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18 July 1975

Volume 189, No. 4198

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18 July 1975

Volume 189, No. 4198

SCIENCE

SCIENCE is published weekly, except the last week in December, but with an extra issue on the fourth Tuesday in November, by the American Association for the Advancement of Science, 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Now combined with The Scientific Monthly. Second-class postage paid at Washington, D.C. and additional entry. Member rates on request. Annual subscription $50; foreign postage: Americas $7, overseas $8, air lift to Europe $30. Single copies $2 (back issues $3) except Food Issue (9 May 1975), is $3 and **Guide to Scientific Instruments** is $6. School year subscription: 9 months $37.50; 10 months $41.75. Provide 6 weeks notice for change of address, giving new and old address and zip codes. Send a recent address label. **Science is indexed in the Reader's Guide to Periodical Literature.**

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COVER

A new coccidian (*Hammondia hammondi*) of cats produces cysts in muscle of other mammals. See page 222. ["Sunday" Finger by Gary Laurish Photography, Washington, D.C.]

18 July 1975, Volume 189, Number 4198

SCIENCE

New Arrangements for Science in the Universities

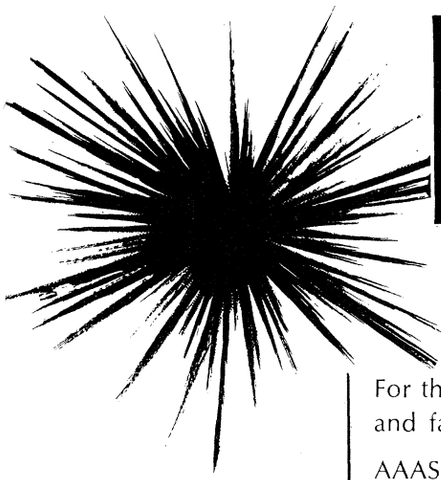
The structure of basic scientific research in the United States differs from that in other countries in that the universities have traditionally played the major role. The strength of science in the country is therefore directly related to the health of the universities. Currently both public and private universities are in difficult positions because of demographic changes affecting enrollment and increasing costs not matched by income. Seven out of ten science and engineering faculty members now hold tenure, and the proportion of young faculty members dropped from 39 percent in 1968 to 28 percent in 1974. The rigidity imposed by the tenure system and the inability to bring in young people because of the reduced number of faculty openings may degrade the research performance of some of the most famous and productive departments in the country. Although a tie between research and education was justifiable in an earlier era, university research may require a new format, independent of the teaching function, in the coming years of declining student population. I believe that new institutional arrangements will be necessary if the universities are to maintain their scientific strength, and the following are some suggestions which might be considered.

A number of university science departments would be designated by government science support agencies as National Research Centers. They would be selected on the basis of past and current research performance, the commitment of the university to the field, and in some cases geographic distribution. Each research center might receive start-up funds, coherent area grants, with funding for 3- to 5-year periods from government agencies. Designation as a National Research Center would not imply continued, automatic funding, but the many projects in a center would be judged individually and competitively. The centers would be staffed primarily by recent Ph.D.'s, who would be supported full-time by government grants. The universities would undertake to grant rolling 3-year periods of tenure and offer space and other amenities to make the positions attractive. Faculty members in departments might become researchers at the centers for periods of 1 to 3 years, and vice versa. These centers would enable universities to bring young scientists into the university community, in close connection with established departments, and in this way insure the flow of the best young minds into the basic research structure of the universities.

There are many university scientists in the age range 55 to 65 who believe that their contributions to science are behind them and who would like to seek alternate ways to contribute during the last decade of their career. Government agencies should study the feasibility of undertaking to aid universities in finding alternate careers for these individuals. The university commitment might be something along the lines of purchasing annuities to cover the individuals for ages 55 through 65, at which time retirement would begin. The government contribution might be senior fellowships covering the remainder of the salary, which would enable the individuals to work in local government or foreign technical assistance programs, teach at small colleges that cannot afford science staffs, write textbooks, or staff professional or educational organizations. New faculty positions might be opened for young people in this manner.

Several hundred young scientists would be selected on a competitive basis and be given salary support for several years. These positions would be used primarily to bring young scientists into a university department several years in advance of a retirement. Although grants would be made to individuals, only university departments that make the case that they will add an individual to the department in the next several years would be eligible to receive these "national scientists."

I am not oblivious to the fact that these proposals will cost money and this may not be the time to make such requests. However there is a growing national concern about the health of science. Perhaps the time has arrived for science support agencies and universities to initiate discussions with Congress and the Executive Branch about possible new institutional arrangements for research in the universities.—FRANK PRESS, *Department of Earth and Planetary Sciences, Massachusetts Institute of Technology, Cambridge 02139*



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