

CHEM/LETTER

DR. PAUL C. CROSS

This issue is dedicated to Paul C. Cross, Chairman of the Department for twelve years. He was born in Bruin, Pennsylvania in July 1907. He died September 20, 1978 on the day that last year's Chem/Letter went to press. Paul received the BA degree from Geneva College in 1928 and his PhD in the depth of the depression, 1932, from the University of Wisconsin. Post-doctoral appointments at Wisconsin, California Institute of Technology, and Stanford preceded his teaching at Stanford from 1936 to 1938. In 1938 he joined the faculty of Brown University and remained there eleven years.

Dr. Cross assumed the chairmanship here in the fall of 1949. In the summer of 1961 he became president of the Mellon Institute. These were active years for the department. There were 18 on the staff of the Department of Chemistry and Chemical Engineering when he came. Despite the separation of Biochemistry in 1949 and of Chemical Engineering in 1953, the staff grew to about 24 when he left. During this period many significant changes were made in graduate and undergraduate programs under Paul's guidance. Important additions to Bagley Hall were made and plans for the new fourth floor were initiated.

There follows an appreciation of Paul Cross, the man, by George Halsey and a summary of his scientific work by David Eggers.

Mention should be made of the Paul C. Cross Memorial Fund. While response to the fund has been gratifying, contributions are welcome. Checks may be made to the Department of Chemistry, U. of W., with the notation "Paul Cross Fund."

Victorian Sivertz, Editor

A few years before his death, Paul carried out a long-anticipated task; he wrote his memoirs. I was one of the few people outside his family allowed to read them, and that was by his wish, a strictly "eyes only" privilege. He made this restriction for two reasons; first he had a few remarks about living people (very mild really) that he wanted kept private and second, I think he was not completely satis-



fied with his effort. Indeed, the parts that covered his professional life, and especially the Mellon Institute times, were sketchy at best. Perhaps one day his family will see fit to release at least the early part about Paul's youth in Pennsylvania.

I first met Paul when I came to the University of Washington, a year or so after he did. By this time he was almost entirely what he always called a "paper shuffler," but he was certainly far from any previous conception of an administrator or department head that one might have. First, it was immediately apparent that he actively hated his work and would rather talk about other things, such as successes and disasters at other chemistry departments, rather than get on with business. The marvelous thing was, however, that things that needed to be done were done at once, and mostly without any staff assistance.

Another atypical feature of his administration was a complete person-to-person level that he stayed on with everybody from top to bottom. Henry Eyring used to say "come in and take your shoes off;" Paul did not have to say it.

I must admit that this latter feature was in my mind responsible for his ultimate failure to have a real effect on the future of the University of Washington. He and Carl Allendoerfer, then head of Mathematics, should have guided the whole effort in physical science and engineering at the University. Most of the faculty who were young then thought of them as the best. But in quite different ways neither of them matched the local image of a college president or for that matter even a dean. This period of stagnation was doubly unfortunate, because Paul's great talent at recognizing and encouraging talent was largely wasted due to the effect of this situation on his own personality.

Happily he was completely vindicated when, to the (doubtless) surprise of some of our local administrators, he was called to be President of the Mellon Institute. This was a truly big job, with much more scope for his particular genius than anything Washington could offer him. Needless to say, he didn't admit to liking that job either, with many a complaint about the "prima donnas" he had to deal with. I think he was happy there however. He was treated like the wise and important man he was and showered with many of the trappings of high office. He was a member of several very exclusive clubs, he was on the board of directors of several prestigious organizations, and he had a chauffeur and limousine. He was still the same Paul, however. One day I was with him in his baronial office and he was more fidgety than usual. It turned out that he had to interrupt his busy day to drive his chauffeur to the dentist—otherwise he would have to take the bus. I don't think any of his predecessors would have been that thoughtful.

Finally, I will mention the biggest event in terms of long-term effect on science that he was ever associated with. It was apparent that the Mellon Institute had outgrown its function as a site for industrial research sponsored by individual companies. Also its connection with the University of Pittsburgh had withered away. A lesser man than Paul would have fought with fair means and foul the merger with Carnegie Tech to form one of the great universities of the United States. But he cooperated gladly and fully in this most delicate task, gracefully playing "second fiddle" to more "prima donnas." But I feel that he has a lasting monument there in a revitalized scientific community based in the great marble building he presided over so well.

George D. Halsey
Professor, Physical Chemistry

This is written as a brief summary of the scientific work of Paul Cross. Let me emphasize that this is not meant in any way as an evaluation of Paul's technical work or publications; rather, it is meant for those who knew Paul for a relatively short time and, perhaps, were aware of only a part of his contributions.

