An invitation to industrial corporations, professional organizations and trade associations to join in research with the National Bureau of Standards and the U.S. Department of Commerce.

Research Associates and their sponsoring employers benefit by the extensive resources, instrumentation, techniques and the skills of the staff.
The NBS Research Associate Program had its origin in Federal legislation of 1892, making the scientific and technical facilities of the Government available for use by scientific investigators and students. In 1901, this legislation was extended to encompass specifically the newly established National Bureau of Standards. The extension was drafted by the Washington Academy of Sciences and was based on a resolution prepared by Dr. Alexander Graham Bell.

It is estimated that some 400 organizations and more than 1,000 individuals have participated in the Research Associate Program since its inception. Following World War I, it became a significant factor in NBS-industry relationships. Early programs stimulated the establishment of both independent industrial research facilities and technical associations. The collaboration made possible by the Research Associate Program has resulted in advances in fundamental knowledge and the development of measurement techniques now in widespread industrial use.

With the move of its Washington office activities to new and modern facilities in Gaithersburg, Maryland (20 miles northwest of the city on Interstate Route I-270), the Bureau recognized a need to increase the exchange of technology pertinent to notionally important industrial problems and make its expanded capabilities more accessible for solving these problems. With the Research Associate Program already well established as an effective vehicle for such purposes, additional emphasis was placed on the Program in 1965—and continues unabated today—to encourage participation in this unique plan for direct and mutually beneficial interaction between industry and NBS.

From a 1964 base of 10 Research Associate Programs and 32 Research Associates, all supported by trade and professional organizations, the Program has grown to encompass approximately 30 different programs and 100 Research Associates annually. This increase has been accomplished by diversity in both sponsoring organizations and the nature of the projects. Individual industrial companies now comprise approximately one-third of the sponsors. The list of current and recent programs furnished with this leaflet is indicative of the range of subjects covered by the programs.

In addition to the Bureau's continuing responsibilities for advancement of the basic measurement sciences, NBS is becoming increasingly involved in development of the measurement technology and Standard Reference Materials needed to assure regulatory reasonableness, enhance industrial productivity, and provide a uniform basis for the solution of a broad spectrum of quality assurance and other measurement-sensitive problems of national concern.

Fire safety, nondestructive evaluation, robotics, solid state device materials and integrated circuitry, electromagnetic interference, environmental measurements, materials recycling, and energy conservation are but a few of the subjects being addressed. All offer challenges and opportunities for cooperative, cost-effective problem solving through participation in the Research Associate Program.
Questions and Answers

What is the Research Associate Program?
A plan which enables scientists and engineers from industrial, professional, trade and other organizations to work for specified periods on a full time basis, under the sponsorship of their employers, at either Gaithersburg, Maryland or Boulder, Colorado laboratories of the National Bureau of Standards on projects of clear mutual interest to the Sponsor and NBS.

What does the Research Associate Program offer to industry?
- An opportunity to work under the supervision of and consult with NBS professionals of recognized stature in their fields.
- Use of the extensive laboratory and related facilities at NBS.
- Exposure to the full spectrum of NBS information and services available to industry.
- A means of communicating directly to NBS the views of industry on needs and problems requiring attention.

What are the criteria for a Research Associate Program?
- It must have non-proprietary objectives.
- It must be within the scope of NBS activities and interests.
- It must offer the prospect of publishable results of interest and significance to the industrial and technical communities represented, and thus ultimately to the public.

What are the opportunities for Research Associate Programs?
They are as varied as the work of NBS itself. Programs of established mutual interest will be entertained in essentially all areas of Bureau activity. The nature of these is suggested by the Technical Activities list provided with this leaflet. The technical plan for each specific Program is defined through direct discussion between the Sponsor's representatives and NBS professional staff members.

How can a potential sponsor learn more about Research Associate Program opportunities of possible interest?
By contacting the NBS Industrial Liaison Officer, who coordinates all Research Associate Programs, provides information to potential sponsors and arranges meetings between them and the appropriate NBS personnel.

How is a Research Associate Program established?
When a mutually acceptable plan which meets the criteria for a Research Associate Program has been defined, a Memorandum of Agreement is prepared by NBS and executed by both parties. This Agreement sets forth the nature, objective and scope of the project, names the Research Associate(s), identifies the individuals responsible for the project, and describes the terms and conditions of the relationship between the Sponsor and NBS. A model Memorandum of Agreement form is available for inspection upon request.

Who is eligible to be a Research Associate?
Any individual having the background and experience to perform independent research in the field covered by the program. The Sponsor and NBS must agree on the qualifications and acceptability of the candidate for the assignment.

