

# CHEMISTRY AND CHEMICAL ENGINEERING NEWSLETTER

THE UNIVERSITY OF WASHINGTON

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## **A Message - and a Greeting - to Former Students**

NOW THAT the distractions ensuing from World War II and the heavy burden of work caused by the rush of students immediately following have cleared away sufficiently to allow a few moments for the contemplation of activities and duties other than those of the immediate present, the members of the Chemistry and Chemical Engineering staff have agreed that an effort should be made to establish contacts with the alumni of the department. This may appear strange when one observes that half of the current staff members have been here less than five years. These staff members have acquired, however, an interest in and a loyalty to the University of Washington which extends to the departmental alumni, and are enjoying the pleasure of an ever increasing circle of acquaintance within that group. In-

terested and friendly alumni add much to the spirit of a school and department.

This preliminary letter is designed to re-establish contacts which have been lost, in some instances, for decades. Later, we hope to be able to include information on previous graduates of your acquaintance. This may culminate in a fiftieth anniversary booklet as a sequel to the Commemorative Bulletin issued in 1928 on "approximately" the twenty-fifth anniversary of the organization of the Department of Chemistry and Chemical Engineering.

Your interest, cooperation, and encouragement will determine the value and effectiveness of our efforts to follow through with the above plans. We shall look forward to your response.

PAUL C. CROSS  
*Executive Officer*

## **The Department Now**

A number of changes have occurred in the faculty and staff during the past few years, so that a listing of departmental personnel with their present fields of research may be of interest.

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### **Faculty:**

#### **EXECUTIVE OFFICER**

DR. PAUL C. CROSS came to the department as executive officer in 1949, after heading the Chemistry Department of Brown University for several years. He received his doctorate in 1932 at the University of Wisconsin, after which he held a series of fellowships at Wisconsin, California Institute of Technology, and Stanford. He was a member of the Stanford faculty before going to Brown University. He was director of the Underwater Explosives Research Laboratory at the Oceanographical Institute at Wood's Hole during the war. His main interests lie in the field of physical chemistry, and he has directed work on molecular spectroscopy and structure, thermo-

dynamics, photochemistry, and explosion phenomena. Dr. Cross is married and has four children, quite in the Bagley Hall tradition of good-sized families.

#### **ANALYTICAL**

Asst. Prof. A. L. CRITTENDEN, Illinois '47. Polarographic and electrical methods of analysis.

Prof. R. J. ROBINSON, Wisconsin '29. Colorimetric, electrometric, and micro methods of analysis.

#### **ORGANIC**

Asst. Prof. A. G. ANDERSON, JR., Michigan '44. Non-benzenoid, polycyclic hydrocarbons and compounds of biological importance; structure of natural products.

Assoc. Prof. H. J. DAUBEN, JR., Harvard '41. Structure of organic and biologically active compounds; mechanism of reactions.

Prof. S. G. POWELL, Illinois '20. Condensation reactions of aliphatic aldehydes and ketones; rearrangement of phenyl ethers.

Asst. Prof. W. M. SCHUBERT, Minnesota '47.

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Mechanism of reactions; reactions proceeding via transient cyclic intermediates.

Instr. K. B. WIBERG, Columbia '50. Mechanism of organic reactions; reactions of highly branched and strained compounds.

### PHYSICAL AND INORGANIC

Prof. H. V. TARTAR, Chicago '20. (Exec. Officer 1947-'49.) Electrochemistry, surface phenomena, and colloidal electrolytes; sulfonates and quaternary ammonium compounds.

Prof. G. H. CADY, California '30. Inorganic and organic compounds of fluorine; problems in inorganic and physical chemistry.

Instr. D. F. EGGERS, JR., Minnesota '51. Absolute absorption intensity in the infrared spectral region; molecular spectroscopy.

Asst. Prof. N. W. GREGORY, Ohio State University '43. Structure and thermodynamic properties of metal halides; mixed halides and halogen exchange reactions.

Asst. Prof. G. D. HALSEY, Princeton '48. Chemical physics of surface phenomena; theory of liquids.

Assoc. Prof. E. C. LINGAFELTER, California '39. Colloidal electrolytes, x-ray diffraction and crystal structure of paraffin-chain compounds and metal chelates.

Assoc. Prof. D. M. RITTER, Chicago '37. Compounds of boron, silicon, carbon, and hydrogen; the study of lignin and its derivatives.

Asst. Prof. B. S. RABINOVITCH, McGill '42. Chemical kinetics; properties and reactions of alkyl radicals.

Asst. Prof. W. T. SIMPSON, California '48. Theoretical study of electronic energy levels in molecules; spectroscopy in the vacuum ultraviolet.

Assoc. Prof. V. SIVERTZ, McGill '26. Physical properties of colloidal systems; conductances in non-aqueous media.

