NIH GUIDE for GRANTS and CONTRACTS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Vol. 8, No. 1, January 19, 1979

IN THIS ISSUE:

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HAVE YOU MOVED?

If your present address differs from that shown on the address label, please send your new address to: Grants and Contract Guide Distribution Center, National Institutes of Health, Room B3BN10, Building 31, Bethesda, Maryland 20014, and attach your address label to your letter. Prompt notice of your change of address will prevent your name from being removed from our mailing list.

The GUIDE *is published at irregular intervals to announce scientific initiatives and to provide policy and administrative information to individuals and organizations who need to be kept informed of opportunities, requirements, and changes in grants and contracts activities administered by the National Institutes of Health.*

Supplements, printed on yellow paper, are published by the respective awarding units concerning new projects, solicitations of sources, and requests for proposals.

IN THIS ISSUE: (continued)

BASIC AND CLINICAL STUDIES OF CYSTIC FIBROSIS

NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES
NATIONAL HEART, LUNG, AND BLOOD INSTITUTE
NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES
NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES
NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT
NATIONAL INSTITUTE OF DENTAL RESEARCH

ANNOUNCEMENT

The above-named Institutes of the National Institutes of Health invite applications for research grants in the general area of cystic fibrosis (CF).

I. PROGRAM SPECIFICATIONS

A. Program Objectives

In the United States, CF is the most common lethal genetic metabolic disease among Caucasian children. Incidence of the disease in the United States is approximately 1 in 2000 live births.

Cystic fibrosis is believed to be transmitted as an autosomal recessive trait. It seems to be an error of metabolism, but the defective or absent gene product has yet to be defined. The clinical syndrome associated with a generalized dysfunction of the exocrine glands results in pancreatic insufficiency, elevated sweat electrolytes, intestinal obstruction, hepatic cirrhosis, cor pulmonale, and chronic pulmonary disease.

B. Research Scope

The emphasis of this program announcement is upon research in cystic fibrosis or in areas not directly concerned with cystic fibrosis, but which could be expected to contribute to the understanding of the etiology, diagnosis, treatment, cure, or prevention of cystic fibrosis.

Programmatic responsibility for extramural cystic fibrosis research has traditionally been centered in the National Institute of Arthritis, Metabolism, and Digestive Diseases. Nonetheless, because of the multidisciplinary nature of the disease, support and management of CF-related investigations have come to be shared among the Institutes developing this announcement.

Some of the areas of research interest of the Institutes are listed below. They are not listed in any order of priority. Moreover, these are examples only; other areas of research may occur to the applicant which are related to cystic fibrosis and which would be appropriate for support. The areas of research interest identified by the NIH are as follows:

1. Etiology, Pathogenesis, Natural History, Treatment Studies of the nature, epidemiology, etiology, pathogenesis, and treatment of cystic fibrosis and its complications. Such studies may be approached from any discipline appropriate to basic research, clinical investigation, or epidemiology.

2. Pulmonary Complications Research into the nature, etiology, pathogenesis, and management of the pulmonary alterations associated with cystic fibrosis.

3. Exocrine Function Basic studies of the mechanism of exocrine secretion as it relates to cystic fibrosis. Studies of the basic cellular secretory processes and their controlling mechanisms including differentiation and regulation associated with ontogenetic change.

4. Diagnosis Research into the development of new or improved techniques for establishing the diagnosis of cystic fibrosis, including the development of satisfactory and reliable markers of the disease.

5. Genetic Markers Research into the role of genetic factors in cystic fibrosis including the identification of specific genetic markers or "factors" which would identify individual carriers of the genetic syndrome, including the heterozygotic carrier and the fetus *in utero* (antenatal diagnosis).

6. Experimental Animal Models Studies developing, characterizing, or utilizing models (genetic or induced) of cystic fibrosis in experimental animals.

7. Immunology and Infectious Diseases Basic and developmental immunologic studies to characterize the host defense mechanisms of the individual with cystic fibrosis. Applied research leading to efficacious immunoprophylaxis and improved antimicrobial therapy of associated infections (especially Pseudomonas aeruginosa).

