CALTECH NEWS

PUBLISHED FOR ALUMNI AND FRIENDS OF THE CALIFORNIA INSTITUTE OF TECHNOLOGY

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Dabney Students Host Browns As House Guests

Nearly a year ago some undergraduates invited President and Mrs. Harold Brown to live for a short time in a student house early in first term. The visit almost took place in November, but fell through when the Browns went to Helsinki where he participated in the Strategic Arms Limitations Talks. Finally, on March 1 and 2, the Browns moved into the Resident Associates' suite in Dabney House; RA's John and Sandra Webb moved into the Brown's large house on the east side of the campus.

The students in charge hesitated to plan the visit too much because they wanted the Browns to be a part of house life as it is. As a result the Browns were sometimes at a loss to know what was expected of them. Mrs. Brown felt she had to fend for herself most of the time, except for being invited to classes by one or two house members. The students were disappointed at the little time Dr. Brown spent there. Even though they were aware of his heavy schedule, some of them still entertained the fantasy of his sitting around the house lounge playing bridge all afternoon.

Some of the Pressures

Mrs. Brown felt that much of the responsibility of making the visit work was on the two of them, but felt that her own initiatives succeeded in establishing an interaction. Her impression was that the students were eager to have others learn about them. In all, the Browns think their brief time in Dabney was well spent.

It was by far their most intensive exposure to Caltech undergraduates. And very important, it happened in what Mrs. Brown concludes was a highly representative atmosphere. They sensed some of the pressures students face and what kinds of responses students have to Caltech life. She is concerned that many of the students are not at all easy to approach. (This concerns the students, too.)

Undefinable Mystique

She would like to expand the relationships on her own home ground. She knows they have an attraction there, because even as the Browns were sleeping in Dabney House, some of their student companions of a few hours before were swimming (at the Browns' and Webbs' invitation) in the heated pool at the president's house.

The students who did spend time with the Browns look back with some satisfaction on the two days. Although the hours the Browns kept were markedly different from those of the students, they enjoyed the time they did spend talking, at least after they got through the uncomfortable formality of the preprandial conversations the first evening.

Their conclusion about Harold Brown is that he really cares about improving Caltech and is working hard to do so. And knowing, they said, that he was sleeping under the same roof and not just spending a few hours after dinner, provided an undefinable mystique.

Physicist Robert F. Christy

Caltech Names New Provost

Caltech will have a new vice president and provost next fall, and even though he has been a member of its faculty for 24 years, he looks forward to having six months to learn about the job before he has to start doing it. Robert F. Christy, professor of theoretical physics and chairman of the faculty, will hold the second highest administrative post at the Institute when he succeeds Robert F. Bacher, who retires after having served as provost since 1962.

As Caltech's chief academic officer, Christy will have over-all responsibility for faculty appointments and promotions, and for academic planning and research. He feels that the fact that he has been at Caltech for a long time, that he knows the faculty, and that they know and trust him will be very helpful.

Christy decided to accept the job of provost partly on the basis that he has changed the nature of his work occasionally in the past and has found doing something new very stimulating. "I'd rather try new things than get into a rut," he says.

In fact, Christy's career shows very little evidence of time spent in a rut. During World War II he worked at Los Alamos on the development of the atom bomb. In the immediate postwar years he concentrated on theoretical and nuclear physics, and for the last nine years he

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Brown Talks on Managers, Arms, and Pollution

"Administrators, including university presidents, are overhead. The success of what we are trying to do depends upon the talents of our outstanding faculty and students on campus, and on the talents of the engineers and scientists at JPL. No matter how well the rest of us do our jobs, only they can keep Caltech and JPL excellent. This doesn't make us managers second-class citizens, but it should help us keep our priorities straight."

In his talk titled "Can Excellence Be Managed?" Brown put the role of administrators into perspective for Caltech's Management Club at its January 13 meeting. He explained how he thought management should function at Caltech, both on campus and at JPL.

First, he said, management exists to help place the technological and educational activities of the Institute in a broader setting. Because Caltech has to pay attention to society's long-range interests, management must take the responsibility for closing the gap between the inner, encapsulated purpose of the Institute and the pressures and desires of the world outside. That is, it must explain science, technology, and development to the public.

