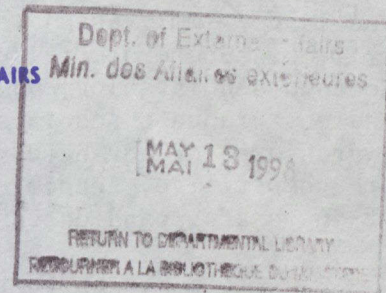


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THE NATIONAL RESEARCH COUNCIL OF CANADA

(Prepared by Information Services Office, National
Research Council of Canada, Ottawa 7, Ontario.)

The National Research Council of Canada has the broad mandate of fostering and supporting scientific and industrial research in Canada. The NRC Act assigns but does not limit NRC to the following functions: utilization of Canada's natural resources; improvement of technical methods and processes used in Canadian industry; maintenance and improvement of the primary physical standards of measurement for Canada; setting of standards of the quality of material used in public works; standardization of scientific and technical apparatus used in Canadian industry and government; foster the carrying-out of scientific and industrial research.

The mandate of NRC is implemented mainly through: operation of research laboratories; financial assistance for research activities in Canadian universities; financial assistance and promotion of research in industry; operation of the National Science Library and the Technical Information Services.

The Federal Government has designated the National Research Council as the co-ordinating body for the further development of a national scientific and technical information system (STI), under the general direction of the National Librarian. The integrated national system, encompassing the natural sciences and engineering, will be decentralized and based on the existing resources and systems in industry, the universities, and government, all linked together.

On 1 April, 1970, the Government announced that federal research in astronomy would be consolidated under NRC. The Council is now responsible for the operation of the Dominion Astrophysical Observatory, Victoria, British Columbia, and the Dominion Radio Astrophysical Observatory, Penticton, B.C. Also involved in the transfer are the Time Service of Canada, the solar and meteor programs of the Dominion Observatory in Ottawa, and the Meteorite Observation and Recovery Project, which is a network of photographic stations with headquarters in Saskatoon, Saskatchewan.

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Since its inception, the Council has encouraged and supported research in Canadian universities. A system of postgraduate scholarships and postdoctorate fellowships is provided for the assistance of students (Canadians and landed immigrants) who have shown promise of research ability. The awards are: postdoctorate fellowships; postgraduate scholarships; bursaries; 1967 Science Scholarships; post-industrial experience research (PIER) fellowships; and postgraduate scholarships in science, librarianship and documentation. Awards are for advanced studies and/or research in science and engineering and are competitive, academic excellence being the main criterion in the selection of successful candidates.

In addition to the support provided for research in Canadian universities, the Council now has a postdoctorate program for the support of research in Canadian industry, which was introduced in 1970. These industrial postdoctorate fellowships are intended to encourage highly-qualified science and engineering students to seek careers in industry.

Postdoctorate fellowships and industrial postdoctorate fellowships are awarded to candidates who have recently completed or who are about to complete their requirements for a doctorate degree. The purpose of the two programs is to enable those who have received a doctorate degree to undertake, before becoming permanently employed, postdoctoral research for up to two years after receiving their degree. Postdoctorate fellowships are tenable in Canadian universities and in universities and other institutions abroad. Industrial postdoctorate fellowships are tenable in industrial organizations in Canada.

Postgraduate scholarships are awarded for tenure in Canada, and successful candidates may elect to carry out their programs at the Canadian universities of their choice. Although awards are intended for tenure in Canada only, successful candidates for whom facilities for a Ph.D. program are limited or lacking in Canada may receive special NRC permission to hold their scholarships at a university abroad.

The Council modified the program in 1970, and the winner of an award for a first year of graduate study now has the option of deferring tenure of his scholarship for up to two years to encourage him to investigate career opportunities in industry.

Bursaries are awarded to students nominated by universities. Canadian universities receive an annual quota of bursaries from the National Research Council and are responsible for the selection of students for these awards. Unlike postgraduate scholarships, bursaries are not transferable; tenure must be at the university that nominated the student for the award.

The 1967 Science Scholarship Program was introduced in 1967 to celebrate the centennial of Canadian Confederation and the fiftieth anniversary of the National Research Council. These awards are intended to encourage young men and women of outstanding intellectual promise to pursue postgraduate studies and research leading to doctorate degrees. It is intended that they should stimulate exchanges of students between different cultural and geographical regions in Canada. Scholars must select for graduate studies universities other than those from which their first degrees were obtained.

Post-industrial experience research (PIER) fellowships were introduced in 1966 with the object of providing an opportunity for persons with industrial experience to gain additional research experience and training. A number of these awards are made available each year to candidates who have had a minimum of five years industrial experience.

Postgraduate scholarships in science librarianship and documentation were introduced in 1967 with the object of encouraging graduates with degrees in science or engineering to become science librarians, documentalists or science information specialists in an effort to meet the demand by universities, research laboratories, industrial firms and related organizations for properly qualified persons in these fields.

