

and State governments, the academic community, private and public standards making bodies and standards laboratories, professional societies, and industry.

GOVERNMENT AGENCIES

We do a considerable amount of work for other Federal agencies, ranging from fairly fundamental research to testing and calibration. A substantial part of the NBS annual budget—currently 40% of the total—is made up of funds transferred to us from other agencies for services rendered. This percentage has varied over the years, and even now differs among the various organizational units within the Bureau. For example, about 70% of the funds available to the Institute for Applied Technology is transferred from other agencies. While we wish to, and will continue to, provide services to other Federal agencies, we do have to be careful that the ratio of other agency funds to appropriated funds is such that the basic missions of the Bureau are not distorted by over-dependence on outside support.

NBS laboratories also serve State and local needs, primarily in the weights and measures field. Here, our specialized expertise is passed on to the States mainly through the mechanism of the NBS-sponsored National Conference on Weights and Measures, an annual meeting of State weights and measures officials, in which NBS scientists and engineers actively participate. We are also in constant contact with State officials on calibration problems, measurement techniques, training of local personnel, and other areas related to weights and measures used in commerce.

THE ACADEMIC COMMUNITY

NBS interactions with the academic community are varied and growing. They include use of our laboratory facilities in a number of ways.

NBS has an Associate Director for Academic Liaison, with the following objectives: (1) to improve and stimulate the intellectual quality of NBS programs and staff, (2) to make the fullest possible use of NBS special resources, both laboratory facilities and staff, (3) to strengthen national competence in those areas of science and engineering which are related to NBS missions, (4) to provide a means for NBS staff to further their education through collaborative research, (5) to train personnel in fields important to NBS but in which a shortage of competent people exists, (6) to serve as a resource to industry through educational training programs aimed at meeting national as well as regional industrial needs.

An outstanding example of Government-university cooperation is the Joint Institute for Laboratory Astrophysics (JILA), a cooperative effort of NBS and the University of Colorado. JILA itself is located at the University of Colorado in Boulder, Colorado. Its purpose is to further laboratory and theoretical research and graduate level training in astrophysics. The faculty comes from both the University and NBS. The laboratory facilities of both institutions are likewise shared. In addition, JILA's visiting fellowship program brings to Boulder about 10 distinguished scientists in the broad field of laboratory astrophysics. These scientists come from all over the world.

We maintain a graduate school at NBS. Courses may be given for credit at universities or strictly on an in-hours career development basis. Enrollment is not limited to NBS or other Federal employees.

The postdoctoral associate program is another important cooperative effort involving the academic community. A list of candidates is chosen and ranked by a National Academy of Sciences-National Research Council panel. An NBS Postdoctoral Committee meets at least annually and makes its selections from this list. The program was started at NBS in 1955. Since then, it has been successfully extended to many other laboratories in the Federal Government.

PRIVATE STANDARDS ORGANIZATIONS

NBS works very closely with private standards making bodies, of which there are some 500 in the United States. We participate in the work of many of the organizations, such as the United States of America Standards Institute, and of course help any of them with problems associated with measurement standards and techniques.

In 1961, NBS sponsored the establishment of the National Conference of Standards Laboratories, and has acted as its secretariat ever since. The NCSL is a continuing, non-profit, laboratory-oriented organization to promote coopera-