Second, management must produce a form of governance that fosters acceptable relations among the various parts of the community and of the institution. It must understand and explain the need for people at Caltech's kind of institution to ask questions—and it must defend that need. It also must see that there is some sort of coherence in the Institute's activities and see that the right to question and to criticize is exercised in a way that does not infringe upon the freedoms of others.

Third, Brown said, there are limits to the role management can play. If administration becomes an end in itself, it will destroy excellence in the institution that is being administered. Whenever management takes actions that are not aimed at enhancing the work of the engineers and scientists, the faculty and students, then it undermines the health of the Institute.

Brown's answer to the question in the title of his talk was that excellence "cannot be managed into existence. It can, however, easily be aborted. Is is our job to nurture, encourage, and augment excellence."

Caltech president Harold Brown has been fitting an inordinate amount of speech-making into his already busy schedule these days. Since mid-January he has made a number of them, on widely different subjects, to very diverse groups. In a talk at the Caltech Management Club meeting on January 13, he asked—and answered—the question, "Can Excellence Be Managed?" On February 9 he spoke to the Los Angeles World Affairs Council (and repeated his remarks to the Caltech community in Beckman Auditorium on February 18) on "Strategic Arms Limitations Talks—Results and Outlook." Then he spoke about "The University and Environmental Research" to the Institute for the Advancement of Engineering on February 28.

Strategic Arms Limitations

As one of the six members of the U.S. delegation participating in strategic arms limitations talks (SALT) with the Soviet Union, Brown attended the first session in November and December in Helsinki, Finland. Though limited in the amount he could disclose regarding these first meetings, he made some comments in a speech to the Los Angeles World Affairs Council on February 9.

"In these discussions," he said, "we seek to slow down, to halt if possible, and perhaps eventually even to reverse the continual cycle of development and deployment of new strategic weapons systems which constitutes the strategic arms competition between the United States and the Soviet Union." Both countries now have the ability to strike back and destroy, despite any defenses, the civilization of the other. The security of each side thus rests on this assured destruction capability, which deters the other from launching a thermonuclear attack.

Brown pointed out that "this is a dismal sort of safety, resting as it does on the good sense of another government, but so long as nuclear arsenals exist it is the best we are likely to know." Continued developments and deployments are not likely to make either side any more

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NEWS IN BRIEF

Undergrad Hopes for IHC Girls Disappear

An idea that warmed the blood of undergraduates and stirred up heated debate among faculty members faded last month when the board of trustees of Immaculate Heart College decided to proceed with its original plan to move the campus of the Catholic liberal arts girls' school from Hollywood to Claremont.

The IHC plans—developed over the past five years—to associate with the Claremont Colleges were interrupted last December by an enthusiastic invitation from some Caltech undergraduates and faculty members to move next to the Institute campus in Pasadena.

In January the *Los Angeles Times* reported that "conversations are under way between Caltech and Immaculate Heart College that could lead to a future alliance." Although no merger between the two schools was ever contemplated, the sale to IHC of some Caltech land on the northwest corner of San Pasqual St. and Wilson Ave. could have facilitated the exchange of students in certain classes, and would have made the girls of IHC more available for social contacts with Caltech students.

But Caltech could not make even this limited kind of commitment without long-term evaluation, and IHC was faced with deadlines relating to federal grants and loans, as well as a pressing construction schedule at Claremont.

Sister Helen Kelley, president of IHC,

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ARBOR DAY LIBERATION

Arbor day, never a big event at Caltech before, was done up in grand style this year under leadership of the students' Caltech Environmental Action Council. On March 6 the CEAC provided a lunchtime concert on the steps of Throop Hall, then planted two jacaranda trees near Millikan Library, and finally "liberated" a historic plot of forbidding iceplant between Crellin and Gates Laboratories to make way for a new lawn.

Harold Brown:

"Continued Productive Dialogue"

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secure, and it may well turn out that both will be less secure.

The talks at Helsinki were not for the purpose of negotiating agreements but to see if the foundations could be laid for subsequent substantive and detailed negotiations. Brown said that each side wanted to explore the thinking of the other and to probe its seriousness of purpose.

