduate assistants.

Finally, the commercial development of the Center's efforts has also advanced during the past year. Two patents are nearing the final stages of approval, adding to four previously accepted. Oread Laboratories has begun the construction of a separate laboratory, a \$2,000,000 facility located in the Research Park on the west edge of Lawrence. Occupancy is expected to be completed by November. Dr. Albert Adelman, formerly of Batelle Columbus Laboratory, is providing the leadership for these activities as Oread Labs' first president.

DEGREES CONFERRED

The University of Kansas held its 115th Annual Commencement, May 17, 1987, and forty-two degrees in Chemistry were awarded. Nineteen of these degrees were B.A. degrees, fifteen were B.S. degrees, four were M.S. degrees and four were Ph.D. degrees.

Four of our undergraduate majors were graduated with "Highest Distinction": John David Graham, Paula Marie Koenigs, Gregory Alan Merritt and Richard William Roberts. Another seven majors graduated with "Distinction": Jerome Dean Barnes, Art Ruiz Cabrera, Kathleen Ann George, Karen Rempel Meeker, Kristin Rankin, Garrick Adrian Rettele and Kinh-Phuc Thi Kieu. Dick Anuj Chopra and Kathryn Marie Erwin received Departmental Honors, as well as Koenigs and Roberts listed above.

Students receiving M.S. degrees were: Anton Frederick Ahrens, Tushar Govind Dixit, Calvin Ward Mordy, and Bryan Christian Zielinski.

Students granted the Ph.D. degree, with their previous degrees, research areas and dissertation titles are listed here:

Abraham Habash (B.A., 1956, Friends University, M.A., 1971, Bowling Green State University), physical: A Pulsed Molecular Beam Study of Desorption of CsCl from Ni Surfaces. (Cooperative program with Wichita State.)

Paula J. Martin (B.A., 1980, University of Montana), inorganic: ATP Hydrolysis: Assistance from 1,4,7-Triazacyclononane Cobalt (III) Derivatives and Polyammonium Macrocyclic Compounds.

Royal Kent Power (B.S., 1974, Wichita State University), physical: An Optically Detected Magnetic Resonance Study of Several Cyclic Ketones. (Cooperative program with Wichita State.)

William H. Taylor (B.A., economics, 1975, University of California-Los Angeles), physical: Microwave Structure Determination and 3-Membered Ring Systems.

NEWS OF ALUMNI

Frances Acholla (Ph.D. 1985) is currently working with Professor Ken Suslick at the University of Illinois, before traveling home to Nairobi to join the faculty at the University of Nairobi.

Anton Ahrens (M.S. 1986) is teaching chemistry at Topeka High School, Topeka, Kansas.

Keith B. Allen (B.A. 1982) is a General Surgery Resident at Emory University in Atlanta, Georgia.

Beau Atwater (Ph.D. 1985) has accepted a position as Research Scientist at the BOC Group Technical Center at Murray Hill, New Jersey.

Cynthia Eppler Baker (B.A. 1978) recently completed a four-year term as a Navy dentist, and was awarded the Navy Achievement Medal. She is now beginning private practice in Anderson, South Carolina.

Betty Leonard Burns (B.A. 1945) is Associate Dean for Academic Systems and Director of Institutional Research at the National College of Education, Evanston, Illinois.

Ann Cartwright (Ph.D. 1972), Chairman of the Chemistry Department at San Jacinto College, Pasadena, Texas, won the 1986 Piper Award for excellence in teaching.

Carole A. Casteen (B.A. 1977) has completed her Ophthalmology Residency and has accepted a fellowship in Vitreo-Retinal Diseases and Surgery with Dr. Howard Schatz in San Francisco, California.

Mitchell C. Cotton (B.S. 1980) has recently accepted a position as Manager of Product Development at Cerac, Inc. in Milwaukee, Wisconsin.

Paul Coulter (Ph.D. 1965) was recently promoted to the position Vice President, Technology, for the Carbon Products Group of Union Carbide.

Floyd Farha (Ph.D. 1966) retired from Phillips Petroleum, and has organized his own business, called Cytodiagnosics, Inc., a company developed to provide commercial medical diagnostic services.