8. Digestive Complications Studies into the problems associated with the maldigestion and malabsorption in the gastrointestinal tract of cystic fibrosis patients, ontogeny of enzyme induction, and the interplay of substrates and hormones during critical stages of development.

C. Mechanism of Support

The mechanism of support for this program will be the grant-in-aid. The regulations (Code of Federal Regulations, Title 42, Part 52, and Title 45, Part 74) and policies which govern the research grant programs of the National Institutes of Health will prevail.

The award of grants pursuant to this announcement is contingent upon availability of appropriated funds.

II. METHOD AND CRITERIA OF REVIEW

A. Assignment of Applications

Applications will be received by the NIH's Division of Research Grants, referred to an appropriate study section for scientific review, and assigned to individual Institutes for possible funding. These decisions will be governed by normal programmatic considerations as specified in the DRG's Referral Handbook.

B. Review Procedures

Applications in response to this announcement will be reviewed in accord with the usual National Institutes of Health peer review procedures (study sections).

The factors considered in the scientific merit evaluation of each application will include an assessment of the importance of the proposed research problem; the novelty and originality of the approach; the training, experience, and research competence or promise of the investigator(s); the adequacy of the experimental design; the suitability of the facilities; and the appropriateness of the requested budget relative to the work proposed. Following study section review, the application will be evaluated for program relevance by the appropriate Institute Advisory Council or Board.

C. Deadline

Applications will be accepted in accordance with the usual receipt dates for new applications:

March 1, 1979
July 1, 1979
November 1, 1979

III. METHOD OF APPLYING

Applications should be submitted on form PHS 398, which is available in the business or grants and contracts office at most academic and research institutions. The phrase "PREPARED IN RESPONSE TO NIH CYSTIC FIBROSIS PROGRAM ANNOUNCEMENT" should be typed across the top of the first page of the application.

The original and six copies of the application should be sent or delivered to:

Application Receipt Office
Division of Research Grants
National Institutes of Health
Room 240, Westwood Building
Bethesda, Maryland 20014

For further information, investigators are encouraged to contact one or more of the following individuals:

National Institute of Arthritis, Metabolism, and Digestive Diseases

Chief, Endocrinology and Metabolic Diseases Branch
Extramural Programs
NIAMDD
Room 622, Westwood Building
Bethesda, Maryland 20014

Telephone: (301) 496-7645

National Heart, Lung, and Blood Institute

Chief, Airways Diseases Branch
NHLBI
Room 6A11, Westwood Building
Bethesda, Maryland 20014

Telephone: (301) 496-7332

National Institute of Allergy and Infectious Diseases

Medical Officer, Clinical Studies Branch
NIAID
Room 7A49, Building 31
Bethesda, Maryland 20014

Telephone: (301) 496-5893

National Institute of General Medical Sciences

Assistant Director for Clinical Research
NIGMS
Room 925, Westwood Building
Bethesda, Maryland 20014

Telephone: (301) 496-7373

National Institute of Child Health and Human Development

Pediatrician, Developmental Biology and Nutrition Branch
Center for Research for Mothers and Children
NICHD
Room C716, Landow Building
Bethesda, Maryland 20014

Telephone: (301) 496-5575

National Institute of Dental Research

Chief, Soft Tissue Stomatology and Nutrition Program
NIDR
Room 525, Westwood Building
Bethesda, Maryland 20014

Telephone: (301) 496-7807

REFERENCES:

Selected Bibliography

Mangos, J.A. and Talamo, R.C. Cystic Fibrosis Projections into the Future. Published by Symposia Specialists: New York, New York (1976).

Wood, R.D., Boat, T.F., and Doershuk, C.F. Cystic Fibrosis. American Review of Respiratory Disease, 113, 833, 1976.

Di Sant'Agnese, P.A. and Davis, P.B. Research in Cystic Fibrosis. New England Journal of Medicine, 295, 481-485, 534-541, and 597-602, 1976.