The Soviet motives in strategic arms talks are probably quite complex, but Brown felt that among them might be, first, a desire to damp down the arms race, improve the security of both sides, and save the money that would otherwise be spent on strategic forces. A second possible Soviet motive might be to prevent U.S. moves in the strategic arms competition that they fear might tilt the balance in our direction. A third motive could well be political, perhaps to stabilize one of the many fronts on which the Soviets find themselves engaged or to place restraints upon the U.S.

Whatever their motives, Brown said it became clear to him that the Soviets were quite serious in these discussions. In the first place the Soviet delegation had individuals who were very knowledgeable about the Soviet weapons programs—a new phenomenon in such discussions. Second, there were no polemics and few if any examples of ideology overriding sound analysis. Though clear differences in view emerged, both sides kept the talks private, serious, and constructive in tone. The third evidence of the Soviet attitude was that their presentations showed that they had been thinking long and hard about strategic arms.

Brown felt that, as a result of the discussions, a program of work was agreed upon that will allow flexibility for subsequent negotiations to begin in Vienna in April. He cautioned Americans not to expect too much, too fast, since in such matters as national security both sides can be expected to exert great care and caution. At the very least, it is his opinion that we can expect a continued productive dialogue about the weapons systems of both countries. Such a dialogue cannot help but provide information for both sides that may reduce the most extreme concerns that have led to overreactions and increased rates of strategic arms buildup.

It is also possible that a specific agreement may be reached; this would require complex arrangements, patience, and give-and-take on both sides. Thus, even if the talks are successful, they may go on for a long time.

Brown concluded that no international enterprise is more important than damping the strategic arms competition. "The coming phases of SALT may determine whether each of our countries is given the chance to turn to the nonmilitary problems which concern us all—the population explosion, environmental pollution, domestic tranquillity, the problem of the developing countries—or whether, instead, the risk of turning this planet into a thermonuclear inferno will become greater and greater, and perhaps overwhelm us all."

Pollution Control

Addressing the Institute for the Advancement of Engineering at the Beverly Hilton Hotel on February 28, Brown pointed out that everyone is now on the bandwagon of saving the planet from environmental pollution, but he questioned whether people understand the nature and magnitude of the problem. "Looking at this kind of problem," he said, "we must face up to the fact that when we talk about the polluters—the guilty ones in connection with the environmental health question—we mean us, all of us. We would do well to remember this as we seek solutions."

Brown said that he wanted to be the first to acknowledge that Caltech's technological contributions of the past bear some responsibility for today's environmental problems, but he pointed out that the Institute has also for a long time been interested in their solutions.

What universities can do about protection of the environment will be different for each institution, Brown said, but the activities of all the universities taken together will be swamped by the total needs and expenditures.

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News Briefs

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in reiterating her school's intentions to move to Claremont, said: "Whether anything beyond the very useful cooperation which now exists between Caltech and IHC would have developed from prolonged discussions is impossible to say. That IHC and Caltech know one another better and for the most part appreciate more one another's goals and procedures can only be considered as mutually advantageous and reason enough to continue to discuss other means of cooperation in the future."

SCIAC Champions

Coach Tom Gutman's wrestlers captured the Southern California Intercollegiate Athletic Conference championship last month—the first conference championship for Caltech in any sport in eight years. Outdistancing teams from Pomona, Redlands, Whittier, and Claremont-Mudd, the Caltech grapplers collected 93 points and four individual titles: Alan Beagle, undefeated all year, won the 191-pound title, Doug Wood took the 158-pound crown, Bruce Johnson was tops in the heavyweight division, and Phil Geschwend came out as the SCIAC 126-pound champ.

Alexander Goetz

Alexander Goetz, 72, retired associate professor of physics, died of cancer on January 12 at his home in Altadena. The physicist, who joined the Caltech faculty in 1930 and retired in 1966, specialized in studying how aerosols pollute the atmosphere.

Goetz was educated in his native Germany and was a Rockefeller fellow at Caltech from 1927 to 1930. He held about 40 patents, many for devices for studying microscopic smog particles.

Lacey Lectureship

This year's W. N. Lacey Lectureship in Chemical Engineering brought Rutherford Aris, professor of chemical engineering at the University of Minnesota, to Caltech. Aris presented two lectures on campus in February: "Mathematics and the Elucidation of Chemical Concepts: The Notion of a Chemical Reaction Mechanism"; and "Mathematics and the Modeling of Chemical Systems: The Transient Behavior of Chemical Reactors."