Hugo F. (Fritz) Franzen was a winner of the United States Department of Energy's science award for Outstanding Sustained Research in Materials Chemistry. This award, given once a year, is given to one scientist from among all the DOE National Laboratories. Franzen's book, Physical Chemistry of Inorganic Crystalline Solids, has been published by Springer-Verlag. This is a graduate level text and is based in part on his previously published Second-Order Phase Transitions and the Irreducible Representation of Space Groups.

Ted M. Gardiner (B.A. 1970) is practicing in Pediatrics with the Colorado Permanente Medical Group in Denver, Colorado.

Kevin Gratton (Ph.D. 1968), who has been a Physical Science Instructor at Johnson County Community College, Kansas, since 1975, recently traveled to Lancaster in Great Britain on a Fulbright exchange program.

Larry Haskin (Ph.D. 1960), Chairman of the Department of Earth and Planetary Sciences at Washington University, was named the first Ralph E. Morrow Distinguished University Professor.

Betty Austin Hensley (B.A. 1944) has assembled a collection of over 300 flutes, and is a touring performer for the Kansas Art Commission. She recently gave a one hour program at the National Flute Association in New York City.

Frederick Horne (Ph.D. 1962) has left Michigan State to accept the position of Dean of the College of Science at Oregon State University in Corvallis, Oregon.

Barbara Hughes Hosein (B.A. 1979) is the Assistant Director of the New York Blood Center, New York City, New York.

Philip Huskey (Ph.D. 1985) has accepted a position as Assistant Professor of Chemistry at Rutgers University in Newark, New Jersey.

Jong Ho Kim (Ph.D. 1980) left Kataleo Corporation, to establish his own company, the J and H International, Inc., in Chicago.

Robert A. Livingston (B.A. 1981) is a Resident Physician in Pediatrics at Johns Hopkins Hospital in Baltimore, Maryland.

John L. Margrave (Ph.D. 1950) has assumed two new positions. One is the E.D. Butcher Professorship of Chemistry at Rice University. The other is that of Vice President for Research and Director of the Materials Science Research Center of the Houston Area Research Center, a consortium of Texas universities.

Paula Martin (Ph.D. 1986) was appointed Assistant Professor of Organic Chemistry at Dickinson State College, North Dakota.

David Mathewes (M.S. 1956) retired last fall after serving for 24 years as Professor of Chemistry at Western Carolina University. He is now president of Long Branch Enterprises, a consulting firm.

Stephen Minor (Ph.D. 1976) has been promoted to Laboratory Supervisor for the City of Tulsa, Oklahoma.

Charles Neywick (Ph.D. 1974) has become Technical Service Manager, DARAN Products, W.R. Grace and Company, Lexington, Massachusetts.

John Nuss (B.A. 1980) is a post-doctoral research associate in Paul Wender's group at Stanford.

William Parker (Ph.D. 1956) is Vice President and General Manager of Electronics Materials Corporation in Azusa, California.

Noru Patel (M.S. 1970) was promoted to Manager of Quality Control, Olin Chemicals, in Stamford, Connecticut.

Sam Pazhanisamy (Ph.D. 1984) is working as a post-doctoral fellow with Rex Pratt at Wesleyan University in Middletown, Connecticut.

Barbara Prater (B.A. 1965) has been promoted to Assistant Vice President for Academic Affairs at the University of Texas at El Paso, Texas.

Dan Quinn (Ph.D. 1977) has been awarded tenure in the Department of Chemistry at Iowa University in Iowa City, Iowa.

Harry Robson (Ph.D. 1959) retired from Exxon after 29 years in research and development and has accepted a position in the Department of Chemistry of Louisiana State University.

Kim Sheridan (B.A. 1978) is a resident in Anesthesiology at Case Western Reserve University in Cleveland, Ohio.