A series of publications bear the titles "Asymmetric Rotor. I, . . ." starting in 1943 and extending through 1953; however, he had published work on an asymmetric rotor molecule even ten years earlier. Three papers dealt with hydrogen-deuterium exchange, involving hydrogen chloride, deuterium gas and also ammonia and hydrazine. Approximately ten papers are on molecular vibrations, force constants and thermodynamic properties, and six papers are on spectroscopic instrumentation.

Paul Cross's work was pioneering in a number of ways, but perhaps two could be mentioned in particular. He published tables of energy level parameters and of intensity quantities so that other workers could also calculate the various transitions making up the rotational structure in infrared bands of asymmetric tops. He was also a pioneer in using the band envelope method, realizing that the best results could be obtained by calculating all transitions and their intensities and then comparing with the experimental contour.

I must mention my own considerable debt to Paul Cross when I was beginning to learn about asymmetric rotor molecules. I found that the various quantities reported in his papers, especially the relative signs of the angular momentum and direction cosine matrices, were completely trustworthy.

Paul was involved in several polemics with other groups, concerning the interpretation of experimental data. Perhaps one should call these differences of opinion; Paul was always the gentleman, even when he knew that other people were wrong. In one instance he had deduced a value of the HSH bond angle somewhat larger than 90° , but another group thought that it should be a bit less! The other case concerned the band origins and band types of the fundamentals in hydrogen sulfide, where again Paul was proved to be correct.

Finally, one must mention the two books; "Molecular Vibrations" by Wilson, Decius and Cross and "Molecular Vib-Rotors" by Allen and Cross. They have been widely used around the world by many researchers and show the high standards that Paul maintained in his work.

David F. Eggers
Professor, Physical Chemistry

CHAIRMAN'S MESSAGE

Three important areas received a great deal of attention in the department during the past year: Bagley Hall remodeling, major instrumentation acquisitions and faculty recruiting and appointments. After extensive discussion and debate by the faculty and after meeting one seemingly impossible deadline after another we finally accepted bids on Phase II of the remodeling and were delighted and surprised that the bids were significantly under the earlier estimates. On June 25 the contractors began demolition on the lower three floors in the northeast quadrant of Bagley Hall. New quarters for a major

NMR facility, new research laboratories and faculty offices, and a new departmental office suite on the first floor are to be ready for occupancy in early 1980. In the meantime roughly a quarter of the Chemistry faculty has been displaced to temporary quarters. Their cooperation under adversity is commendable.

The appropriate committees responsible for remodeling-related activities are actively planning the future phases of this total remodeling program for Bagley Hall. Professor Fairhall continues to spearhead this demanding undertaking.

We have continued our intensive efforts to acquire a broad range of state-of-the-art instrumentation. In May we began to use (and recover) our own liquid helium produced on campus by a CTI Inc. Model 1400 helium liquifier funded in part by NSF in response to a joint Chemistry-Physics proposal. A Jarrell-Ash Model #955 Inductively Coupled Plasma Atomic Emission Spectrometer is now being installed in the heavy instrument suite next to the Hewlett-Packard Model #5985A GC-coupled mass spectrometer which was put into operation in June. Also this spring we were informed by NSF that our proposal for a large departmental computer facility had been approved, and we are now grappling with the decision of whether to choose a Digital Equipment Corporation Model VAX computer or a Harris Inc. Model 500 system. Finally, we are beginning our evaluation of superconducting NMR spectrometers in preparation for the acquisition of a system in the 400 MHz class.

To acquire such instrumentation requires a great deal of effort not only to write the proposals and negotiate for the funds but to evaluate the competing vendor offers with demanding benchmark tests. The decision on the computer is especially difficult in this regard, and the superb efforts made by the staff and faculty alike in all these ventures represent a high level of dedication. Although we have made giant strides in this area we cannot afford to relax and plans for future acquisitions are in progress.

The faculty is especially pleased to welcome Donald R. McAlister to the department as Assistant Professor. A graduate of Caltech, where he worked with both Professors Bercaw and Bergmann, Don's interests focus primarily on mechanisms of organometallic reactions. We also expect to announce soon the appointment of a new member of the faculty as Professor of Chemistry and Biochemistry with interests in NMR of biomolecules. This is the result of a major recruiting effort involving both the College of Arts and Sciences and the College of Medicine. We have also begun recruiting for another faculty member to start 1980-81 at the assistant professor level.

In addition to these developments we have initiated appointments of several research faculty. This is essentially a new experience for the Chemistry Department but one which we hope will be rewarding for everyone. These appointments include Dr. Larry McMurchie, Dr. Louis Noodleman and Dr. Amikam Reuveni as Faculty Research Associates, Dr. Thijs Aartsma as Research Assistant Pro-

fessor and Dr. Richard Gammon as Research Associate Professor.

These are but a few of the many activities that I am pleased to report to you on behalf of the members of the Department of Chemistry. I invite you again, as I did last year, to visit us or to communicate to us your suggestions or other more tangible contributions.

