

tions. For the 1970 PhD recipients who had not received a job offer by last summer, 60% of the 210 had accepted temporary positions.

The tight job market is also forcing the BS recipient to compete with PhD's for employment, resulting in the highest unemployment rate for the BS group as compared to the MS and PhD groups. In July 1970, 170 BS recipients did not have a job offer; by November, 23% of that group were still not em-

Table 1. Graduate Enrollments

	Total	First Year
1963-64	13 046	4061
1964-65	13 629	4167
1965-66	14 876	4358
1966-67	15 504	4162
1967-68	15 305	4010
1968-69	15 475	3669
1969-70	14 372	3918
1970-71	14 300	3494

Table 2. First-year Graduate Students

	1964-65	1966-67	1968-69	1969-70	1970-71
PhD-granting institutions (175)	3354	3409	2998	3202	2658
MS-granting institutions (130)	813	753	671	716	836

ployed. Of the 65% who are working, some listed their occupation as bartender, television repairman, construction worker and postal employee.

As a new part of the employment survey, AIP received questionnaires from 800 placement service registrants. Of the 202 PhD's who earned their degree before 1967, 167 were employed. Of those persons 32% used only a small fraction of their physics training and 29 of the 72 persons employed by a university were holding temporary positions. —TJ

Seven nations out of 12 now support CERN 300 GeV

A decision on whether or not to construct a 300-GeV accelerator at CERN was expected to occur at a CERN Council meeting on 19 February. After the UK decision to participate after all in the project, many had thought that the plan would receive a clear go-ahead at the Council meeting in December.

Seven nations (Austria, Belgium, France, Federal Republic of Germany, Italy, Switzerland and UK), representing 87% of CERN's financial support, have now announced their decision to participate. Of the remaining five countries (Denmark, Greece, Netherlands, Norway and Sweden), none had said "No" at this writing.

The total cost of the eight-year program for the 300-GeV synchrotron is set at 1150 million Swiss francs. The leading contributors would be Germany (268 million), UK (248 million), France (229 million) and Italy (148 million).

The plan is to use the existing 25-GeV synchrotron as injector. It would divide its time among feeding the big synchrotron, filling the Intersecting

Storage Rings and providing 25-GeV beams for experiments. In the "missing-magnet" design, a 2.2-km-diameter ring would be filled initially with only half the iron-core magnets; this arrangement would yield 200 GeV in the sixth year of the program. Within the budget further magnets could be added to raise the energy to 300 GeV. The tunnel diameter limits the ultimate energy with conventional magnets to 400 GeV.

Meanwhile if superconducting magnets continue to appear promising, they could be installed in the gaps to boost energy to 700 GeV and even eventually to 1000 GeV.

NSF astronomy reorganized into five separate programs

The NSF Astronomy Section has recently been reorganized, abolishing the optical and radio-astronomy programs, and forming five separate programs, which include both theoretical and laboratory studies, as well as observations in all spectral regions. Robert Fleischer continues as head of the section.

The solar-system astronomy program covers objects within the solar system, including work on the sun itself, planets, comets, asteroids, celestial mechanics and the interplanetary medium. Its program director is Harold H. Lane.

The stars and stellar-evolution program covers basic stellar astronomy, including pulsating stars, variable stars, stars of various spectral classes, and so on, insofar as they can be studied to reach conclusions about a particular star or type of star. Investigations of stellar modeling of both interiors and atmospheres also fall in the program, whose acting director is Fleischer.

The stellar-systems and motions program covers interactions of stars and of their characteristics, as evidenced by either dynamic coupling or by their motions. It deals with all group characteristics of stars that are smaller than a galactic scale. Lane heads this program, too.

The galactic and extragalactic astronomy program is directed by James Wright. The galactic astronomy portion covers spiral structure and the interstellar medium of our own galaxy. In the extragalactic portion are investigations of objects outside our galaxy, such as other galaxies, quasistellar objects, remote radio sources and cosmology.

The astronomical instrumentation and development program considers proposals for developing new types of observational and data-recording instrumentation. The program is intended to coordinate, both within and outside NSF, all instrument development appropriate to astronomy. Basic operation of some observatories covering several of the subject-matter programs also falls into this program, whose acting director is Fleischer.

The section will also continue to be responsible for scientific coordination of the national astronomical observatories supported by NSF, with that responsibility falling to Gerald F. Anderson.

Plan for economical Venus exploration proposed

A comparatively low-cost approach to the unmanned exploration of Venus has been proposed by the Space Science Board of the National Academy of Sciences. This Venus study, which was based in part upon a 1968 report of the board, is entitled *Venus: Strategy for Exploration*, and is the work of a 21-man panel. Co-chairmen of the panel were Richard M. Goody of Harvard University and Donald M. Hunten of the Kitt Peak National Observatory.

The study proposes a series of Pioneer-IMP class probes weighing about 850 pounds. The basic "bus" of these "planetary explorers" could be modified to carry a variety of payloads, including orbiters, atmospheric probes and small landers.

Information about the atmospheric composition, cloud physics, radiative heat budget, surface composition, and seismology of the planet, as well as other parameters, could be gathered using a series of these probes. The cost of the Venus-probe program is estimated to be \$100 million for the first three probes and \$25 million for each succeeding mission. The first probe in the series could be launched in 1975.

Because of the low cost, reliability