NRC Laboratories

The National Research Council has ten laboratories, dealing with biochemistry, biology, building research, chemistry, mechanical engineering, aeronautical research, radio and electrical engineering, physics, as well as the Atlantic Regional Laboratory in Halifax, Nova Scotia, and the Prairie Regional Laboratory in Saskatoon, Saskatchewan.

These laboratories carry out long-term, applied and specific project research work in areas for which commercial companies have neither sufficient money nor facilities. The results of research are disseminated through NRC publications, which provide an international distribution for scientific information coming out of Canadian laboratories and institutes. Laboratory inventions are patented and made available to Canadian manufacturers.

The *Biochemistry Laboratory* is concerned with enzymes and protein chemistry, immuno-chemistry, cell biochemistry, and syntheses of biochemical compounds. Individual scientists can and do participate in experiments in more than one of these lines of research as overlapping and collaborative interests develop. The underlying purpose is to explain the biological activity and function of substances in terms of chemical structures.

The *Biology Laboratory* conducts programs of pure and applied research in animal physiology, cytology, food technology, mathematics and radiation biology.

The provision of a comprehensive research service for the Canadian construction industry is the primary concern of the *Division of Building Research*. It also serves as the technical research wing of Central Mortgage and Housing Corporation and, in addition, provides technical and secretarial support to the Associate Committee on the National Building Code.

The *Division of Chemistry* is concerned with supplying new scientific information for the development of Canada's natural resources and chemical industries. The work of the Division also consists of long-term fundamental investigations in organic, physical and theoretical chemistry designed to provide new basic knowledge.

The *Division of Mechanical Engineering* works in certain areas of hydraulic and mechanical engineering and naval architecture.

The *National Aeronautical Establishment* studies aeronautical research problems related to defence and civil aviation, working in co-operation with the Canadian aircraft industry; it also carries out its own research program.

The work of the *Radio and Electrical Engineering Division* includes engineering projects of interest to Canadian industry and fundamental research in electrical science.

The work of the *Division of Physics* is divided between research in areas of physics considered most likely to contribute in a practical way to the Canadian economy and research directed toward the improvement of the accuracy and precision of fundamental physical standards, on which all measurements are based. The Division also pursues work on fundamental problems that have no immediate application but advance the frontiers of knowledge and supply the basis for further progress in the applied fields.

The *Atlantic Regional Laboratory* is engaged in practical and fundamental studies in chemistry and biology related to the resources and industries of the Atlantic Provinces.

One of the aims of the *Prairie Regional Laboratory* is to develop wider uses for crops grown on the Prairies by determining potential uses of crops now in production and by encouraging the production of new crops to meet specific needs.

Other Units

The function of the *Space Research Facilities Branch* is to develop and provide facilities to meet the needs of the upper-atmosphere and space-research programs of Canadian scientists in universities and government agencies.

The *Division of Administration and Personnel* provides administrative, management and plant-engineering services for the entire organization. There are also a financial services office, an administrative planning service and an office of the General Counsel.

Serving Canadian science generally are the National Science Library of Canada, the Technical Information Service, and the Liaison Office in London.

The *National Science Library* provides communication services of many kinds to the scientific and industrial communities of Canada, based on one of the world's outstanding collections on science and technology. In addition, it has cable links with other centres throughout the world to expand its scope of reference material. The Library makes available English and French translations of foreign scientific and technical papers prepared in all parts of the world.

The *Technical Information Service* provides Canadian industry with scientific and technical data on materials, processes and equipment, as well as on industrial engineering problems. The Service also administers the NRC Industrial Research Assistance Program, which stimulates and promotes industrial research in Canadian manufacturing industries.

The National Research Council publishes nine primary research journals, on biochemistry, botany, chemistry, earth sciences, geotechnology, microbiology,

physics, physiology and pharmacology, and zoology. Original research papers are published by these journals in either French or English. (1)

NRC maintains a scientific liaison office in London, England, for the exchange of scientific information. The Council has a scientific exchange agreement with the Soviet Academy of Sciences that provides for visits of scientists lasting from three weeks to nine months; it has also accepted responsibility for exchange of Canadian scientists with France under the Cultural Agreement between the Government of Canada and France. An agreement on scientific exchanges has also been concluded with Brazil.

Canadian Patents and Development Limited, a subsidiary of NRC, patents and licenses new products and processes that come out of research by NRC, other government departments and agencies, and Canadian universities. CPDL initiates and finances the development of many inventions to a stage where it becomes economically possible for private industry to carry them through to production and sale, thus bridging the gap between research and industry.

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- (1) Instructions to contributors to these journals may be obtained by writing to: Editorial Department, National Research Council of Canada, Ottawa 7, Canada. A charge of \$20.00 a page must be paid on all papers reporting work done outside Canada.

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