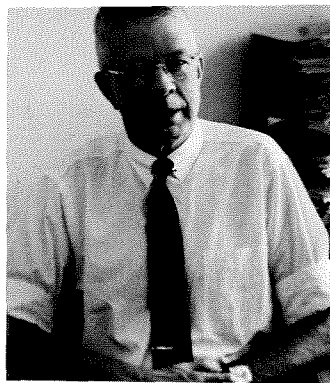


The Scientific Community—I

A gallery of some members

Henry A. Morss, Jr.

If he did nothing more, the chairman of an academic department at a major institution could work full time on planning departmental schedules, coordination of departmental business with that of other departments, supervision and approval of budgeting details on research grants, and payroll management. This administrative workload, when combined with the busy life of a working senior scientist, would over-tax any man's energies. In most instances the chairman, in self-defense, has a deputy who administers the department on a



day-to-day basis, freeing him for long-term scientific and policy determination.

Frank Press, Chairman of the Earth and Planetary Sciences Department at MIT, has a man particularly well suited to that job in Henry A. Morss, Jr. Morss, physicist by training and an industrial manager by experience, is able to see both sides of the picture with a facility not shared by many people lacking his background.

He received his Ph.D. in physics from MIT in 1937, and began work as an industrial research physicist shortly before World War II, where he rose rapidly to a senior management position. He left his company twelve years ago as vice president in charge of production, and spent more than a year "traveling a little and doing things there had never been time for before."

Langdon Crane

Interdisciplinary scientific research is not new; such fields as biochemistry, astrophysics, and biophysics are testimony to longstanding collaborations among scientists. But research spanning a broad array of disciplines and dedicated to understanding the complicated mix of components in some of society's untidy problems is relatively new. The multitude of research groups currently forming in universities across the country reflects the growing desire of scientists to take part in solving such problems.

At the University of Maryland, the Institute for Fluid Dynamics and Applied Mathematics is broadening its role on the campus to assume leadership in promoting this kind of multidisciplinary study. Heavy responsibility for the new program falls on the new Institute Director, Langdon Crane, who assumed his position last year after six years at NSF where he was Program Director for Atomic, Molecular, and Other Physics. Although a physicist, Crane has set aside research to assume the role of administrator. "I love doing research," he says, "but I felt very strongly that the future needs people who love science enough that they can make science more effective by being imaginative ad-

ministrators. My responsibility here is that of a catalyst to help the university and the faculty make more versatile use of their talents and facilities."

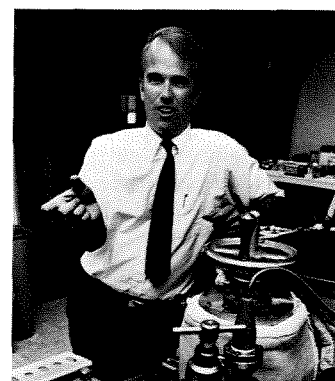
Crane received his Ph.D. from the University of Maryland in 1960 and spent the next four years doing research in low-temperature physics at the Ford Motor Company's Scientific Laboratories. When he returned to the University of Maryland in 1969 to head the 20-year-old Institute, he brought with him the conviction that any university organization that is permanently remote from vital involvement on its campus tends to slow down and lose sight of its goals. He doesn't want to see this happen to the Institute, which he expects "to evolve, recognizing in a very down-to-earth way what its responsibilities are to today's world and, more so, to tomorrow's." Among the programs that the Institute is currently planning or involved in are a new academic program to link mathematics to applications in the physical, life, engineering, and social sciences; a program in meteorology that has grown from interest in atmospheric and oceanographic fluid dynamics; and a study of air pollution in the Washington-Baltimore area that spans 10 different academic departments at the University.

Morss has had a life-long interest in sailing and the sea. Much of his spare time is devoted to sailing and experimenting with his day-sailing trimaran, which he has instrumented to show performance characteristics as a basis for hull and sail modifications.

The physical processes of the sea and, in turn, oceanography were further extensions of these interests. It was only natural, then, that the activities of the Earth and Planetary Sciences Department at MIT, which include oceanography, would attract him.

Morss' duties as administrative assistant to the department chairman encompass "doing everything for the department chairman that someone else can handle." These activities range from contract administration and negotiation to assuring that busloads of MIT students traveling to Woods Hole for classes depart and arrive on time. Morss notes wryly that his schedule activities do not permit many personal visits at Woods Hole, and his own maritime interests must remain confined to weekend activities at Marblehead with his own boat.

Although the Institute is organized for research, with no teaching requirements on its faculty, three-quarters of its staff of 33 attempt to maintain a full teaching load. Crane is among them, but in the true multidisciplinary spirit, he doesn't teach physics. "It's a natural thing for an ex-government person—I'm teaching an undergraduate honors course about how one makes assessments of the impact of technology on society and recommendations about what we ought to do about it. Each student takes a problem area, like pollution or power supply, and studies its history and the current technological, legal, and economic situation. Then the student must draft proposals for a solution of this chosen problem. And that, of course, is not so different from what we're doing at the Institute."





