## *Study Shows More Physicists Will Lose Federal Support*

The impact of the sharp cutback in federal support in recent years has been a heavy one for the physics community according to a survey completed this spring for COMPAS, the Committee on Physics and Society of the American Institute of Physics. And the worst is yet to come, the survey indicates.

More than one fifth of the staff members of the departments responding to the special two-part questionnaire will lose all financial support for their research projects in the 1968–69 academic year. The estimate is 21% and is an acceleration of the trend that in 1965–66 saw 10% of the department members lose all such support. The figures rose to 12% in 1966–67 and 16% this year.

The survey found that the research projects of 537 staff members at 94 departments have been affected in this academic year. These findings indicate that nearly 1100 staff members at the 187 departments polled were affected this year.

Lewis Slack, AIP associate director and secretary of the committee, said, "It is clear now that some physics departments are beginning to hurt badly. The real pinch is in first application funds. This is even hitting established people who have moved and are applying for first-time support at new institutions. Even some established people have been cut off. There has been an increasing amount of concern. We decided we wanted to document this."

Questionnaires were sent to a total of 187 physics and astronomy departments that give doctoral degrees. More than 80% of these departments sent back completed forms, a return one federal official called an "unusual volunteer response." The questionnaire was in two parts. The first part dealt with qualitative information. It asked for statements concerning the limitation or abandonment of projects, deferment of expansion plans and the search for alternate financial support.

The second part of the questionnaire asked more detailed questions about actual numbers of people affected in each department. Department heads were asked to give figures for the past three academic years and an estimate for the coming year. The two questionnaire forms were printed on separate sheets so that one could be returned immediately in case there was a delay in obtaining the actual figures involved.

The survey also disclosed that the growth rate in faculty, which was 9.1% between 1965–66 and 1966–67, has fallen to an estimated 4.3% between this year and 1968–69. During the years covered by the survey, the mean number of faculty members increased from 19.8 to 24.1 while the actual yearly gain in faculty slid from 1.8 to 1.0.

The number of full-time graduate students fell from a mean of 18 in 1965–66 to an estimated 16.9 for next year. Part-time graduate students are expected to make up a larger share of the total next year, an apparent result of the falling off of available financial assistance. The ratio of faculty to graduate students dropped steadily. It was 1 to 3.7 in 1965–66 and is estimated at 1 to 3.2 next year.

The appointment of postdoctorates is also due to feel the pinch from the federal support squeeze. The ratio of postdoctoral appointees to total faculty has been on a plateau of 34% for the past three years, but the department-head estimates indicate this will fall to 29%, meaning that the new post doctorate will be the first to go.

The second pressing problem facing the graduate school heads this fall, the possible depopulation of the graduate classrooms because of draft calls, was not covered in the study. However,

**FACED WITH A CUT IN GOVERNMENT FUNDS, PHYSICS DEPARTMENT HEADS SAY:**

"Hardest hit is the *new* project or the *new* investigator. There is nothing available for either. Ongoing projects using existing equipment stand the best chance for survival. The loss in new work not undertaken is disastrous for basic research."

"We have considered ourselves as an 'emerging' institution in physics, but it is clear that our emergence will be hindered or postponed indefinitely if new and active staff members cannot get research support."

"Our major trouble now is that we cannot get information as to whether several of our expected sources of support can help us or not."

". . . It is now practically impossible for a young staff member, coming . . . fresh from his PhD, to obtain grant support. This comes at exactly the time when he should be encouraged in every way possible to continue his research so as to be a productive member of the graduate staff."

"Without federal funds for research, staff and graduate students, this physics department cannot survive . . . We are unable to fit out even the first floor of our new three-story physical science building without federal funds. We are operating in temporary space 10 miles from campus . . ."

"We have curtailed experimental work in molecular spectroscopy . . . and in experimental solid state physics . . . and have abandoned a program in experimental nuclear structure."

"Our overall departmental budget, which includes both university and federal funds, decreased approximately $100 000 from '66–67 to '67–68."

"In general the biggest effect at this point is in changing the atmosphere from an ambitious adventurous one to a very much more cautious and self-protective one. This does threaten somewhat the spirit for significant achievements in research and teaching."