The Lacey Lectureship was established three years ago by friends of the former Caltech faculty member through the W. N. Lacey Fund. The lectures are designed to bring to the Institute internationally known experts who are active in chemical engineering or related disciplines.

Coming Events

Tuesday, Mar. 31, 8:00 p.m. Beckman
TUESDAY NIGHT AT THE SILENT MOVIES. "Way Down East" with Lillian Gish and Richard Barthelmess. $2.50

Saturday, Apr. 4, 8:30 p.m. Beckman
CIRO AND HIS BALLET FLAMENCO. $5-4-3-2.

Sunday, Apr. 5, 8:00 p.m. Beckman
THE CANTORS' CONCERT ENSEMBLE. Reserved $4.50, general $3.00, students $1.50.

Sunday, Apr. 5, 8:15 p.m. Dabney
FESTIVAL PLAYERS OF CALIFORNIA. Evening of music by Hindemith, Beethoven, Bach, Zechlin, and Cowell. Free.

Sunday, Apr. 12, 8:00 p.m. Beckman
LIFE IN THE YEAR 2001. A lecture by A. C. Clarke. General admission, $2; students, free.

Monday, Apr. 13, 8:30 p.m. Beckman
THE LOS ANGELES BASIN AS A GIANT SMOG REACTOR. A lecture by John H. Seinfeld, Caltech assistant professor of chemical engineering. Caltech lecture series. Free.

Tuesday, Apr. 14, 8:00 p.m. Beckman
TUESDAY NIGHT AT THE SILENT MOVIES. "Mark of Zorro" with Douglas Fairbanks and Noah Beery. $2.

Saturday, Apr. 18, 9:00 a.m. Beckman
STUDENTS' DAY. Caltech.

Sunday, Apr. 19, 8:30 p.m. Beckman
AMADEUS QUARTET. Coleman Chamber Concerts. Music by Mozart, Schubert, and Beethoven. $5-4-3-2.

Monday, Apr. 20, 8:30 p.m. Beckman
THE GRAND TOUR OF THE OUTER PLANETS. A unique scientific opportunity. A lecture by Ray L. Newburn Jr., space sciences division at JPL. Caltech lecture series. Free.

Saturday, Apr. 25, 8:00 p.m. Athenaeum
ALUMNI ASSOCIATION BARN DANCE.

Sunday, Apr. 26, 3:30 p.m. Beckman
COLEMAN AUDITION FINALS. Concert by the Audition finalists competing for the Vera Barstow, Coleman, and Nadia de Kibort Awards. $5-4-3.

Monday, Apr. 27, 8:30 p.m. Beckman
ENVIRONMENT AND THE FUTURE OF TECHNOLOGICAL CIVILIZATION. A lecture by Carver A. Mead, Caltech professor of electrical engineering. Caltech lecture series. Free.

May 16
Alumni Seminar Day. See separate announcement for program.

June 10
Annual Alumni Association Dinner

SPECIAL NOTICE:
Commencement will be held June 12 at 10:30 a.m.

Weigle Memorial Lectures

The first Jean Weigle Memorial Lecture at Caltech was given February 2 by Herman M. Kalckar, professor of biological chemistry at Harvard Medical School. Kalckar has made extensive studies of biochemical genetics in man and microorganisms with special reference to galactose metabolism. A recent extension of this work correlates diverse aspects of the physiology of bacteria, and this phase of his research was the subject of his Weigle lecture.

Memorial lectureships at both Caltech and the University of Geneva were established by friends and colleagues of Jean Weigle after his death in December 1968. Weigle, who was head of the physics department at Geneva for 17 years, left there after suffering a heart attack in 1948. When he visited Caltech's physics department in 1950, the physicists referred him across the campus to physicist-turned-biologist Max Delbruck, and Weigle became a member of Delbruck's Phage Group. Among his early contributions to their research was the introduction of the possibilities of the electron microscope—which made possible some important discoveries in molecular biology.