Alvin L. Kwiram
Chairman

FACULTY AND STAFF NOTES

Donald R. McAlister is the newest member of the faculty. He joins the Inorganic Div. to work in the field of Organometallics. He received the BS in Mathematics in 1971 and the MS in Chemistry in 1973 both from the University of Oregon. In 1977 he was awarded the Ph.D. from the California Inst. of Tech. From 1977 to 1979 he was a post-doctoral fellow at the University of Wisconsin.

N. Andersen has received a \$62,300 grant from NIH to study "Assay Methods for Arachidonic Acid Metabolites" for the period 7/1/79 to 8/30/80. He also has a NIH grant extension of \$51,900 to study the synthesis of Post-Ovulatory Prostanoid Antifertility until 6/29/80.

A. G. Anderson continues his work on heterocyclic systems. He attended the Spring ACS meeting in Honolulu. He has just assumed the new position of Associate Chairman of the Department.

W. T. Borden will be travelling in Japan this Fall to participate in the Third International Congress of Quantum Chemistry in Kyoto and to talk at the Symposium on Theoretical Aspects of Molecular Interactions and Chemical Reactions at the Institute for Molecular Science in Okazaki.

W. C. Chilton promoted to professor.

G. H. Cady, emeritus, continues work on gas hydrates, for which he received an ACS grant for the period June 1979 through August 1980. He and Mrs. Cady celebrated their 50th wedding anniversary in Juhe.

G. Christian was on leave in Europe last year. In December he was presented the medal of Universite Libre de Bruxelles, an honorary award presented to only two other Americans. He gave six lectures as Fulbright lecturer at the University of Osijek, Yugoslavia and was Biennial Chair Lecturer at the University of Athens, both during May 1979.

E. R. Davidson's NIH grant "Electronic Structure of Bicarbynyls" was renewed at \$43,000 for one year beginning April 1979. He was also awarded \$21,000 by NASA for the period 7/1/79 to 6/30/80 to study "Configuration Interaction."

D. F. Eggers is planning a trip to Sweden, Denmark and

Germany during the last two weeks of August and the first week of September. He will visit Lund University, Copenhagen University and the Technical University of Berlin and give some seminars.

B. E. Eichinger attended a meeting and presented a paper, "Structure and Properties of Polymer Networks" in Jablonna, Poland, April 23-28; also lectured in Bayreuth, Osijek Yugoslavia, Strasbourg and Rome during his month in Europe. NSF made an added grant of \$43,125 for his study on Gaussian Molecules until 9/30/79.

M. Gouterman continues his research on the electronic structure of porphyrin molecules, most recently on Os complexes (with A. Antipas). He spent the Spring quarter at Brookhaven National Lab. While in the east he gave seminars at Chicago, Temple, Princeton, Rutgers, Boston and Rockefeller universities. In June he was awarded a grant of \$83,000 from NSF for the project "Photorelaxation and Photovoltaic Properties of Porphyrin Films."

G. D. Halsey in collaboration with Prof. Whittemore of Ceramic Eng. received a grant of \$85,000 from NSF for "Initial Sintering and Physical Absorption" for the period January 1979 to June 1981.

B. R. Kowalski promoted to professor. He received a \$100,000 grant from the M. J. Murdock Trust for research on "An Analytical/Multivariate Interpretation System for Complex Mixture Analysis" for the period February 1979 through January 1980. He also has an ONR renewal until 3/31/81 of \$70,000 to study "The Application of Transform Theory and Advanced Computer Methods to Chemical Data Prior to Analysis by Pattern Recognition;" and a renewal until 8/31/80 of a \$40,865 DOE grant to study "Trace Metal Characteristics and Speciation in Geothermal Effluent by Multiple Scanning Anodic Stripping Voltammetry and Atomic Absorption Analysis." He will be on leave Winter and Spring quarters.

A. L. Kwiram, as Secretary-Treasurer of the Division of Physical Chemistry (ACS) attended the Honolulu meeting; also the International Symposium on Magnetic Resonance in Chemistry, Biology and Physics in June at Argonne where he chaired a session and presented a paper. He will attend the ACS Fall meeting in Washington, D.C.

J. W. Macklin has co-authored two papers in the field of vibrational spectroscopic studies of conducting polymers, one on brominated (SN)x and another on AsF₅-treated (CH)x. This Spring they presented a paper on the IR and Raman spectra of AsF₅ doped (CH)x at the conference on conducting polymers and graphite at IBM in San Jose.

C.B. Meyer received a \$150,000 grant via DOE and Lawrence Livermore and Berkeley Labs., with another \$150,000 approved for October 1980. A book, "Sulfur, Energy and Environment" published in 1977 by Elsevier, Amsterdam, is now in its second printing.