Cystic Fibrosis: State of the Art and Directions for Future Research Efforts. U.S. Department of Health, Education, and Welfare publication. This document will be available for distribution in January 1979. Please contact Chief, Endocrinology and Metabolic Diseases Branch, NIAMDD, for copies.

REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA NHLBI-DBDR-79G-H

NATIONAL HEART, LUNG AND BLOOD INSTITUTE

ANNOUNCEMENT

TITLE: *THE DEVELOPMENT OF AN INTRAVASCULAR SYSTEM FOR ASSAYING CHARACTERISTICS OF SICKLE ERYTHROCYTES*

The Division of Blood Diseases and Resources of the National Heart, Lung, and Blood Institute is inviting research grant applications for the development of an intravascular system for assaying characteristics of sickle erythrocytes through the study of laboratory animal systems.

This type of soliciation (the RFA) is utilized when the Division wishes to stimulate investigator interest in a particular research area that is important to the National Program. Unlike the RFP (Request for Contract Proposals), the RFA is supported through the customary NIH grant-in-aid and is governed by the policies for regular research grants. However, the RFA solicitation represents a single competition, with a specified deadline for receipt of applications. All applications in response to the RFA will be reviewed at the same time by a special ad hoc review panel. Approved applications that receive grant awards will be administered in the same fashion as regular research grants.

Applications should be prepared in accordance with the aims and requirements which are described in the following sections.

I. PROGRAM SPECIFICATIONS

- A. The Sickle Cell Disease Branch
- B. Program Objectives
- C. Research Scope
- D. Mechanism of Support

II. METHOD AND CRITERIA FOR REVIEW

- A. Review Procedures
- B. Review Criteria

III. METHOD OF APPLYING

- A. Letter of Intent
- B. Application Format
- C. Application Procedure

If you have any questions relating to this announcement, you should contact Dr. John I. Hercules at (301) 496-6931.

THE DEVELOPMENT OF AN INTRAVASCULAR SYSTEM FOR ASSAYING CHARACTERISTICS OF SICKLE ERYTHROCYTES

I. PROGRAM SPECIFICATIONS

A. The Sickle Cell Disease Branch

The Sickle Cell Disease Branch of the Division of Blood Diseases and Resources sponsors fundamental and clinical research grants and contracts related to the pathophysiology of the clinical syndromes caused by sickle cell hemoglobin. In addition, studies which involve biochemical, hematological, anatomical, physiological, biophysical, and clinical approaches to an understanding of the nature, cause, diagnosis, and treatment of sickle cell disease are supported. This request for applications is intended to encourage submission of individual research grant proposals designed to:

1. Increase our understanding of the pathophysiology of sickle cell anemia through a systematic in vivo study of the behavior of sickle erythrocytes,

2. Employ the intravascular system for the evaluation of the in vivo effectiveness of various drugs known to inhibit sickling in vitro, and

3. Correlate in vitro and in vivo rheological changes with manifestations of tissue damage as an explanation of the pathophysiology of sickle cell disease.

B. Program Objectives

Within the last few years, intensive study of sickle cell disease has provided vital information of critical value in human biology. At the molecular level, significant advances have been made in understanding the formation of the sickle hemoglobin gel and, to a a lesser extent, the deformation of the sickle erythrocyte which follows deoxygenation. Yet there is almost no understanding of the mechanism by which such cellular changes lead to tissue damage and the ultimate pathophysiological manifestations of sickle cell disease. Recently, several ways of studying the flow or rheological properties of sickle erythrocytes, including viscosity, filterability, and deformability, have been used in vitro, but there are considerable technical problems with all of these methods and the correlation of any one method with the others is not established. The lack of progress to develop methods to improve intrinsically defective or damaged erythrocyte survival has been greatly inhibited because of the inability to subject humans to those experimental conditions known to induce sickling in vitro. The hazards involved in this practice are well known. A few studies with exposed blood vessels under microscopic examination or in chemically treated animals have been done, but these studies have largely been qualitative or subject to controversy because of the prior preparation of the

cells or the animal. Additional quantitative studies with blood vessel or whole animal models are necessary to establish good models of in vivo circulatory phenomena and to correlate these data with the technically easier and more precise in vitro data.

