

The Summer at Caltech

Faculty Changes

New members of the Institute's staff of instruction and research for 1961-62 include:

Joseph Blau, visiting associate professor of philosophy, from Columbia University, where he is associate professor of religion.

Arthur Boucot, associate professor of paleontology, from MIT, where he was associate professor of geology.

David J. Braverman, assistant professor of electrical engineering, from Stanford, where he received his PhD in June.

Charles J. Brokaw, assistant professor of biology, from the University of Minnesota, where he was assistant professor of zoology. He received his BS from Caltech in 1955 and his PhD from Cambridge University in 1958.

James Burdon, visiting associate in chemistry, from Birmingham University in England, where he is a lecturer in chemistry.

K. Das Gupta, senior research fellow in engineering, from the University of Calcutta, where he is a Reader. He received his MS from the University of Calcutta in 1940 and his PhD from the University of Liverpool in England in 1952.

John D. Dixon, instructor in mathematics, from McGill University in Montreal, Canada, where he received his PhD in June.

Olin J. Eggen, professor of astronomy and staff member of the Mount Wilson and Palomar Observatories, from the Royal Greenwich Observatory in Sussex, England, where he was chief assistant to the Astronomer Royal. He received his BA in 1940 and his PhD in 1948 from the University of Wisconsin.

Robert F. Howard, staff member of the Mount Wilson and Palomar Observatories, from the University of Massachusetts, where he was assistant professor of astronomy. He received his BS from Ohio Wesleyan University in 1945 and his PhD from Princeton in 1957.

Icko Iben, Jr., senior research fellow in physics,

from Williams College, where he is assistant professor of physics.

Karl R. Johansson, associate professor of environmental health, from the Virology and Rickettsiology Study Section of the National Institutes of Health at Bethesda, Md., where he was executive secretary. He received his BS in 1942, his MS in 1946, and his PhD in 1948 at the University of Wisconsin.

Milton Lees, assistant professor of mathematics, from New York University, where he was assistant professor of mathematics. He received his PhD from the University of California in 1958.

Robert W. Long, visiting associate in chemistry, from El Camino College, where he is an instructor in chemistry. He received his AB from Indiana State Teachers College in 1938 and, his PhD from the University of California in 1941.

Oscar Mandel, visiting associate professor of English, from the University of Nebraska, where he is associate professor of English.

Edwin S. Munger, professor of geography, who has been a lecturer on the American Universities Field Staff. He received his MS in 1948 and his PhD in 1951 from the University of Chicago.

Minoru Nishida, senior research fellow in astrophysics, from Kyoto University in Japan, where he is assistant professor of astrophysics.

Paul Orlov, M.D., lecturer in Russian, from Georgetown University, where he was lecturer in Russian at the Institute of Languages and Linguistics.

Major Lorrin C. Peterson, professor of air science and tactics, from the Air America Plant Office of the Air Materiel Force in the Pacific Area.

Robert A. Phinney, assistant professor of geophysics, who received his PhD at Caltech last June.

Lenard O. Rutz, visiting associate in chemical engineering, from the University of Iowa, where he is assistant professor of chemical engineering. He received his BS in 1952 and MS in 1953 from the University of Wisconsin and his PhD in 1958 from the State University of Iowa.

Alan Sharples, instructor in mathematics, from the

University of Liverpool, England, where he is an assistant lecturer. He received his BS in 1956 and his PhD in 1960 from Manchester University.

Stewart W. Smith, assistant professor of geophysics, who received his PhD at Caltech in June.

Ronald Soohoo, associate professor of electrical engineering, from the Lincoln Laboratory at MIT, where he was a research physicist and staff member. He received his BS in 1948 and MS in 1952 from MIT, and his PhD from Stanford in 1956.

Alvin Walz, visiting associate in chemistry, from Mankato State College in Wisconsin, where he is a professor of chemistry.

Gerald Whitham, visiting professor of applied mechanics, from MIT, where he is professor of mathematics. He received his BS in 1948, his MS in 1949, and his PhD in 1953 from Manchester University in England.

DEPARTURES:

Daniel G. Dow, assistant professor of electrical engineering, to the Central Research Laboratories of Varian Associates in Palo Alto.

Albert E. J. Engel, professor of geology, resigned to be professor of geology at the Scripps Institute of Oceanography at La Jolla.

Lester Field, professor of electrical engineering, to the Hughes Aircraft Company as head of the Microwave Tube Division.

Major F. W. MacKenzie, professor of air science and tactics in the ROTC, to the ballistic missile division of the Air Force in Inglewood as an orientation officer.