J. G. Norman had a Graduate School award of \$6,924 for the first six months of 1979.

Y. Pocker, (1) In November 1978 gave an invited lecture in the Joint Biochemistry—Chemistry Seminar series at the University of California, Berkeley. (2) Participated in the 6th Enzyme Mechanisms Conference, La Jolla, California in January 1979. (3) At the N.W. Regional ACS meeting in June chaired the Biochemistry Section and his associates presented four papers. (4) In July presented three papers on Kinetics and Mechanisms of Enzyme Action at the XIth International Congress of Biochemistry in Toronto. The papers deal with zinc metalloenzymes: Liver Alcohol Dehydrogenase (with K. W. Raymond), Mammalian Carbonic Anhydrase (with C. T. O. Fong) and Plant Carbonic Anhydrase (with R. R. Misch). Also read a paper at the 3rd International Symposium on Alcohol and Aldehyde Metabolizing Systems in Toronto. (5) Was Senior Scientific Sponsor for three visiting Scholars: Bruce Ronald on leave from Idaho State from July 1978 to August 1979; John Meany from Ellensburg this Summer; and Robert Henkens on leave from Duke University for six months beginning late this Summer. (6) Had a NIH grant entitled "Physico-chemical Studies of Enzymic Hydration" renewed for the 15th year at \$80,847. (7) Participated in the "Lighthouse Conference" on Structure and Catalysis, chairing the session on Catalytic Mechanism, sponsored by the University of Oregon August 4-7.

B. S. Rabinovitch was elected this Spring to membership in the American Academy of Arts and Sciences. The department passed a motion that "the faculty . . . applaud his achievements and extends heartfelt congratulations." He was Debye Lecturer at Cornell University in November 1978 and was invited speaker at the Annual Meeting of the American Society of Mass Spectroscopy in June 1979. He is a member of the Air Force Office of Scientific Research Chemistry Panel. He received a \$60,000 NSF grant to extend his research on unimolecular reactions through August 1980.

S. Raucher presented papers at the ACS Spring meeting in Honolulu and the N.W. Regional meeting in June; and also participated in the Gordon Research Conference on Natural Products. He was an invited participant at the 1979 NSF Workshop on Organic Synthesis. For his work on the total synthesis of biologically important natural products he has a grant from NIH of \$80,000; also funds from the American Cancer Society and the Graduate School Research fund for the total synthesis of anti-leukemic sesquiterpenes and finally \$30,000 from the Pet. Research fund to continue work on organoselenium chemistry.

V. Schomaker spent a sabbatical year at the California Institute of Technology, April 1977 to April 1978 working on X-ray crystallography. He attended a National Resource for Computation in Chemistry Workshop in June 1978 at Berkeley and Asilomar, serving as chairman of one Panel.

J. M. Schurr attended the VIth International Biophysics Congress, Kyoto, Japan, September 1978 and was an invited speaker and Session Chairman at the Post-Con-

gress Symposium on Dynamics of Polyion Systems at Kyoto. He was an invited speaker at the Biopolymers Subgroup meeting at the Biophysical Society meeting in Atlanta in February 1979.

R. Vandenbosch presented a paper at the International Conference on Dynamical Properties of Heavy Ions, Johannesburg, South Africa.

B. Weinstein attended the Spring meeting of ACS in Honolulu as a Councilor of the local section. He received a grant of \$1,000 from the Stauffer Chem. Co. for algae collection and extraction for potential biological products.

W. Jensen retired in Autumn 1978 after 28 years of service.

WHERE THEY ARE . . . WHAT THEY ARE DOING

To economize space, abbreviations are used, particularly for the educational institutions, and PD used for post-doctoral. Except for new addresses the following listings will just indicate where the respondent is by institution. Complete addresses may be obtained by writing the Editor.

The Twenties and Thirties

J. Wesley Crum, MS '38 (PhD in Education '50) retired from Central Wash. Univ. in Aug. '78 after 29 years there. Now escorting tours abroad, 1400 Skyline Drive, Ellensburg, WA 98926.

Carl Hedreen, BS '32, lives at Black Butte Ranch (incorrectly listed as Butte Ranch last year) Box 98, Sisters, OR 97759.

John Klein, MS '40, will retire from Director of Technical Services at Longview Fibre after 38 years there.

Herbert McClain, PhD '33, retired from Procter and Gamble, spent more than a year in Texas and travelling in South America and the Pacific Northwest. Now at 6613 Leeds Lane East, Cincinnati, OH 45215.

Robert Reed, PhD '35 (BS '29, MS '30) retired in 1969 from C&I/Girdler, Inc. He has done consulting for Girdler and others. In 1978 moved to 331 Scottsdale House, 4800 N. 68th St., Scottsdale, AZ 85251.