### ENGINEERING

Prof. Emeritus H. K. BENSON, Columbia '07. (Exec. Officer 1919-47).

Asst. Prof. C. F. GERALD, Massachusetts Institute of Technology '41. Kinetics of heterogeneous catalysis and of physical interchange in flow systems; catalytic activity of ion-exchange materials.

Assoc. Prof. J. L. MCCARTHY, McGill '38. Problems relating to lignin, cellulose wood, and organic polymers; thermodynamics and multi-stage separation processes.

Prof. R. W. MOULTON, Washington '38. Engineering aspects of electrochemical reactions; basic unit operations, particularly absorption, mass transfer, and heat transfer.

Asst. Prof. F. B. WEST, Minnesota '39. Mass transfer processes; absorption with chemical reaction; non-ideal vapor-liquid equilibria.

### NO LONGER WITH THE DEPARTMENT

F. A. M. Buck, Shell Development Company.  
H. M. Haendler, University of New Hampshire.

D. J. Hanahan, Biochemistry, Health Sciences Division.

K. A. Kobe, University of Texas.

E. R. Norris, Biochemistry, Health Sciences Division.

E. S. Radford, retired.

D. W. Sherwood, University of Arizona.

T. G. Thompson, Department of Oceanography.

W. L. Beuschlein, deceased, 1944.

W. M. Dehn, deceased, 1951.

E. J. Salstrom, deceased, 1938.

G. M. Smith, deceased, 1943.

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### Nonacademic Staff

W. H. Antonius, machinist, foreman, Chemistry.  
J. H. Farnsworth, manager, Chemistry Stores, stock rooms.

Mrs. Mabel Hammond, senior secretary.

L. S. Hinkle, stock room assistant.

W. B. Jensen, assistant manager, Chemistry Stores.

Miss Winifred Jones, librarian.

R. G. Newbury, glassblower.

B. J. Nist, machinist, Chemistry.

Mrs. Helen Pearce, laboratory supervisor.

J. L. Sundling, machinist, Chemical Engineering.

A. W. Wakefield, lecture assistant, Instrument Stores.

C. B. Yates, stock room assistant.

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### Undergraduate Students

Registration figures show nearly 2,200 students taking courses in the department. This year the senior class in Chemistry has approximately sixty members, including both elective and professional majors. Chemical Engineering has about 150 undergraduate majors, with forty-five in the senior class.

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### Graduate Students

The Graduate School, including Chemistry and Chemical Engineering, is flourishing, with thirty-three people working for Master's degrees and eighty-six currently studying for the Ph.D. degree. There are five post-doctorate fellows working on research problems, and also a number of graduate students are taking work not directed toward a degree.

The old preliminary examinations have been discontinued. Instead, candidates for the Ph.D. take "cumulative" examinations appropriate to their major field. These examinations are given

twice quarterly on unannounced subjects and the student is expected to pass six of them in twelve attempts to complete the examination requirement. The philosophy behind this type of examination is to eliminate "cramming" and to develop habits of self-education. Material covered includes current literature in chemistry and related sciences as well as the subject matter of courses. Results to date have indicated this program to be very successful from the viewpoint of both students and staff.

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### **Curriculum Changes**

In keeping with changing times and ideas the curriculum for professional chemistry majors has been extensively changed. All first year students are given an examination, and those in the highest fourth are placed in the proficiency group and proceed with a two-quarter course in general chemistry, followed by one quarter of quantitative analysis. The second year's work may include lectures for three quarters in physical chemistry, organic chemistry lectures for three quarters and organic laboratory for two quarters, followed by a one quarter course in electronics, to be taught by the Electrical Engineering Department. Third year students will take physical chemistry laboratory for two quarters, one quarter of instrumental analysis, and also a sequence including organic qualitative analysis, special analytical methods, and the nature of the chemical bond. Seniors will be free to choose advanced courses in their own field of interest. This new program was begun last Autumn Quarter.

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### **Library**

Since the Autumn Quarter 1947 the departmental library has been a branch of the University Library, in charge of Miss Winifred Jones. Many of you will remember her from the science reading room. Our library now has over 8,000 books and bound volumes of periodicals and the department receives ninety current journals.

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### **Biochemistry**

Biochemistry is no longer a division of the Chemistry Department, but has expanded to become a department within the Medical School and is now located in the Health Sciences Building. Physical chemistry and engineering offices and research occupy the space formerly allotted to Biochemistry.

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### **Oceanography**

Oceanography now has been established as a department in the College of Arts and Sciences. The program of study will be expanded to include

both undergraduate courses and graduate work to provide for the Ph.D. degree. Dr. Thompson, who has been director of the Oceanographic Laboratories of the University as well as professor of Chemistry, will continue as professor of Oceanography in the new department.

