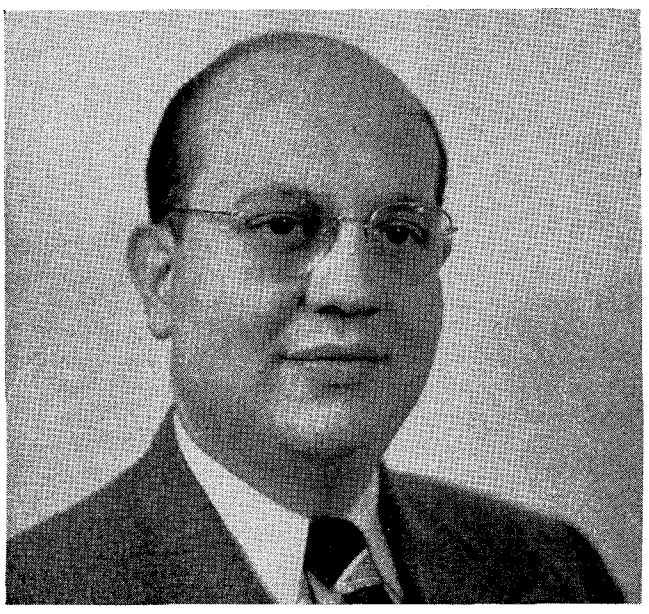
ALUMNI NEWS



A. M. Zarem is 1948's Outstanding Young Electrical Engineer.

HONORED BY ETA KAPPA NU

DR. ABE MORDECAI ZAREM, M.S. '40, Ph.D. '44, manager and chairman of physics research for the Stanford University Research Institute in Los Angeles, has been selected the Outstanding Young Electrical Engineer of 1948 by Eta Kappa Nu, national honor society for electrical engineers.

The Eta Kappa Nu Recognition Award is made annually "for meritorious service in the interest of (his) fellow men" to an electrical engineer no older than 35 who has been out of college for no more than ten years. On January 31, Dr. Zarem will receive a plaque at the Recognition Dinner to be held at the Henry Hudson Hotel in New York, during the winter meeting of the American Institute of Electrical Engineers.

Dr. Zarem was valedictorian of his class, and was named Honor Man of All Departments when he graduated in 1939 from the Armour Institute of Technology (now the Illinois Institute of Technology). He was given a graduate scholarship in electrical engineering at Caltech, and while working for his M.S. he served as an instructor in physics, electrical engineering and mathematics. Under the direction of Dr. Royal W. Sorenson, Zarem received his doctorate **magna sum laude** for research on the physical properties of the electric spark.

He then became research and development engineer for the Allis-Chalmers Manufacturing Co. in Milwaukee. There Dr. Zarem invented what he called "an automatic oscillograph with a memory," an automatically operated camera used to study electrical transients at irregular and unpredictable intervals.

In May, 1945, Dr. Zarem returned to Caltech as a research engineer and group leader for the Manhattan District Project, in work connected with the atomic bomb.

He then joined the staff of the United States Naval Ordnance Test Station at Pasadena, and in January, 1947, was named to head the electrical section of the newly formed physical research division. Here he continued his study of transient electrical discharges and of a method for photographing them. His development of an electric-optical shutter and camera-control, capable of sub-microsecond effective exposure times, opened the field of "synchronized microtime photography" for the United States Navy.

His invention of the Zarem camera, with a framing rate up to 100,000,000 per second and effective exposure time down to 0.000,000,001 second, is probably his outstanding achievement. This camera is used to study intense light sources and other phenomena. Synchronization of camera operation and occurrence of phenomena to within 0.005 microsecond has been accomplished.

In the past few years, Dr. Zarem has been acting as consultant to industrial and governmental organizations in such varied fields as electro-magnetics, transient electrical studies, gaseous discharge phenomena, oscillography, and electronic pulsing techniques. He also has conducted test work on equipment for measuring blast pressures, and electrical breakdown characteristics of natural minerals, plastics and oils.

In his present position as manager and chairman of physics research for the Stanford Research Institute, Dr. Zarem is responsible for the co-ordination of technical and administrative activities of his office in such fields as acoustics, electricity, magnetism, light and optics, spectroscopy, analytic mechanics, and heat transfer.

The Eta Kappa Nu award which Dr. Zarem has received is given not only for technical ability and accomplishments, but also for interest in cultural and civic advancement. Dr. Zarem rates high here too. He is an associate of the Pasadena Playhouse, a music lover and devotee of the opera, an avid reader, an amateur woodworker, an expert photographer, and a pretty fair limerick writer. He lives in Pasadena with his wife, the former Esther Merritt, whom he met at the Armour Institute, and two children—Janet Ruth, three years old, and David Michel, not yet one.

DINNER-DANCE

THE NEXT EVENT scheduled by the Alumni Association is a dinner-dance to be held at the Oakmont Country Club on Friday, March 4. John Farneman, dance chairman, has planned a full evening, including organ music from seven to nine p.m., dinner at eight, and dancing to Hal Lomen's orchestra from nine to twelve p.m. The bar will be open from seven o'clock on. The affair is to be semi-formal. Members of the dance committee: Carl Friend, Claude Davies, Gardy Wilson, Stan Wolfberg.

CRYSTALLOGRAPHER HARKER

DR. DAVID HARKER, Ph.D. '36, has been named to head a newly-formed Division of Crystallography at the General Electric Research Laboratory in Schenectady.

Crystallography, formerly part of the laboratory's metallurgical division, actually cuts across the fields of chemistry, electronics, and physics, as well as metallurgy. The work of the new division will center on

problems of inter-atomic arrangement, particularly with respect to the structure of crystals.