How are Research Associates supported?
- A Research Associate remains the employee of the sponsoring organization, which pays the Associate's salary, fringe benefits and travel, and makes arrangements as necessary for temporary relocation of the Research Associate for the period of his or her assignment to the program.
- NBS provides at no cost to the Sponsor technical supervision, office and laboratory space, routine supplies and services and the use of available research equipment not normally subject to time or other usage charges.
Special supplies and services such as materials, shop work, technician assistance, computing time, and formal report preparation are billed to the Sponsor. Charges are based on the same rates as apply to any NBS project.

How long does a Research Associate work at NBS?
Usually for a period of one to three years. Programs can be extended (or terminated) by mutual agreement of the Sponsor and NBS. Programs of extended duration are in many instances carried on by a succession of Research Associates.

Can more than one Research Associate work on one program?
Two or more Research Associates, one of whom is normally designated Senior or Principal Research Associate, may be involved simultaneously in programs of larger scope. The Sponsor may also provide Research Associate Assistants or Technicians to facilitate the work of the Research Associate(s).

What about patent rights?
Patentable output from programs of the nature described herein is generally regarded as unlikely. If an invention is made, however, the rights of the Research Associate are determined in the same manner as they would be if the inventor were an NBS employee. The disposition of any patent rights remaining with the Research Associate would then be governed by the conditions of the inventor’s employment agreement with the Sponsor.

For additional information, write or phone:
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NATIONAL ENGINEERING LABORATORY
Applied Mathematics
Building Technology
Consumer Product Technology
Electronics and Electrical Engineering
Energy Programs
Engineering Standards
Fire Research
Mechanical Engineering and Process Technology

NATIONAL MEASUREMENT LABORATORY
Absolute Physical Quantities
Analytical Chemistry
Basic Measurements and Standards
Environmental Measurements
Materials Science
Measurements for Nuclear Technology
Measurement Services
Nondestructive Evaluation
Radiation Research
Recycled Materials
Standard Reference Data
Standard Reference Materials
Thermodynamics and Molecular Science

INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY
Programming Science and Technology
Systems Engineering

TECHNOLOGY TRANSFER AND LIAISON PROGRAMS
Industrial
International
State and Local Government
A Partial List of Current and Recent Research Associate Programs at the National Bureau of Standards

Company Sponsored

American Hoechst Corporation
Kinetic measurements of atmospheric constituents

Armstrong Cork Company
Fire research (six programs)

Bell Laboratories
Analysis of optical waveguide materials

Bicron Corporation
Solid radiation detectors

Collaborative Testing Services, Inc.
Reliability of measurement techniques to assure interlaboratory comparability

Corning Glass Works
Long-term dimensional stability measurements (two programs)

Dow Chemical Company
Structural properties of masonry fabricated with organic-modified mortar
Measurement of heat flux at interior surfaces of buildings
Industrial and commercial energy conservation (EPIC Handbook)
Energy conservation in mobile homes

Eastman Kodak Company
Solid state detectors for resolution of complex gamma ray spectra
Methodology for serum analyses

Hewlett-Packard
Electromagnetic interference measurement technology

IBM Corporation
Phosphor characterization
Magnetic tape performance criteria
Contact resistance of plated metals
Guidelines for controlled accessibility

Interdata, Inc.
Methodology for test of minicomputer software

The Procter and Gamble Company
Enhancement of industrial innovation
Physical properties of long-chain triglycerides

Scientech, Inc.
Laser power and energy measurement

Skidmore, Owings & Merrill
Thermal characteristics of high-mass exterior insulated wall construction

Sperry-UNIVAC
Information processing standards

United States Steel Corporation
Measurement of low-level gas concentrations in metals
Nuclear magnetic resonance studies of metallic alloys
Aluminum Association (with American Electroplaters' Society)
Plating of aluminum

American Dental Association
Health Foundation
Dental materials

American Iron and Steel Institute
Fire endurance of steel building systems and structural elements

American Society for Testing and Materials (ASTM)
Standards for air pollution measurement
Cement and Concrete Reference Laboratory
Performance criteria for insulating glass assemblies
Standard Reference Materials for metals industries

Association of Petroleum Re-Refiners
Measurement technology for evaluation of recycled oil quality

Atomic Industrial Forum
Measurement technology for radiopharmaceuticals

College of American Pathologists
Definitive methods for clinical assays

Edison Electric Institute/Electric Power Research Institute
Accuracy of transfer, maintenance and use of the kilowatt-hour standard

Gypsum Association
Combustibility of building materials

International Sugar Research Foundation
Polarimetric determination of sugar composition

Joint Committee on Powder Diffraction Standards (JCPDS)
Data and techniques for identification of crystalline phases

Man-Made Fiber Producers Association
Flammability and flame propagation characteristics of carpeting
Flammability of commercial apparel fabrics and garments (two programs)

Motor Vehicle Manufacturers Association
Standard Reference Materials for emission measurements

National Fenestration Council
Thermal, visual, and acoustical benefits of fenestration

Society of the Plastics Industry, Inc.
Flammability of plastics