Keith Seymour, PhD '33 (BS '26, MS '29) retired 1973, now at 810 Gonzales Drive, San Francisco, CA 94132.

The Forties

George Benoit, PhD '42 (BS '37) with Chevron Research. Home address 33 Luzanne Circle, San Anselmo, CA 94960.

John E. Corbally, BS '47 (PhD '55 in Education from

Berkeley) President of Univ. of Illinois since 1971, is retiring from that post in September. He will return to teaching at Urbana after a year of sabbatical leave.

Harold Garretson, PhD '40, retired in 1976 from Lynchburg College after 30 years of teaching. A lectureship in Science has been established there to recognize his years of devoted service. Home address: 3816 Faculty Drive, Lynchburg, VA 24501.

Helmut Haendler, PhD '40, retired from the Univ. of New Hampshire in June '78. Home address: Lee Hook Road, RFD, Newmarket, NH 03857.

Henry Hoekstra, MS '41, retired in May 1979 from Argonne Nat'l Lab., Illinois. He will reside in Sequim, WA.

Arville Ousdahl, BS '40, is in Seoul, Korea. From 1970-77 he was president of Unoco, Ltd., a subsidiary of Union Oil Co., in Tokyo. In 1977 he became Exec. Vice Pres. of Kyung In Energy Co., a 50-50 joint venture of Union Oil and a Korean National Co. Address: Kyung In Energy Co., Ltd., CPO Box 7373, Seoul 100, Korea.

Alfred Pekman, BS '40s, was here on leave from Alaska where he is an operator in an Air Force Electric plant. Address: 1560-10th Ave., Fairbanks, AK 99701.

Marvin Paulson, MS '40s, retired from Chevron Research. Address: 8524 Betty Lane, El Cerrito, CA 94530.

The Fifties

Harry Allen, PhD '52, named Dean of the Graduate School, Clark Univ.

Robert Gordon Anderson, PhD '56, is Vice Pres. of Lubricants Res. Dept., Chevron Research. Home address: 45 San Felipe Way, Novato, CA 94947.

Alvin Beilby, PhD '58, Chairman of Chemistry, Pomona College, has just received a N.S.F. Science Development grant for 1979-80 for leave at Lockheed Palo Alto Res. Lab. He will be associated with the electrochemical team of the chemistry section working on energy storage.

Glenn Booman, PhD '55, now with International Safeguard Project, Brookhaven Nat'l Lab., Upton, NY 11973.

John Corbett, PhD '52 (BS '48), was Chairman and Chem. Div. Chief of the AEC Lab at Iowa State Univ., Ames, from 1968-73, followed by 4-½ years as Prog. Dir. for Materials Chemistry (a DOE project). Jan. 1979 he started a sabbatical at Max Planck Inst., Stuttgart, then visiting professor at the Technical Univ. of Denmark and 3 months at Oxford.

Glenn Crosby, PhD '50, on leave from W.S.U. for the first semester 1978-79 at Univ. Hohenheim, West Germany as a U.S. Senior Scientist awardee.

Robert Henkens, BA '58 (PhD Yale '67), Assoc. Prof., Duke Univ. will be on leave to work with Dr. Pocker from Oct. '79 to Jan. '80.

Albert Jache, PhD '52, Assoc. Vice Pres. for Academic Affairs at Marquette Univ., Milwaukee, adds to his list of duties by becoming a Trustee, Argonne Universities Ass'n.

Donald Peterson, PhD '56, Chairman of Chemistry, Cal. State Univ., Hayward. Don adds that the following have held chairs at state universities:

Ed O'Neal, San Diego, Andy Montana and Carl Prenzlow at Fullerton (all 3 PhDs '57), Fred Dorer, PhD '65 at San Francisco, Dale Burtner (PhD '54) at Fresno. Your Editor adds (from memory): Alvin Bielby, Pomona College; Richard Ciula, PhD '59, at Fresno; Gary Gard, PhD '65, Dave McClure, PhD '64 and Bruce Brown, PhD '61, (Bruce in other administrative work) at Portland State; Rod Harrington, PhD '60, Univ. of Nevada; Bert Christensen, PhD '32, and Theron Parsons at Oregon State; Harold Schimke, PhD '35 and Jim Currie, PhD '70, Pacific Univ.; Dana Harter, PhD '47 and Roy Behm, PhD '62, Eastern Wash. Univ; Vince Podbielancik, PhD '66, Seattle Univ.; Jean'ne Shreeve, PhD '61, Univ. of Idaho; Harry Allen, PhD '52, Clark Univ.; Wesley Lingren, PhD '62, Seattle Pacific Univ.; Clint Duncan, PhD '64, Central Wash. State Univ.; Clint Kelley, PhD '41, Univ. of Denver. Now fill us in with the ones we have forgotten or missed.