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COMPAS hopes to extend the study with a followup questionnaire, perhaps in June, and would include specific questions about the influence of draft regulations at that time.

Because the survey was limited to PhD-conferring departments, a large area of opinion and probable impact was not covered, said Slack. "We have not surveyed the non-PhD schools. We plan to do so because although they receive a smaller fraction of federal money, they do turn out a sizeable percentage of the physics majors."

Slack said copies of the completed survey would be sent to all physics department heads, to society officials and to some government agencies. He noted that the financial support survey was the first of its kind to be undertaken by the AIP. It was conducted by the Education and Manpower Division.

### *New Draft Rules May Take Half of Graduate Students*

While the uncertainties facing graduate students and departments about the draft have ended with the National Security Council's new no-deferment regulations, the certainties are no less worrisome.

Instead of being up in the air about what the new rules might be and so putting off hard decisions about the fall, both students and administrators can now face the coming year with the expectation that 50% to 70% fewer first-year graduate places will be filled in September than were occupied in June.

The new regulations started a wave of protests on campuses across the country and even in Washington, but the chances of any immediate changes are not bright. Just last year Congress passed legislation ending deferments for beginning graduate students, but left it up to the National Security Council to determine whether some deferments should be granted in disciplines essential to the national welfare. Now the council has decided that no graduate field, except medicine and its related specialties, is to be considered that essential.

Basically the National Security Council decided that:

1. Graduate deferments would end. Exceptions are medical, dental and related studies as well as graduate students completing at least their second year of studies this year.

2. Callup on the basis of the oldest first would continue. This means that the newly vulnerable graduate student being older than the fresh crop of high school or college graduates would be drafted first.

3. Lists of essential activities and critical occupations would be abandoned. This leaves it up to local boards to base occupational deferments, such as those for teachers, entirely on local conditions.

The council based its decision on a number of considerations including "the unfairness that would result from exempting men in some fields of graduate study and not in others, as well as the accompanying distortions that would result from the tendency to select draft-deferred fields of study." It also reasoned that graduate-student deferments were "unfair—particularly in time of armed conflict—to all young men who do not have the opportunity or the finances to attend graduate school."

**Reaction.** Educators and university administrators have attacked the new rules. Logan Wilson, president of the American Council on Education, summing up the majority opinion, said, "This is a short-sighted decision. If it remains unchanged it inevitably will cause serious shortages in the trained manpower on which the future of the United States vitally depends."

Among the most outspoken critics of the new regulations was Betty Vetter, executive director of the Scientific Manpower Commission, who said the decision gives the United States "the best educated army in history." She noted that the shift in deferments results in "a policy that will draft nobody except college graduates."

The Scientific Manpower Commission estimates that 433 000 students will be added to the draft pool. Of these 187 000 are now seniors, 144 000 are first-year graduate students, 74 000 have not yet begun their second year of study and 28 000 are graduate students due to receive their master's this spring and summer. The draft call for the next fiscal year, for comparison, is currently estimated at about 240 000.

The dropping of occupational deferment lists may hit some physicists in industry, especially in the aerospace field. However, the shifting of the burden of deferment justification from the nationally distributed Selective Service lists to the local boards is not expected to make a great deal of

## RESONANCES

**Secrecy and classified research** will be the topics for discussion at a special evening session added to the program of the American Physical Society meeting in Washington this month. The title of the session scheduled for Monday, 22 April, is "University Research and the National Defense." John Wheeler of Princeton University and John Rasmussen of the University of California will speak about whether a university should engage in classified research. Richard Garwin of Columbia University and IBM and William Davidon of Haverford College will put the case for and against Department of Defense support of research. The chairman for the meeting will be Dale Corson, provost of Cornell University.

**The Society of Physics Students** has been born with the completion of the merger of Sigma Pi Sigma and the Student Sections of the American Institute of Physics, the two undergraduate physics organizations. Mail ballots returned by Sigma Pi Sigma chapters early in March approved some last-minute changes in the articles of agreement. The AIP governing board added its final approval at the end of March. The new society will begin its activities by the start of the new academic year in September. Sigma Pi Sigma, with its 50th anniversary not many years off, continues as an honor component within the framework of the Society of Physics Students.