Elliot Pinson, instructor in electrical engineering, received his PhD at Caltech in June and has now joined the staff of the Bell Telephone Laboratories in Murray Hill, N.J.

Calvin H. Wilcox, associate professor of mathematics, resigned, to the University of Wisconsin where he is professor of mathematics.

ON LEAVE OF ABSENCE:

Allan J. Acosta, associate professor of mechanical engineering, to Imperial College in London for a year, to do research on fluid mechanics.

Max Delbruck, professor of biology, to the University of Cologne in Germany, for two years as director of a new Institute of Genetics.

Robert P. Dilworth, professor of mathematics, to the Institute for Defense Analysis, at Princeton University for one year.

William A. Fowler, professor of physics, to St. Johns College, Cambridge University, England, for one year, to collaborate with Plumian Professor Fred Hoyle in the preparation of a manuscript on the origin of nuclear species.

David R. Smith, assistant professor of English, to

lecture at the Universities of Lille and Toulouse in France for one year.

HONORS AND AWARDS:

Stanford S. Penner, professor of jet propulsion and mechanical engineering, has been named by the Air Force Office of Scientific Research to the newly-formed Research Advisory Committee on Engineering Sciences.

Ernest H. Swift, chairman of the Division of Chemistry and Chemical Engineering, has received the 1961 honor scroll of the American Institute of Chemists' western chapter "for the many years devoted to teaching and for the promotion and development of his profession and for his concern and attention for those within the profession of chemistry."

Rudolph Minkowski, who retired from the Mount Wilson and Palomar Observatories last year, has been named recipient of the 1961 Bruce Gold Medal of the Astronomical Society of the Pacific.

Ernest E. Sechler, professor of aeronautics, has been appointed a member of the National Academy of Sciences-National Research Council Committee on Basic Research Advisory to the U. S. Army Research Office. The appointment is for three years. Dr. Sechler is also chairman of the NASA Committee on Missile and Spacecraft Structures.

PROMOTIONS:

To Professor:

Felix H. Boehm—Physics
Eugene W. Cowan—Physics
Dino A. Morelli—Engineering Design
G. Wilse Robinson—Physical Chemistry
Rolf H. Sabersky—Mechanical Engineering
David W. Wood—Mechanical Engineering
Theodore Y-T. Wu—Applied Mechanics

To Associate Professor:

James K. Knowles—Applied Mechanics
John H. Richards—Organic Chemistry
J. Beverley Oke—Astronomy
Robert W. Oliver—Economics
David F. Welch—Engineering Design

To Senior Research Fellow:

Rudolf L. Mossbauer—Physics
Arthur F. Messiter—Aeronautics
Sten Samson—Chemistry
Richard L. Sears—Physics
John D. Smith—Biology
Paul O.P. Ts'o—Biology

To Assistant Professor:

Peter V. Mason—Electrical Engineering

In Memoriam



HOWARD P. ROBERTSON, professor of mathematical physics, died on August 28 of injuries sustained in a traffic accident. He was 58 years old. At a memorial service held on the campus on August 30, President L. A. DuBridge paid tribute to Bob Robertson as "a unique figure in the world of science and education—

unmatched for the breadth of his interests and talents, unsurpassed in the depth of his knowledge both of the physical universe and of the world of men.

"Bob was born in Hoquiam, Washington, on January 27, 1903," said President DuBridge, "received his bachelor's degree from the University of Washington at the age of 19 and his doctor's degree from Caltech at the age of 22. After study in Europe, he came back to spend his professional life on the faculties of Princeton University and the California Institute of Technology.

"As a mathematician and physicist, he devoted his attention to the fields of differential geometry, relativity theory and cosmology . . . Professor Paul Epstein has given the following summary of Robertson's chief contributions to science:

"The scientific personality of H. P. Robertson was characterized by exceptional mathematical powers, coupled with a deep insight into physical processes. His chief interests lay in general relativity, in which field he will be mainly remembered for two contributions of outstanding importance.

"(1) Early in his career he gave the solution of Einstein's cosmological equations for the case of a homogeneous and isotropic universe. This solution served ever after as the basis for most of the vast number of papers written by other authors on relativistic cosmology.

"(2) By bringing to bear his great mathematical skill on the two-body problems in general relativity he succeeded in obtaining its solution, a task which before him had been unsuccessfully tried by almost all the best specialists.