Karl E. Spear (Ph.D. 1967), Professor of Ceramic Science at Pennsylvania State University, has been named Chairman of the Ceramic Science and Engineering program in the Department of Materials Science and Engineering. His broad research interests have been in high temperature thermochemistry and the phase behavior of ceramic and metal systems. He was the banquet speaker for the KU chapter of Sigma Xi at the time of its annual initiation ceremony. He described his work on the "Diamond Growth from Natural Gas" which resulted from his experimental and theoretical modeling research on chemical vapor deposition and plasma-assisted deposition systems. He received a Distinguished Alumni Award from Baker University at this year's Commencement.

Mark Steinmetz (B.S. 1972) was promoted to Associate Professor at Marquette University, Milwaukee, Wisconsin.

Laura Tanner (B.S. 1978) has accepted a position as research associate in the Department of Biochemistry of the Dartmouth Medical School in Hanover, New Hampshire.

Duane Thurman, (Ph.D. 1967) has been promoted to General Manager (for USA and Canada) of Smith Kline Animal Health Products.

Greg Voth (B.S. 1981) was recently awarded the Herbert Newby McCoy Award in recognition of his outstanding graduate research at the California Institute of Technology, Pasadena, California.

George E. Walrafen (M.S. 1959) has recently edited a book entitled "Structure and Bonding in Noncrystalline Solids," and is working on another book, "Structure of Water by Vibrational Spectroscopy."

Lauren Wilson (Ph.D. 1963) recently was awarded the Homer C. Lucas Professorship at Ohio Wesleyan University.

Richard L.C. Wu (Ph.D. 1971) is a Senior Scientist in the Materials Research Division of Universal Energy Systems in Dayton, Ohio.

Patricia Hermann Young (B.S. 1975) is a Staff Anesthesiologist at North Kansas City Hospital in Kansas City, Missouri.

LECTURE SERIES AND OUTSIDE SPEAKERS

Ralph N. Adams, The University of Kansas, The 37th Annual E. C. Franklin Memorial Lecture, "Recent Studies of Chemical Dynamics in the Extracellular Fluid Space of the Brain."

Fred Basolo, Northwestern University, "Kinetics and Mechanisms of Reactions of Metal Carbonyls Revisited."

John E. Bauman, University of Missouri - Columbia, "Thermodynamic Measurements in Electrolyte Solutions."

J. Edward Bennett, Arkansas State University, "Solid-Solid Reaction of Carbonate with Graphite."

Glenn A. Berchtold, MIT, "The Chorismate Pathway."

Donald Bobbitt, University of Arkansas, "Analytical Applications of Laser Technology - It's More Than a Light Bulb!"

Darryl Busch, The Ohio State University, "Recent Developments in the Chemistry of Metallomacrocycles."

Peter M. Castle, Westinghouse Research & Development Center, "Lasers and Chemical Processing."

Malcolm H. Chisholm, Indiana University, "Metal-Metal Multiple Bonds: Inorganic Functional Groups."

Paul F. Cook, North Texas State University, "Isotope Effect Studies of the NAD-Malic Enzyme Reaction."

A. W. Cordes, University of Arkansas, "Sulfur-Nitrogen Structural Chemistry - Current Rationalizations."

Joe Davis, University of Texas at Austin, "Retention by Electrical Field-Flow Fractionation of Anions in Porous Vycor Glass Channels."

M. Bonner Denton, University of Arizona, "Recent Advances in Spectrochemical Analysis."

Shaojun Dong, Changchun Institute of Applied Chemistry, "Ferrocene Polymer Film - Modified Electrode."

Debra Dunaway-Mariano, University of Maryland, "Mechanistic Aspects of Enzymic Phosphoryl Group Transfer Reactions."

Jack D. Dunitz, F.R.S., ETH Zurich, Switzerland, "Experimental Charge Density Studies of Covalent and Ionic Bonds."

Thomas Fehlner, University of Notre Dame, "Inorganometallic Chemistry."

Catherine Fenselau, Johns Hopkins School of Medicine "Middle Molecule Mass Spectrometry."

Ray Funk, University of Nebraska, "Macrocyclic Claisen Rearrangements in Natural Product Syntheses."

Gordon A. Gallup, University of Nebraska-Lincoln, "Weakly Bonded Complexes."