The first Weigle Memorial Lecture in Geneva was given last October 27 by Caltech biologist Robert Edgar (now provost of College Number 6 at the University of California at Santa Cruz), who worked closely with Weigle at Caltech for more than ten years. Edgar's topic, "Blueprint for a Virus," summarized the work done in isolating conditionally lethal mutations in defective genes in bacteriophage—work that underlies current research on the molecular basis of heredity. That work, says Edgar, reflected Weigle's guiding influence both in scientific contributions and in elegant and precise research techniques. "He was a bridge," Edgar says, "between Caltech and the University of Geneva. For almost 20 years he fostered a continuous two-way traffic in ideas, people, and scientific accomplishment—a really reciprocal brain-drain."

Brown on Pollution

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Caltech is particularly interested in helping to solve the smog problem. For the last three months a group of Caltech faculty have been investigating what it is, what is being done about it, and what needs to be done. Some of their conclusions:

► The breakdown of pollutants according to source and the future projections (based on specific assumptions) made by the Air Pollution Control District of Los Angeles County have been generally confirmed by the Caltech study group.

► The emissions of motor vehicles are still the number one smog problem in the Los Angeles Basin, but many improvements are feasible. Under the new standards to be imposed on piston engines through 1972, they can be achieved with currently available technology, and so, probably, can the more stringent standards proposed by the APCD through 1975, which could reduce auto emissions further during the 1980's.

► The addition of catalysts to automobile fuel to break up the repeated photochemical cycle should be considered again.

► Both auto manufacturers and gasoline producers have made it clear that removal of lead from gasoline will begin to be done in a year or two.

► All the above efforts, even if they are successful, will probably not prevent a new rise in air pollution by the early or mid-1980's, due to the increasing numbers of automobiles.

Perhaps the most important conclusion of the Caltech study group, said Brown, is that there are factors that are as important or more important than the technological ones. "If the Los Angeles Basin environment is improved, as the APCD and other studies show that it can be, demographic forces will come into play. . . . The population is likely to increase in this Basin more rapidly." So economic, political, and social factors enter into the problem. Furthermore, it will take regulatory agencies to produce improvements, and the regulation itself can create problems.

Environmental Laboratory

Brown said the Caltech study group felt that the technique of gathering together an interested group of which not all members are expert on the specific problem can well be applied to other environmental problems. A university group can offer critical and expert appraisal of complex problems in a way that perhaps no other organization can. Such a study must include expert social scientists as well as scientists, technologists, and production people.

What does all this mean to Caltech's plans with respect to activities connected with the protection of the total environment? A group of Caltech and JPL people have recommended the establishment of an Environmental Laboratory with a staff of 25 to 30 professionals, plus part-time activity by faculty and students. Its staff would need to include economists, systems analysts, social psychologists, and other social scientists. To these would be added the expertise of those already at Caltech and JPL in photochemistry, combustion and chemical kinetics, instrumentation, atmospheric modelling and fluid mechanics, bioengineering, and systems development.

It is easy to find the problems that need solution, Brown concluded, but finding the appropriate organizational structure and the necessary funding is more difficult. For these reasons, Caltech has not made a decision on whether and how to proceed with such a laboratory. But organizations that can handle these disciplines and produce fresh answers to these changing problems will be needed if the human race and its environment are to remain compatible.

Alumni Seminar Day

Lectures scheduled for May 16:

ENZYMES: MACHINERY WITH A HISTORY, by Richard E. Dickerson, professor of physical chemistry

TWO PLANETS FOR THE PRICE OF ONE, by Walker E. Giberson, manager of JPL's Mariner Venus-Mercury 73 project

FUSION REACTORS — ENERGY SOURCE OF THE FUTURE? by Roy W. Gould, professor of electrical engineering and physics

RUSTY LIVERS AND TIRED BLOOD, by Harry B. Gray, professor of chemistry

AN INSIDE VIEW OF GLACIERS, by W. Barclay Kamb, professor of geology and geophysics

THE MYTH OF UNCLE TOM: BLACK ACTIVISM IN THE AMERICAN PAST, by J. Morgan Kousser, instructor in history

FARMING UNDER THE SEA, by Wheeler J. North, professor of environmental health engineering

SECRETS FROM THE MOON, by Leon T. Silver, professor of geology

BIOLOGY AND THE FUTURE OF MEDICINE, by Robert L. Sinsheimer, professor of biophysics and chairman of the division of biology

POPULATION EXPLOSION IN THE U.S.: MYTH OR REALITY? by Alan R. Sweezy, professor of economics

THE SEVENTIES: A TIME FOR TESTING GENERAL RELATIVITY, by Kip S. Thorne, associate professor of theoretical physics

SOLAR FLARES, by Harold Zirin, professor of astrophysics, staff member of the Hale Observatories

RAY BRADBURY, author of science fiction novels, will give the general lecture.