Bertram Rowland, PhD '54, still at Townsend & Townsend, patent lawyers, with primary effort with diagnostic reagents for drugs and with molecular biology.

Robert Stewart, PhD '54, is with Occidental Res. Corp. (formerly Garrett Res.). Home address: 17052 El Caton Ave., Yorba Linda, CA 92686.

Jiang Xikui (formerly spelled Chiang Hsi-Kwei), PhD '52, The Shanghai Inst. of Org. Chem., 345 Ling Ling Lu, Shanghai, Peoples Republic of China. Chancellor and Mrs. Irving Shain visited Jiang and his wife in Shanghai in Feb. 1979. Jiang was a member of a 5-man Org. Chem. Delegation to Britain in Nov. 1978 for a month's tour. He was also a member of the 11-man Delegation of the Academia Sinica attending the April A.C.S. meeting in Honolulu. They visited the mainland U.S. for 2 weeks after the meeting. His son, Jiang Youheng, visited Bagley Hall recently in company with Irving Shain, PhD '52. They were enroute to Madison, Wis. where Dr. Shain is Chancellor and Youheng will enter the University as a chemistry major.

The Sixties

Robert Griffin Anderson, PhD '61, Senior Research Chemist, Chevron Research Co. In the last 2 years he has made three business trips to Indonesia, Singapore and the Philippines. He flies his own plane a lot. Bob is one of our best sources of information about alums.

Daniel Antion, MS '66 (PhD, Univ. South Carolina '69) was named associate provost of the U. of S. Carolina last summer.

William Baker, PhD '69, now Manager, Polymer Res. Sect. of 3M.

Edwin Barnes, PhD '60, is now at the Weyerhaeuser Tech. Center between Seattle and Tacoma. Home address: 17158 6th Pl. S.W., Seattle, WA 98166.

Charles Bender, PhD '68 promoted from head of the Atomic & Molecular Physics Group to head of the Chem. & Material Science Dept. with about 500 employees at Lawrence Livermore Lab.

Alexandre Berlin, PhD '61, is working for EEC in charge of air pollution problems: 21 rue des Glacis B.P. 224, Luxembourg.

David Cullen, PhD '67, is Asst. Prof., Dept. of Chem., Connecticut College, New London, CT 06320.

George Gerhold, PhD '63, at West. Wash. State Univ., Bellingham and also a partner in Micropi, a firm involved with microcomputers, with emphasis on chemical education.

Margaret Krahn, PhD '68, is at the Nat'l Marine Fisheries Service, 2725 Montlake Blvd. E., Seattle, WA 98112. She is divorced from Robert Krahn.

Wesley Lingren, PhD '62, recently assumed directorship of the Wash. Junior Service and Humanities Symposium, a state-wide research contest sponsored by the U.S. Army Off. of Res. and Seattle Pac. Univ. His book, "Inorganic Nomenclature," is due to be published this year by Prentice-Hall.

Jon Orvik, PhD '67, is at Dow Chemical, West. Div., Box 1398 Loveridge Road, Pittsburg, CA 94565. In summer 1978 he attended with his wife a week's conference on Ring Closure Reactions in Rome followed by travel in Italy, Switzerland and Germany.

Richard Roesler, PhD '69 was with General Mills which has been renamed Henkel, Inc. Home address: 2260 Leona Dr., N.W., New Brighton, MN 55112.

Donald Setser, PhD '62, Kansas State Univ., is Chairman Elect of the Phys. Chem. Div. of A.C.S.

Michael Sevilla, PhD '67, participated in a Faraday discussion of the Chemical Soc. in England and read a paper at the 10th Jerusalem Symposium on Quantum Chem. and Biochem. in March '77. He recently received over \$100,000 from DOE and USARO for further research on radiation damage to biomolecules using ESR. Wife, Cynthia, (PhD '68 Biochem. here) teaches biochem. at Oakland Univ., Rochester, MI 48063.

Name _____ Degree(s) at U of W _____ Year(s) _____

Home Address _____

Other Degree(s) _____ Institution(s) _____ Year(s) _____

Position _____ Organization _____

Business Address _____

News Notes:

News of Other Graduates:

Date _____ Signed _____

Please return to V. Sivertz, Department of Chemistry, University of Washington, Seattle, Washington, 98195. Just fold so return address shows, staple, add postage, and drop in the nearest mailbox.

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Department of Chemistry, BG-10
Seattle, Washington 98195

Attn.: V. Sivertz

Jean'ne Shreeve, PhD '61, head of Chemistry at Univ. of Idaho received the Div. of Fluorine Chem. Award in 1978.

Dean Wolbach, PhD '69, is now Director of Labs, Acurex, Energy & Envir. Div., 485 Clyde Ave., Mt. View, CA94043.