Thomas E. Goodwin, Hendrix College, "Microscale Organic Laboratory in a 5-ml Conical Flask" and "The Use of Carbohydrate-Derived Chirons in Ansa Macrolide Syntheses."

Michael Gross, of the University of Nebraska - Lincoln, "Fast Atom Bombardments and Tandem Mass Spectroscopy for Biomolecule Analysis and for Ion Chemistry."

Robin M. Hochstrasser, The University of Pennsylvania, The Camille and Henry Dreyfus Lecture, "Fast Rotational Motion of Molecules in Liquids and Gases."

David K. Hoffman, Iowa State University, "Irreversible Filling of Lattices."

Kurt L. Komarek, University of Vienna, "Nonstoichiometry in CsCl-Type Structures."

D. Lather, Lee Scientific Company, "SFC--Emergents of a New Chromatographic Technique."

Yuan T. Lee, University of California-Berkeley, Arthur William Davidson Lecture, "Molecular Beam Studies in Elementary Chemical Reactions."

Craig Lunte, University of Cincinnati, "Voltammetric-Amperometric Detection for Liquid Chromatography and Flow Injection Analysis."

Alan G. Marshall, Ohio State University, "Fourier Transform Techniques in NMR and Mass Spectrometry."

Richard L. McCreery, The Ohio State University, "Spectroscopic Probes of Electrochemical Events: Analytical and Mechanistic Applications."

Marc-Edouard Meyer, Columbia University, "Organometallic Chemistry of Group II Elements."

John Montgomery, Southern Research Institute, "The Biochemical Basis for the Drug Action of Purine and Pyrimidine Metabolites."

John Penn, West Virginia University, "New Insights in Breaking Chemical Bonds: Problems(?) or Pleasure(?) for Organic Chemists."

Keith Purcell, Kansas State University, "Intermolecular Interaction in Solids: Electron Transfer and Conductivity."

Ralph Riggin, Eli Lilly, "Analytical Chemistry of Therapeutic Proteins."

Kenneth M. Sando, University of Iowa, "Pressure Broadening of Atomic Spectral Lines."

F. J. Schmitz, University of Oklahoma, "Chemistry of Some Marine Organisms: Potential New Drugs."

Harold Shechter, The Ohio State University, Frank Burnett Dains Memorial Lecture, "New Reactions and the Mechanisms of Aromatic Substitution by Heterocyclic Carbenes."

Gerald J. Small, Iowa State University, "Solid-State Laser Spectroscopy as Applied to Problems in Chemical Carcinogenesis and Photosynthesis."

Karl E. Spear, Pennsylvania State University, "Some Topics in Solid State Chemistry or Chemical Vapor Deposition."

Karl E. Spear, Pennsylvania State University, "Diamond Growth from Natural Gas."

William Stevens, University of Alabama, Birmingham, "Current Topics in Oligonucleotide Structure."

Paul Sutor, Midwest Research Institute, Kansas City, Missouri, "Surface and Interface Chemistry in the Solid Lubrication of Ceramics."

Richard P. Van Duyne, Northwestern University, The 26th Annual Henry Werner Lecture, "Surface Laser Spectroscopy: Principles and Applications" and Surface Laser Spectroscopy: Very Recent Developments."

Adrian P. Wade, Michigan State University, "Minds Over Matter: Machine Intelligence in the Laboratory."

W. S. Wadsworth, Jr., South Dakota State University, "The Mechanism of Phosphorylation: A Continuing Controversy."

Michael Wasielewski, Chemistry Division, Argonne National Laboratory, "Ultrafast Energy and Electron Transfer in Models of Photosynthesis."

David S. Watt, University of Kentucky, "Synthetic Studies Involving Natural Products."

George S. Wilson, University of Arizona, "New Approaches to the Use of Biospecific Reagents for Rapid Ultratrace Analysis."

Charles Wurry, University of Missouri - Kansas City, "A New Method for Dioxin Analysis."

Jerold J. Zuckerman, University of Oklahoma, "Where are the Lone Pair Electrons in Subvalent Main-Group Compounds?"

FACULTY PUBLICATIONS

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