William Orris

An oceanographic ship's doctor is essentially a man alone, a member of neither the crew nor the research party. Like a fire extinguisher, he is little more than excess baggage until an emergency arises. And then, no matter how well equipped his sick bay may be, he must work without support staff, laboratories, special equipment, blood banks, or the possibility of medical consultation. During major cruises the ship may be out of home port for six months up to a year and a half.

What then induces a physician to leave home and practice—at personal and financial sacrifice—to do very little medicine under trying circumstances?

William Orris, Marine Physician for the Scripps Institution of Oceanography, discounts the lure of exotic places (“insufficient compensation for the monotony of months at sea,” he says), but suggests that such an adventure can provide useful perspective for the physician who finds himself getting bogged down in the medical and business details of a modern, increasingly specialized medical practice.

Orris, now 54, entered medicine late in life. After 15 years active duty as an Air Force officer with 4,500 hours of flying time, he retired with the rank of colonel and entered Tulane Medical School from which he received his M.D. in 1961 at the age of 45. A general practitioner, Orris ran a one-man practice and hospital in Park City, Utah, for four years prior to joining Scripps in 1967. As Scripps' chief medical officer—and the only permanent physician on the staff—Orris has sailed aboard most of Scripps' vessels. The philosophy of preventive medicine, with rigorous pre-cruise physicals to identify and forestall

later medical problems, is practiced assiduously by Scripps under Orris' medical leadership, so the usual ship-board medical practice is limited to treating bruises, back aches, and splinters. But he has had his dramatic moments. Two years ago aboard the 213-foot *Argo*, he fought for 72 hours for the life of a middle-aged seaman suffering from a ruptured varicose vein in his throat—a grave medical emergency even in a well equipped hospital. With a night-long, 3,000-mile mercy flight by a Coast Guard plane which dropped three units of whole blood, and through a risky, last-minute direct blood transfer from a shipmate, the patient's life was out of danger as the *Argo* steamed into a Mexican port.

Orris is fascinated by the kaleidoscopic activity and the continuing education afforded by an oceanographic expedition. He himself is using Scripps' personnel as a source for medical research on cardiac conditioning, which will provide him—and other physicians in similar situations—with objective criteria for determining whether an individual can tolerate the stresses of prolonged SCUBA diving and long-term oceanographic expeditions.

Anne H. Cahn

The politics of science and the science of politics are not interchangeable terms. However, they do have points in common, and it is on these points that Anne H. Cahn at the Massachusetts Institute of Technology is capitalizing for her doctoral thesis in political science with the aid of an NSF dissertation grant. Mrs. Cahn has chosen the controversial debate over the deployment of the anti-ballistic missile system as the departure point for determining the effect of scientists' advice on political decisions involving matters of technology and the degree to which partisan issues enter into a scientist's judgment of otherwise technical problems.

Mrs. Cahn is interviewing scientists both in and out of the defense community who participated actively in the ABM debate in order to determine how their participation in the ABM debate may have affected their political attitudes and their willingness to enter the political arena in the future. From this information she hopes to indicate how the effectiveness of the scientists' role in the policy process can be enhanced.

In her investigations Mrs. Cahn is dealing with both the scientists' technical judgments and their partisan activity in a politicized issue. As these two may be in conflict with each other, political science and the politics of science must then be approached from two nearly mutually exclusive viewpoints. She is unusually qualified to accomplish this feat in two respects: married to a scientist for 20 years and living within the scientific community, she has a unique understanding of scientists and science not shared by many members of the political science community; as the daughter of refugees from pre-war Germany she has a unique feeling for American political processes not shared

by many scientists or indeed by many Americans.

Mrs. Cahn, born in Munchen-Gladbach, in the Rhineland, was three years old when her parents emigrated to the United States in the mid-thirties. She attributes her life-long interest in the American political process and in political science to her parents' acute appreciation of the privileges of citizenship and of the American democratic process. She obtained her B.S. in political science in 1951 from Berkeley where she also met her husband, now a professor of metallurgy at MIT.

With her husband's appointment to the MIT faculty in 1964, Mrs. Cahn, whose oldest son is now an MIT freshman, joined the faculty herself as an instructor in German. She had in previous years taught German at the junior high school level, but rediscovered the significant difference that self-motivated students make to a teacher. Her desire to continue teaching at the college level led her to return to school to obtain her doctorate in political science. She hopes to finish her thesis requirements by June 1971, in time to teach at the Hebrew University at Haifa in 1971-1972 during her husband's sabbatical leave. ■