Christy: Some Interesting Changes

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has been doing astrophysics, with the result that his calculations on variable stars won him the prestigious Eddington Medal of the Royal Society of London in 1967.

His research and teaching contributions are only part of his service to Caltech. He has been on the faculty board, the academic policies and the academic freedom and tenure committees; he was also a member of the presidential selection and the aims and goals committees. He became executive officer for physics in 1968, and in 1969 was elected chairman of the faculty. He says he spent a good deal of time in that newest job interacting with faculty members, discussing their problems, and trying to see sensible approaches to helping them. It was an interesting experience, and it led him to believe that what a provost would have to deal with would be both challenging and rewarding.

The time Christy has spent on the chairman's job in the last six months has interfered considerably with his research, so he is prepared for the fact that being provost will interfere even more. What makes it worthwhile, however, is the opportunity to oversee the activities he feels are the very heart of the Institute—its academic program. (He stresses that he means "oversee," not supervise or control.)

Because the provost is supposed to be aware of and sensitive to faculty views, reactions, and problems, and because the provost has over-all responsibility for academic matters, Christy believes that in the long run the actions of the provost will have a major cumulative effect on the Institute. However, Caltech's small size and the accessibility of its administrative officers to anyone who wants to speak to them make all activities and problems somewhat interrelated.

"At this juncture in the Institute's history," Christy comments, "there are some very interesting changes in the works. In an administration where many positions are filled by persons who have held them for a long time, a newcomer to a job is constrained by traditional habits and attitudes. We have a new president and many other new people in important positions or being sought for them. We are likely to be bound much less than normally by the past. This is a situation that invites expression of new ideas and gives freedom for new ways of doing things."

EVENING EXCHANGE

At the invitation of Mrs. Harold Brown (standing, right), more than 40 Caltech women faculty and graduate students gathered at the president's house on the evening of February 25 to get better acquainted and to exchange news on women in the academic world.

Placement Assistance To Caltech Alumni

The Caltech Placement Service may be of assistance to you in one of the following ways:
(1) Help you when you become unemployed or need to change employment.
(2) Inform you of possible opportunities from time to time.

This service is provided to alumni by the Institute. A fee or charge is not involved.

If you wish to avail yourself of this service, fill in and mail the following form:

To: Caltech Placement Service
California Institute of Technology
Pasadena, California 91109

Please send me: (Check one)

☐ An application for placement assistance

☐ A form indicating a desire to keep watch of opportunities although I am not contemplating a change.

Name .....

Degree(s) ..... Year(s) .....

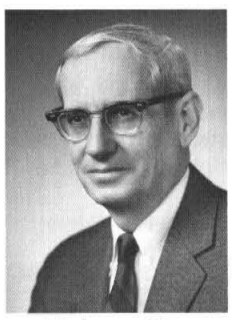
Address .....

.....

PERSONALS

1929
ALBERT M. GILMORE, president of the Data Retrieval System for I R Inc., announced that he will oppose California State Senator Alfred Song (D—Monterey Park) in San Gabriel Valley's 28th district elections this year. Gilmore, a Republican, says he will campaign for a state cloud-seeding program and for the construction of a seawater conversion plant near Long Beach.

1936
EUGENE BOLLAY, MS, a former Los Angeles television weather commentator (1949-1954) who is now the director of meteorology for EGG&G, Inc., and president of the E. Bollay Associates, Inc. (a subsidiary of EGG&G, Inc. since 1967), has been elected the American Meteorological Society's president for 1970.


Webster, '37


Martin, '51

1937
MARTIN H. WEBSTER, a director of the Alumni Association from 1967 to 1969, and a partner in the law firm of Webster & Creamer, is the new president of the Beverly Hills Bar Association, an organization of some 1,600 attorneys.

1938
STANLEY T. WOLFBERG, formerly with Cresap, McCormick and Paget, Inc., management consultants, has joined the nonprofit Commission for Administrative Services in Hospitals in Los Angeles to administer an industrial engineering project to help curb the rising costs of health care.