The Seventies

David and Lola Bjorkquist, PhDs, '75, with Procter & Gamble, he in R & D and she in Professional and Regulatory Service. Home address: 36 Oliver Road, Wyoming, OH 45215.

Larry Butler, PhD '72, still with EPA, Wenatchee, WA. Recent work was involved with BAAM (Amitraz) for control of phytophagous mites and the use of high pressure L. Chromatograph. Published with D. C. Staiff, "Trace Analysis of Thiram by Microcoulometry," J. Agric. Food Chem. 26, No. 1, p. 295-6 (1978).

Charles Connell, PhD '77, now staff scientist at Hewlett Packard, 1501 Page Mill Road, Palo Alto, CA 94034.

James Currie, PhD '70, Assoc. Prof., Pacific Univ., Forest Grove, OR 97116, is Chairman-Elect (1978) of the Portland Section, ACS. He received a Res. Corp. grant for "Studies of Alkyldiazonium Salts in Virtually Aprotic Media."

David Fagerburg, PhD '70, is with Tennessee Eastman, Kingsport, TN 37662. As Senior Res. Chemist worked on polymers, then was on special assignment for commercializing a new product. Promoted to Res. Assoc. in January.

Larry Guilbert, PhD '72, lives at 6 E. 36th St., New York, NY 10016. Occupation unknown.

Louise Hanson, PhD '73, is at Brookhaven Nat'l. Lab. #815, Upton, NY 11973.

Richard Jewell, PhD '70, is at the Weyerhaeuser Tech. Center, Tacoma, WA 98401.

Shinji Kuro Kawa was here on a post-doctoral appointment with Dr. Anderson and is Assoc. Prof. at Saga Univ., 1 Honjo-machi, Saga, 840, Japan.

Russell LaBar, PhD '71, is now a polymer chemist with IBM, Dept. 96K, Zip 41D, Hopewell Junction, NY 12533.

Stephen Langhoff, PhD '73, is a Res. Chemist for NASA at Ames Res. Center.

Sung-Chang Lin, PhD '78, is a P.D. at Cal. Tech., Pasadena.

Jean-Louis Metzger, PhD '71, is Manager of R&D Lab., Diametal A G, Bienne, Switzerland.

Dennis Perry, PhD '70, Los Alamos Scient. Lab. The

World Book Encyclo. Year book '78 mentions under "Physics" that his experimental work is among the most interesting for 1977. Address change to MS828, LAS Labs, Los Alamos, NM 87545.

Kent and Fay Pullen, PhDs. '67 & '68. Kent was reelected to the State Senate in '78 and is with Boeing when the legislature is not in session. Fay is active in mountaineering.

Kenneth Spitzer, PhD '72, appointed Administrative Manager of the Dept. of Chem. at W.S.U.

Isiah Warner, PhD '77, is Asst. Prof. at Texas A&M, College Station, TX 77843.

Michael Webb, PhD '76, Los Alamos Scient. Lab., Los Alamos, NM 87544.

Larry Yen, PhD '77, is a scientist at Polaroid Corp., 1265 Main St., W4-3A, Waltham, MA 02154.

WE REGRET THE PASSING OF . . .

Paul C. Cross died September 20, 1978 at his home in San Diego. See elsewhere in this issue.

Frank E. McKenna, PhD '44, died at his home in New York City, November 10, 1978. He had been Executive Director of the Special Libraries Association.

James Stebbins, MS late '50s, died in Seattle in December, 1978.

GRADUATE AND UNDERGRADUATE DEGREES

Doctoral Degrees (9)

Yola A. Antipas, Dept. of Chem., U. of W. (1979).

Steven D. Brown, Asst. Prof., Dept. of Chem., U. of Cal., Berkeley (1978).

Anne B. Crow, 10517 Rowland Ave. S.W., Tacoma 98499 (1978).

Alan D. Denniston, 3657-23rd W., Seattle 98199.

Alice M. Harper, Ass't. Prof., Dept. of Chem., University of Georgia, Athens, GA 30602 (1978).

David W. Johnson, PP&R Dept., Bldg. 323, DuPont Co., Wilmington, DE 19898 (1978).

Peter W. Kwan, 6024 Buckingham Parkway #3, Culver City, CA 90238 (1979).

Youkang C. H. Liu, 152 Blake Ave., Santa Clara, CA 95051 (1978).

Robert R. Miksch, 732 Talbot Ave., Albany, CA 94720 (1979).

Masters Degrees (15)

Abdulmuhsen A. Al-Sunaid, Oregon Grad. Center, 19600 N. W. Walker Road, Beaverton, OR 97005 (1979).

Abdulrahman S. Attiyat, Dept. of Chem., U. of W. (1979).

David B-Y Chow, Dept. of Environmental Health. U. of W. (1979).

