

Stever told Congress that NSF still feels its mission in graduate education is important. "We have shifted our philosophy so that we will now support more graduate students through research-project funding." NSF supported 14 300 students in FY 1972 through fellowships and traineeships and through assistantships financed by research grants, and it expects to raise the number to 14 600 in FY 1973.

"There are always problems when you change the form of support, as we are trying to do. If you give out traineeships or graduate fellowships, it's a clear case. You give one, and you know that the fellow is going to be supported. In the research assistantship, it's a much looser system. We can urge that a university support more research assistants, but in our complex system of approving grants there's a lot of flexibility as to who is supported. If it really turns out that the way the Foundation will support graduate education in the future is through research assistantships, then we're going to have to look very carefully at the system to see that we really are doing it." Another problem is that research assistants are not appointed in their first year of graduate work; so there is a dearth of support in the first year.

The NSF fellowships, NSF discovered, go to a very small number of schools. "We are supporting quality. Fellowships are continuing, and for fiscal year 1973 NSF is planning 500 new starts with about 1000 ongoing fellowships."

The traineeships, on the other hand, were spread more widely, broadening the base of graduate-student support, Stever went on. "Removing the traineeships will result probably in going back to the original concentration. I'm quite sure that we will note some day that support of graduate students through the research grant is also focused on quality—the schools that are good enough to get the grants will also get the graduate students. So frankly I suspect that in a few years we will be looking at this problem to see if we aren't concentrating too much again."

**Advisory apparatus.** We asked Stever if he thought the NSF advisory apparatus is working satisfactorily. "I have noted the unhappiness of not just the Physics Advisory Panel, but others as well." He feels that the advisory panels and committees, which NSF has for the various fields of science, are very important. But if a committee "tells us that we need to spend more money in a particular field of science, it must recognize that we're getting exactly the same recommendation from every other advisory committee. So we're right back where we started. On the other hand, it is of tremendous value if a committee tells us that within their science we're leaning in a di-

# NSF Funding for Physics, Astronomy and Materials Research (in Thousands of Dollars)

	Research Project Support	National Centers	Science Information Services	RANN	Institutional Improvement for Science	Total
<b>Physics</b>						
FY 1971	26 456		1000	900	2674	31 030
FY 1972 (est)	32 900		400	2200	3813	39 313
FY 1973 (est)	36 000		40	3000	588	39 628
<b>Astronomy</b>						
FY 1971	6672	21 317			223	28 212
FY 1972 (est)	8000	20 440	400		131	28 971
FY 1973 (est)	8800	23 740			59	32 599
<b>Materials Research</b>						
<b>Solid State and Low Temp.</b>						
FY 1971	5720					5720
FY 1972 (est)	9150					9150
FY 1973 (est)	9800					9800
<b>All Other*</b>						
FY 1971	5341			2300		7641
FY 1972 (est)	24 150			2000		26 150
FY 1973 (est)	27 600			2800		30 400
<b>Subtotal</b>						
FY 1971	11 061			2300		13 361
FY 1972 (est)	33 300			2000		35 300
FY 1973 (est)	37 400			2800		40 200
<b>Total</b>						
FY 1971	44 189	21 317	1000	3200	2897	72 603
FY 1972 (est)	74 200	20 440	800	4200	3944	103 584
FY 1973 (est)	82 200	23 740	40	5800	647	112 427

\* Includes physics research done in Materials Research Laboratories and at National Magnet Lab.

rection which is fine, but we're so enthusiastic about it we're neglecting something else."

When the new Division of Materials Research was established, members of the Physics Advisory Panel were very upset because they were not consulted on this organizational change, Stever said. "There also was no formal discussion with panels from chemistry or engineering. Because of the interdisciplinary nature of the laboratories, a special group was set up by the Foundation including physicists, chemists and engineers, and with NSF staff members this group made site visits to all of the ARPA IDL's. It appeared to the Foundation to be a unique opportunity to strengthen materials work in the nation by giving special attention

through a new division, the largest operating unit within the Research Directorate. In general, the special panel assembled for the discussions was in favor of this plan, although there were members of the panel who thought the materials-research labs should be organized under physics and others who thought they should be organized under engineering."

"However, I don't think any field should object when there begins a spin-off under a new title or a new field. Physics, being a basic science, has always had this problem. A lot of what was once physics has become part of electrical engineering and chemistry, amongst others, and I think the science community is richer as a result."

—GBL

## in brief

For information about teaching positions for natural and physical scientists and engineers in Latin American universities contact Latin American Teaching Fellowships, Fletcher School of Law and Diplomacy, Tufts University, Medford, Mass. 02155. Officers of the recently recognized "Florida group" of the Optical Society of

America are Joseph G. Hirschberg, chairman of the University of Miami physics department, as president; John Ross, of Rollins College, as vice-president; Howard R. Gordon, of the University of Miami, as secretary-treasurer, and Harry Bates, of Rollins College, as program chairman. The film "The World of Enrico Fermi,"



produced by Gerald Holton in connection with the Harvard Project Physics course, has won the Golden Rocket award of the Rome Twelfth International Award of the Technical Cinema.