"Of his work on subjects other than relativity, the most important is perhaps that relating to the quantum-dynamical principle of indetermination. Instead of restricting himself to the theory of measurement of a *coordinate* and of the associated *momentum*, Robertson asked about when and to what extent *any* two physical observables whatever can be simultaneously measured, and in a simple and elegant way

he set up the conditions for this. In all modern textbooks the principle of indetermination is now presented in this generalized form.'

"Dr. Robertson's achievements as a physicist were recognized by his election to the National Academy of Sciences in 1951, and in 1958 he was elected foreign secretary of the Academy. . . . Yet the astonishing thing about Bob's career—and the phase which may have had the greatest impact—was the way in which, during World War II and after, he turned from abstruse subjects like relativity to the practical problems of military strategy. . . . He quickly won the respect of both scientists and military officers in his grasp of war problems, his keen analytical ability and his skill in bringing the results of scientific analysis into useful and understandable form.

"In the years after World War II he was heavily engaged in military advisory tasks. He spent two years as scientific adviser to the Supreme Commander of the Allied Forces in Europe while General Alfred Gruenther held that post and General Norstad was United States Air Commander. He served two years as Director of the Weapons System Evaluation Group in Washington, working directly with the Joint Chiefs of Staff. He was on every important science advisory board—the Defense Science Board, the President's Science Advisory Committee, the Advisory Committee for the Mutual Weapons Development Program, the Science Advisory Group to NATO, and many others.

"However, Robertson's extracurricular activities were not confined to government service. He was a trustee of the Systems Development Corporation, the Institute for Defense Analysis, and the Carnegie Endowment for International Peace; and he was a director of the Northrop Corporation. . . .

"But it is for his work closer to home that most of us here will remember Bob—as a teacher, as a devoted faculty member, and as a loyal, thoughtful and generous friend. . . .

"No one can ever replace Bob—as a scientist, as a citizen, as a faculty member or as a friend. His tragic and untimely death leaves an aching void. Yet we can comfort ourselves that he did spend 14 active, fruitful years here—years which were happy and stimulating for him and years which will leave permanently a respected and a fond memory of a great man. . . ."

Among the many telegrams of condolence received by the Robertson family was this from President John F. Kennedy: "Your tragic loss is shared by the many in government who have been fortunate to benefit from Bob Robertson's wise counsel and warm friendship. He gave unselfishly of his great talent and energy in serving the nation's needs. As a scientist and teacher, foreign secretary of the National Academy of Sciences, member of the President's Science Advisory Committee, chairman of the Defense Science Board, scientific advisor to SHAPE, and in other key roles he has left an enduring contribution at home and abroad. Please accept our deepest sympathy."

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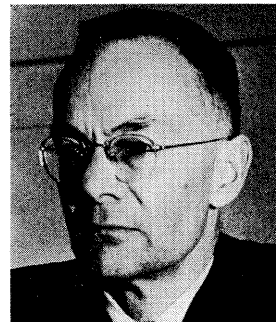
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In Memoriam . . . continued

STUART JEFFERY BATES, professor emeritus of chemistry, died on July 28 at the age of 74. One of the oldest members of the Caltech faculty in point of service, Dr. Bates taught physical chemistry to undergraduates for 42 years until his retirement in 1956. He wrote papers Number 1 and 2 of the now more than 2700 published by workers in Caltech's Gates and Crellin Laboratories of Chemistry.



Born in Toronto, Canada, on May 9, 1887, Stuart Bates received his AB and AM degrees from McMaster University there. He got his PhD in 1912 from the University of Illinois, where he served as instructor in physical chemistry until he came to Caltech in 1914.



HUNTER MEAD, professor of philosophy and psychology, died on July 2, following surgery for a brain tumor. He was 54 years old. Dr. Mead came to Caltech in 1947. In addition to his teaching he was director of musical activities on the campus. He

built a mammoth 950-pipe organ in his home, where he held occasional concerts for students and faculty.

Born in Sierra Madre, he was graduated from Pomona in 1930, received his MA from Claremont College in 1933, and his PhD from USC in 1936. Author of *An Introduction to Aesthetics*, and *Types and Problems of Philosophy*, he was at work on a comprehensive history of philosophy at the time of his death.

PAUL WILLARD MERRILL, retired from the staff of the Mt. Wilson and Palomar Observatories, died on July 20. He was 73 years old. Dr. Merrill's specialty was stellar spectroscopy and he was one of the foremost authorities on spectrum analysis. Born in Minneapolis on August 15, 1887, he was graduated from Stanford University, and received his PhD from the University of California at Berkeley in 1913. He joined the Mt. Wilson Observatory staff in 1919. Though he retired officially in 1952, he continued his research at the observatory's offices in Pasadena until the time of his death.