1940
PARK H. MILLER JR., PhD, is now teaching at the California Western Campus of the United States International University. Miller was formerly assistant director of research for Gulf Atomic, Inc. in San Diego.

1942
WOLFGANG K. H. PANOFSKY, PhD, director of the Stanford Linear Accelerator Center, and a consultant to the Office of Science and Technology of the Executive Office of the President since 1965, is one of six recipients of the National Medal of Science. The medal is the federal government's highest award for distinguished achievement in science, mathematics, and engineering.

1947
JACK D. VERSCHOOR, MS, a member of the Johns-Manville Corporation building products research team since 1967, has been made manager of the company's corporate planning operation in New York.

1948
C. GORDON MURPHY, corporate vice president of Litton Industries, Inc., and president of Litton International Development Corporation, will become the new president and chief executive officer of Cerro Corporation, effective in June of this year.

1951
HAROLD F. MARTIN, former manager of IBM's Mohansic Systems Laboratory in New York, has been promoted to general manager of the advanced systems development division.

1953
WILMER A. JENKINS, PhD, is the new director of the research and development division of du Pont's explosives department. Jenkins was manager of the technical section of the company's pigments department.

1956
HANS H. KUEHL, MS, PhD '59, associate professor of electrical engineering at the University of Southern California, received the 1970 Archimedes Circle Faculty Service Award for his "outstanding service to USC engineering students in summer counselling and in the coordination of graduate counselling programs off campus."

1964
RUSSELL D. HAGEMAN received his doctorate in physical chemistry from the University of Wisconsin in January and is now a research chemist at du Pont's Dacron Research Laboratory in Kinston, North Carolina.

1968
KERMIT R. KUBITZ, a sergeant with the First Infantry Division of the Army, received the Bronze Star for meritorious service in Vietnam. Kubitz was studying at the University of Wisconsin law school prior to his induction last February.

OBITUARY

1913
HERBERT S. WOOD, January 27, in Claremont, Calif. After retiring as the president of Los Angeles Trade Tech College in 1966, he worked for the federal government's aid-to-education program in the Dominican Republic and made a survey of vocational work in junior colleges for the State of California. He is survived by his wife, Esther.

Alumni Association Nominates New Directors and Officers

The Board of Directors of the Alumni Association met as a nominating committee on January 27, 1970, in accordance with Section 5.01 of the bylaws. Six vacancies on the board, in addition to the positions of president, vice president, secretary, and treasurer, are to be filled. The present members of the board, with the years in which their terms expire, are:

Fred C. Anson '54 1970
Horace W. Baker '35 1970
Clifford C. Burton '40 1972
William F. Chapin '41 1970
Donald D. Davidson '38 1970
Craig T. Elliot '58 1971
William A. Freed '50 1971
Earl C. Hefner '51 1972
Robert V. Meghreblian '50 1971
Reuben B. Moulton '57 1972
Robert C. Perpall '52 1970
Charles A. Ray '61 1971
Douglas C. Ritchie '57 1971
Warren G. Schlinger '44 1972
Harrison W. Sigworth '44 1970
Arthur O. Spaulding '49 1971

The following individuals have been nominated for the terms beginning at the close of the annual meeting in June 1970:

President—William A. Freed, BS50ME (1 year)
Vice President—Reuben B. Moulton Jr., BS57ME (1 year)
Secretary—Arthur O. Spaulding, BS49Ge, MS58Ge (1 year)
Treasurer—Robert V. Meghreblian, MS50Ae, PhD53Ae (1 year)
Director—Raymond L. Heacock, BS52EE, MS53EE (3 years)
Director—William C. House, BS40ME (3 years)
Director—Hubert M. O'Haver, BS29ME (3 years)
Director—Cornelius J. Pings, BS51ACh, MS52ChE, PhD55ChE (3 years)
Director—George E. Solomon, MS50Ae, PhD53Ae (3 years)
Director—David B. Wilford, BS48ACh, MS51ChE (1 year)

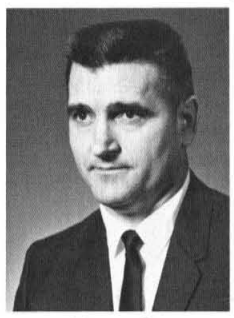
Section 5.01 of the bylaws provides that the membership may make additional nominations for directors or officers by petition signed by at least 50 regular members in good standing, provided that the petition is received by the secretary not later than April 15. In accordance with Section 5.02 of the bylaws, if further nominations are not received by April 15, the secretary casts the unanimous vote of all regular members of the Association for the election of the candidates nominated by the board. Otherwise, a letter ballot is required.