One of the highest honors that an American scientist can receive was bestowed on Dr. Thompson when he was elected to the National Academy of Sciences this spring. He is the first faculty member at this University to be granted this honor.

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### **Building Improvements**

Even "new" Bagley Hall has become too small to accommodate the present research and teaching program, so more work room is being produced by finishing up the entire west end of the third floor which was formerly devoted mainly to storage. The plans include twenty-eight research rooms and four utility rooms. All spring the air has vibrated to the tune of jackhammers, and the halls have been lined with plumbers' benches and scaffolding, since a paint job in Bagley was included in the plans.

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### **Shops**

The increased need for specially built apparatus and equipment has necessitated enlargement of both the glass-blowing shop and the machine shop. The latter has some excellent new heavy machines capable of precision work. A smaller shop adjacent to the machine shop is at the disposal of mechanically minded students at any time. We are justifiably proud of the equipment, and of the excellent work done in the shops.

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### **Instrument Stores**

Our present lecture assistant has greatly increased the scope of his work by creating a central depot for special items of apparatus such as electrical and electronic instruments and numerous other types of apparatus not routinely carried by the stock rooms. In addition, he frequently shows educational noon movies of general interest and these have been well attended.

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### **Offices**

The large room at the front of the second floor, which was intended as a social hall, and which served as temporary office space for the deans of Medicine and Dentistry before the Health Sciences Building was constructed, has been converted into six offices and a conference room for staff members.

### **Picnics and Parties**

The good old tradition of the spring picnic is still strong. Last year the picnic was held at Lincoln Park in West Seattle. It was planned jointly by Iota Sigma Pi, Phi Lambda Upsilon, and Ammonii Soccii and was so successful that the same idea was followed this year. In addition to the picnic, the department has given a Christmas party at the Faculty Club for several years. Both of these affairs include faculty, graduate students, majors, and staff members and their families.

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### **New Awards**

Mr. Samuel G. Baker of Wilmington, Del., has very generously donated the funds to make possible an annual award of \$100 and an engraved certificate to go to a senior in Chemical Engineering who has an outstanding scholarship record and who shows promise of carrying on worthwhile research. The award will be called the Samuel G. Baker Award in Chemical Engineering and will be given this year for the first time. Mr. Baker, who was graduated in Chemical Engineering in 1925, is now general manager of the photo-products department of du Pont Company.

On the lighter side of life is the fairly recent award of distinction—in a negative sort of way—the Order of the Horse. This award is given only to those who distinguish themselves by some outstanding boner, and passes from one recipient to the next as the occasion warrants. The trophy consists of the southern portion of a north-bound horse, suitably mounted on a wooden plaque, and the ceremony of presentation takes place before an enthusiastic seminar audience.

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### **Visiting Lecturers**

Among the distinguished visitors who highlighted the seminar and lecture program for the past year were:

Dr. H. G. Cassidy of Yale,

Dr. Bryce L. Crawford, University of Minnesota,

Dr. George Glockler, head of Chemistry and Chemical Engineering Department, University of Iowa,

Dr. K. A. Kobe, University of Texas,

Dr. C. C. Price, head of Chemistry Department, Notre Dame University,

Dr. A. F. Scott, head of Chemistry and Chemical Engineering Department, Reed College.

Dr. W. P. Strandberg, Physics Department, Massachusetts Institute of Technology,

Dr. D. H. Templeton, University of California,

Dr. A. F. Walsh, Leeds University, England,

Dr. H. E. Wirth, Head of Chemistry Department, Syracuse University.

### **Next Year**

DURING THE NEXT few months local interest will be stimulated by lectures from several visiting chemists.

Prof. E. B. Wilson, of Harvard, will give a series of lectures on physical chemistry during the summer session.

Dean Henry Eyring, of the University of Utah, will be here as Walker-Ames Lecturer in physical chemistry during July and August.

Prof. H. J. Emeleus, of Cambridge University, England, will give lectures during October on selected topics in his field of inorganic chemistry.

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### **Let Us Hear from You**

At some future date we hope to include a section in our newsletter on the current activities of our alumni. We would appreciate it greatly if you would confirm your present address and send us comments on your work and position to assist in bringing our files up to date.

For the department,

HELEN SHINN PEARCE

Chemistry and Chemical Engineering

UNIVERSITY OF WASHINGTON

ALUMNUS  
REPORT

Name \_\_\_\_\_ Class \_\_\_\_\_

Address \_\_\_\_\_

Position \_\_\_\_\_ Organization \_\_\_\_\_

Business Address \_\_\_\_\_

News Notes:

News of Other Graduates:

Date: \_\_\_\_\_

Signed \_\_\_\_\_

Please return to Helen Pearce, Bagley Hall, University of Washington