Dr. Harker, an authority on electron microscopy, received his B.S. from the University of California in 1928. After receiving his Ph.D. at Caltech in 1936 he taught chemistry at Johns Hopkins University for five years. He has been at the GE Research Laboratory since 1941.

NEW AEC RESEARCH DIRECTOR

DR. KENNETH S. PITZER, '35, who has already distinguished himself as one of the nation's leading physical chemists, has been appointed Director of Research for the U. S. Atomic Energy Commission. Dr. Pitzer, who took over his new duties on January 1, was professor of Chemistry at the University of California. He had been a member of the faculty at Berkeley since 1937.

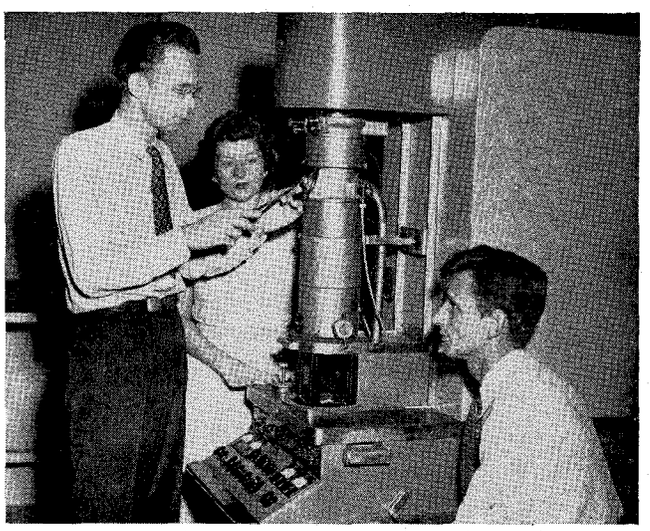
As Director of Research, Dr. Pitzer will have charge of the AEC's research program in the physical sciences, and supervise the administration of the isotope production and distribution program.

GENE PHOTOGRAPHER PEASE

DR. DANIEL C. PEASE, M.S. '38, and Dr. Richard F. Baker, both of the University of Southern California, reported this month that they had observed and photographed genes—the infinitesimal particles that transmit physical characteristics of living things from one generation to another.

Dr. Pease is Assistant Professor of Anatomy at the U.S.C. School of Medicine. Dr. Baker is Assistant Professor of Experimental Medicine. They made their observations with a standard electronic microscope on unprecedentedly thin cross-sectional slices of animal tissue. Chromosomes of the fruit fly, which are relatively large, were used in the experiments. By hardening the tissue specimen with paraffin, collodion, and air chilled by dry ice, and using a new cutting technique which they developed themselves, the two scientists obtained slices only 1/250,000th of an inch thick. Electrons were thus able to penetrate the tissue sections to reveal their structure.

Observation of genes has been an ambition of scientists ever since Gregor Mendel first indicated the existence of these smallest particles of life, almost a century ago. If these actually are genes which Pease and Baker have observed and photographed, their discovery will be of enormous importance to medical and biological research. To date, though, other scientists are skeptical, waiting for further proof before they agree that genes have finally been seen.



Pease (right) and Baker aim an electron microscope at genes.

Personals

1923

Hubert Woods has resigned from the Riverside Cement Co. in Los Angeles to become Director of Research of the Portland Cement Association at its new research laboratories in Chicago.

1928

Carl F. Renz, M.S., materials engineer for the Ohio Division of the U. S. Engineers, has been named President of the Cincinnati Section of the American Society of Civil Engineers.

1929

Thomas H. Evans, head of the Civil Engineering Department at Georgia Tech, visited the Caltech campus early this month.

William G. Young, Ph.D., a member of the UCLA faculty since 1930, and now Physical Science Dean at UCLA, has been elected chairman of the Division of Organic Chemistry of the American Chemical Society.

1936

Robert G. Parker, Ex-'36, petroleum engineer at Seal Beach, Calif., for the Continental Oil Company's producing and drilling department, has been promoted to the post of assistant district superintendent at Wichita Falls, Texas.

1938

Joseph F. Ware, Jr., M.S., reports he is a flight test engineer with the Lockheed Aircraft Corp. in Burbank.

Samuel E. Watson has returned from Venezuela where he spent seven years as a mining engineer for the Texas Company. He is now stationed in Bakersfield—still working for Texas.

Henry K. Evans, staff engineer of DeLeuw, Cather & Co., Consulting Engineers, has been appointed western representative of the firm, which has established a western office at 79 McAllister St., San Francisco.

1939

Edwin F. Sullivan, engineer with the U. S. Bureau of Reclamation in Sacramento, has been elected 1st Vice-President of the Sacramento Section of the American Society of Civil Engineers.

1940

Frank W. Brown, M.S., Lt. Comdr. with the Medical Service Corps, U. S. Navy, was married in October to Miss Sue Heath in Larchmont, N. Y. He is now assigned to the Radiological Laboratory at the San Francisco Naval Base.

C. Fink Fischer, M.S. '41, Comdr. U.S.N., is now with the Pilotless Aircraft Development Laboratory of the Naval Air Development Station in Johnsville, Pa.

Keith E. Anderson is with the Iowa Geological Survey in Iowa City.

Jerome Kohl resigned in December from the Tide Water Associated Oil Co. to accept a position as Chemical Engineer in charge of Industrial Application for the Western Division of Tracerlab Inc., 2295 San Pablo Ave., Berkeley. He writes:

"Tracerlab's headquarters are in Boston. The three basic elements of its business are Instruments, Radiochemistry, and Industrial Applications of Isotopes. The Western Division, which has just been opened, includes two other Caltech men on its staff: **Lloyd Zumwalt,** Ph.D. '39, Technical Director, and **Walton A. Wickett,** Ex-'37, in charge of sales."

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