Statements about those nominated for directors are presented below.

—Robert V. Meghreblian, secretary

Board Nominees

RAYMOND L. HEACOCK received his BS in electrical engineering in 1952 and his MS in 1953. After his graduation he joined the Jet Propulsion Laboratory where he is now deputy manager of the new astrionics division. His early work included support of the Sergeant and Jupiter missile programs and the Pioneer 3 and 4 spaceprobes. In 1959 he was transferred into the newly formed space sciences division as a group supervisor and then as section manager. He participated in the Ranger lunar photographic missions as science project engineer and as one of the five NASA-selected experimenters. Prior to his current assignment he was assistant manager of the space sciences division and the space sciences division representative on the Mariner Mars 1969 project.


Heacock


House

WILLIAM C. HOUSE, vice president and general manager of the surface effect ships division of Aerojet-General Corporation, received his BS in aeronautical engineering in 1940. He then went to work for Northrop Aircraft Company in Inglewood, Calif., and in 1942 moved to Annapolis, Md., to work at the U.S. Naval Engineering Experimental Station. After four years there, he spent two years with Project SQUID at Princeton University and one year with the General Tire and Rubber Company of California. He joined Aerojet-General in 1949, and except for a year's leave in 1958 (spent at the Defense Department in Washington, D.C.) he has been with Aerojet since. He assumed his present position in January 1969.


O'Haver


Pings

HUBERT M. O'HAVER got his BS degree in mechanical engineering at Caltech in 1929. After working as a sales engineer for the American Blower Corporation, he joined the Southern California Gas Company in 1934 where he served for 35 years in various capacities of sales engineering in the Los Angeles area. The last seven years before his retirement in January 1968 he served as manager of the company's sales division for metropolitan Los Angeles. O'Haver is active with the American Red Cross, the Rio Hondo Boys Club, the Boy Scouts, and the Rotary Club. He is the Alumni Association's program chairman for the 1970 Alumni Seminar Day.

CORNELIUS J. PINGS is professor of chemical engineering and chemical physics and the executive officer for chemical engineering at Caltech, from which he received his BS degree in applied chemistry in 1951, and his PhD degree in chemical engineering in 1955. He served on the faculty at Stanford University from 1955 to 1959, during which time his summers were spent on glaciological expeditions to northern Greenland. On the Caltech faculty since 1959, his teaching and research activities are in applied chemical thermodynamics, statistical mechanics, and liquid state physics. A member of AIChE, ACS, and ASEE, Pings is also active in civic affairs and currently is a member of the Pasadena Community Redevelopment Agency. He recently served as chairman of the Institute Committee on Aims and Goals. In July 1969 he was awarded the Chemical Engineering Division Lectureship Award from ASEE, and in November he received the Professional Progress Award from the AIChE.

GEORGE E. SOLOMON received his MS in aeronautics in 1950 and his PhD in aeronautics and physics in 1953. After a year of postgraduate work, he joined the Ramo-Wooldridge Corporation in 1954 as a member of the technical staff of the guided missile research division. He has been involved in project management and research and development activities and is now the vice president of marketing and requirements analysis for the TRW Systems Group. He became a member of the National Academy of Engineering in 1967 and is a member of the Academy's aeronautics and space engineering board.


Solomon


Wilford

DAVID B. WILFORD received his BS degree in chemistry in 1948. Following a two-year assignment with Shell Oil Company as a chemist, he returned to the Institute in 1951 for his MS degree in chemical engineering. His career in the aerospace industry from 1952 to 1969 included development and data analysis positions at JPL, Rocketdyne, General Electric, and General Dynamics. He resigned as chief engineer of the data labs with General Dynamics-Electronics to enter the teaching and consulting professions. He is now teaching mathematics at Grossmont High School in La Mesa, Calif., and is associated with Comp-Time, a San Diego computer services firm. A life member of the Alumni Association and an active participant in the development program on both coasts, Wilford is the president of the San Diego chapter of the Alumni Association.