Tom Hom, 2116 N.E. 85th, Seattle, WA 98115 (1978).

Ki-Jun Hwang, Dept. of Chem., U. of W. (1979).

Allen L. Johnson, Dept. of Chem., U. of W. (1979).

Thomas E. Kay, Dept. of Chem., U. of W. (1979).

Daniel J-J Liu, Dept. of Chem., U. of W. (1979).

Yeong-Chang Peng, Dept. of Radiological Science, U. of W., (1978).

Christopher M. Perkins, Dept. of Chem., U. of W. (1979).

Lane C. Sander, Dept. of Chem., U. of W. (1979).

Peter J. Spellane, Dept. of Chem., University of California, Santa Barbara, 93106 (1978).

Syang-Yang Su, Dept. of Chem., U. of W. (1979).

Edmond R. VandenBosche, 127 Edwin St., Rt. 1, Morgantown WV 26505 (1979).

Tina L. Weeding, Dept. of Chem., U. of W. (1978).

Undergraduate Degrees

There were 39 BS and 20 BA degrees awarded during the year. Space does not permit listing all, but the following are noteworthy. Data about graduate work are not available in all cases.

The following are going to graduate or professional school. The symbol (P) before the name indicates election to the Phi Beta Kappa.

Alnasir H. Adatia, Kirksville College of Osteopathic Med.

(P) Natalie G. Ahn, Grad Sch., Chemistry, Berkeley.

(P) Steven A. Creelman, Med. Sch., Creighton or Northwestern.

(P) Robert P. Hopp, Med. Sch., University of Wisconsin, Milwaukee.

Jeanne S. Hsu, Grad. Sch., Chemistry, University of Pennsylvania.

Raymond Hsu, Dental School, U. of W.

(P) Marcia M. Johanson, Occupational Therapy, U. of W.

(P) Robert C. Jones, Medical School, Harvard.

(P) Thomas E. Knox, Medical School, Johns Hopkins.

Lu Ann Lawton, Medical School, U. of W.

Paulette P. Murphy, Grad. Sch., Chemistry, University of British Columbia.

Jack L. Nettleton, Medical School, U. of W.

Vance J. Novack, Grad. Sch., Columbia University.

(P) Marvin J. Osterhout, Dental School, U. of W.

Patrick Ravines, Grad. Sch., Oceanography, University of Wisconsin.

Mark R. Solyts, Dental School, U. of W.

Daryl G. Vogel, Grad. Sch., Pathology, U. of W.

Jan E. G. Westling, Grad. Sch., Forest Resources, U. of W.

In addition to those indicated above with the symbol (P), the following were elected to Phi Beta Kappa:

Stephen L. Boswell
Thomas K. Ikeda
Robert C. Neilsen

Other special honors are:

SUMMA CUM LAUDE

Stephen L. Boswell
Jack L. Nettleton

MAGNA CUM LAUDE

Ronald C. Jones
Lu Ann Lawton
Tse-Yin Wong

CUM LAUDE

Natalie Ahn
Grace Bebb
William Beck, Jr.
Thomas Ikeda
Larry Iverson
Marcia Johanson
Thomas Knox
Alvin Li
Robert Neilson
Vance Novack
Marvin Osterhout

B.S. WITH COLLEGE HONORS

Lu Ann Lawton
Natalie Ahn
Jeanne Hsu
Jack Nettleton

B.S. WITH DISTINCTION

Larry Iverson
Thomas Knox
Vance Novack
Tse-Yin Wong

MERCK AWARD WINNERS

Jack Nettleton
Tse-Yin Wong

CAN YOU LOCATE THESE ALUMS?

The list with the approximate dates of degrees and the last known localities follows:

Anderson, Thomas H., PhD '52, NASA, Moffett Field, CA.

Andrews, Lawrence, PhD '73.

Carter, Melvin, PhD '66, NASA, Moffett Field, CA.

Davis, Robert E., PhD '51, Aerojet Corp., Calif.

Dorsett, William, BS ca '62 (PhD, Utah, ca '73).

Everett, Armgard, PhD '66, Houston, TX.

Fisher, Charles, PhD '64.

Gale, Donald, PhD '57, South Carolina.

Gurka, Donald, PhD '66, Vancouver, WA.

Jelinek, George, PhD '67, Albuquerque, NM.

Lowen, Leslie, PhD '42, Detroit.

Miller, Richard, PhD '66, Michigan State Univ.

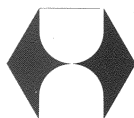
Rothenberg, Stephen, PhD '66, Oakland, CA.

Rosa, Eugene, PhD '65, Shell Oil Co., Houston, TX.

Tejada, Sylvestre, PhD '64, Manila, P.I.

Wade, Robert, PhD '52, Pasadena, CA.

Westman, Thomas, BS in 1950s, St. Louis.



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