Abstracts of technical reports produced from Government-funded research and development projects released since 1964 can be obtained from a new

computer information-retrieval service, NTISearch, operated by the Department of Commerce's National Technical Information Service. To request an NTISearch, telephone 703-321-8523 or write, US Department of Commerce, NTISearch, Springfield, Va. 22151.

A report on the survey of 1971-72 enrollments and degrees in physics at uni-

versities and colleges throughout the US is available from the Manpower Statistics Section of the Division of Manpower, American Institute of Physics, 335 East 45th St, New York, N. Y. 10017.

The 31-inch Cassegrainian reflecting telescope at the Battelle Observatory on Rattlesnake Mountain in Washington was recently dedicated.

## the physics community

### AIP affirms support for history studies

Noting the current relevance of studies in the history of physics, the AIP governing board recently affirmed its support of the program of the AIP Center for History of Physics. The board on 25 March established a Council of Friends of the Center for History of Physics, under the chairmanship of Elmer Hutchisson, which will seek needed financial support to help the Center develop its archival, research and publication programs.

The Center keeps letters, notebooks, recorded recollections and other source materials that help to reveal the processes of scientific change and the human aspects of the life and work of physicists. According to Charles Weiner, director of the Center, "Analysis of these materials can help increase the self-understanding of physicists and enable them better to explain physics research and its relation to society."

Among current programs of the Center are:

The Niels Bohr Library, which contains resources and facilities for historical research and is an international information center for the field.

An ongoing series of programs to encourage preservation, location and use of historical source materials in appropriate repositories throughout the US.

Studies and publications examining the development of contemporary physics and its relation to society.

Dissemination of historical information to the public in order to promote greater understanding of the role of physics in contemporary life.

The Council of Friends will seek to supplement AIP support to the Center through direct appeals to individual physicists and public-spirited citizens.

Interest in physics history is high among physicists, Weiner noted, as evidenced by the good attendance at the history of physics session at the April APS meeting in Washington. During the meeting an initial appeal was made.

The Council is still in the process of formation. Present members, in addi-

tion to Hutchisson, include Luis Alvarez, Arnold Arons, Hans Bethe, Allan Bromley, Richard Crane, William Fowler, James Heineman, Roger Hildebrand, Gerald Holton, Robert Leighton, Frederick Seitz, Emilio Segrè, Keith Symon, Victor Weisskopf and John Wheeler.

The AIP history program goes back to 1962, when the Niels Bohr Library was established. It has since grown into a center for the documentation and study of the history of 20th-century physics and its social implications. The results of its efforts have been reported in the Center's newsletter and other AIP publications and in an increasing number of articles and books. These activities have been guided by a committee of physicists and historians chaired by Gerald Holton of Harvard.

### Efforts to improve job prospects in astronomy

The American Astronomical Society is taking steps toward expanding public understanding of astronomy and improving job opportunities for astronomers. In the light of a growing underutilization of talent, the society has established a committee on manpower and employment chaired by Bart Bok, AAS president-elect. Acting on the recommendation of the committee, the society has asked astronomy departments to hold the line on enrollment in degree-granting programs and has encouraged the employment of astronomers as teachers at a large number of schools in an effort to enhance the appreciation of astronomy in general education and the study of science.

Early in January, Martin Schwartzschild, AAS president, wrote to the heads of all graduate departments that grant PhD's in astronomy and astrophysics noting that this year there will probably be only half as many research-oriented openings in astronomy as there will be graduates. Schwartzschild urged the department heads to suspend plans for any additional programs and to take steps to avoid the acceptance in graduate schools of candidates with un-

certain qualifications for research. Instead, he recommended that such students, whose "greatest strength does not lie in pure scientific research" be redirected to the equally important task of teaching astronomy to keep up with the growing interest in the field.

At the same time, H. M. Gurin, the executive officer of AAS, wrote to about 2400 deans of study and chairmen of science departments of four-year colleges and junior colleges and non-science-oriented schools and 500 directors of planetariums and science museums with astronomy programs to bring to their attention the availability of young astronomers as teachers. Gurin asked that the deans notify AAS of any openings so that the positions could be listed in the society's opportunities registers. This placement service, which has recently been strengthened, acts as a clearinghouse for academic, governmental and industrial job opportunities for AAS members. Further information can be obtained from H. M. Gurin, Executive Officer, American Astronomical Society, 211 FitzRandolph Rd, Princeton, N. J.

### OSA forms a group for Raman workers

A new Raman Technical Group of the Optical Society of America has been formed. It was formerly an *ad hoc* committee of OSA.

*Raman Newsletter* is the monthly newsletter of the technical group and is the only one published by any of the 11 OSA technical groups. The newsletter costs \$5.00 a year to OSA members and \$10.00 a year to nonmembers. Subscribers are also required to send a scientific contribution to the newsletter once a year.

Ellis R. Lippincott of the University of Maryland will act as chairman of the group for a two-year term, and the vice-chairman will be J. E. Griffiths of Bell Telephone Laboratories.

As an OSA affiliate, the group will now have a working mechanism for holding regular meetings as well as topical and specialized meetings. □