The mechanisms of tissue damage remain obscure. It is likely, however, that a small animal system to study the flow of sickle erythrocytes will allow the precise study of tissue damage in various organs by new methods.

C. Research Scope

The ultimate goal of this program is to extend the fundamental advances in molecular and cellular studies to the level of the disease processes through research of new approaches for examining the behavior of sickle erythrocytes in vivo.

The development of methodology for identification of the behavior of sickle cells in vivo will require an appropriate experimental animal. One possible approach would involve returning an animal's own red cells to the circulation after replacing a portion of the native hemoglobin with sickle hemoglobin. The technology of this manipulation is already well advanced, however flawed at present by damage to the red cell membrane during the exchange process. Still, results are promising and suggest the need for further research. Other approaches designed to reduce the antigenicity of human red cells deserve attention.

It should be emphasized that animal experimentation of this order is not analogous to seeking biosynthetic metabolic derangements in animals that could necessarily be extrapolated to humans. In contrast, it is assumed that the pathology in sickle cell disease arises first from mechanical obstruction of the microcirculation, followed then by damage to tissue served by the occluded vessels. A major advance in understanding organ damage secondary to presence of sickle cells in the circulation would be verification or denial of the "vaso-occlusive" hypothesis. Thus, it follows that development of an intravascular system would be invaluable, and, in fact, mandatory for the testing of agents proposed as clinically effective in inhibiting or preventing sickling in man.

D. Mechanism of Support

The support mechanism for this program will be the traditional NIH grant-in-aid; successful applicants will plan and execute their own research program. Upon initiation of the program, the Division of Blood Diseases and Resources will sponsor periodic meetings to encourage exchange of information between investigators who participate in this program.

Although this program is included and provided for in the financial plans for Fiscal Year 1979, award of grants pursuant to this

request for grant applications is contingent upon ultimate receipt of appropriated funds for this purpose. It is the intention of the Sickle Cell Disease Branch to award four or five grants. A variety of approaches would represent valid responses to this announcement. Accordingly, it is anticipated that there will be a range of costs among individual grants awarded. Applicants are requested to furnish their own estimates of the time required to achieve the objectives of the proposed research project; however, the total project period of this proposal must not exceed three years. At the end of the project period, renewal proposals may be submitted for competitive review.

The regulations (Code of Federal Regulations, Title 42, Part 52, and Title 45, Part 74) and the current policies which govern the research grant programs of the NIH will prevail.

II. METHOD AND CRITERIA FOR REVIEW

A. Review Procedures

Proposals will be reviewed in a national competition with each other. Primary review will be arranged by the Division of Research Grants and be conducted by a scientific merit review group composed primarily of non-Federal consultants; secondary review will be by the National Heart, Lung, and Blood Advisory Council.

B. Review Criteria

The factors considered in evaluating each application will be:

- The scientific merit of the research design, approaches, and methodology;
- The research experience and competence of the staff to carry out the proposed investigations;
- Adequacy of time (effort) to be devoted to the project by the investigator(s) and technical staff;
- The adequacy of the organizational arrangements for direction and management of the program;
- The evidence of institutional commitment to the program.

III. METHOD OF APPLYING

A. Letter of Intent

Prospective applicants should submit a one page letter describing the proposed research program not later than February 15, 1979, to:

Dr. Charles L. Turbyfill
Chief, Centers and Special Projects Review Section
Review Branch
Division of Extramural Affairs
National Heart, Lung, and Blood Institute
Room 553, Westwood Building
Bethesda, Maryland 20016

The Institute requests such letters only to provide a perspective of the number and the scope of applications. A letter of intent is not binding, and it will not enter into the review of any proposal subsequently submitted.

B. Format for Applications

Applications should be submitted on form PHS 398, the application form for the traditional research grant. The conventional presentation for research grant applications should be utilized; the points identified under the Review Criteria must be fulfilled.

C. Application Procedure

The original and six (6) copies of the application must be received before 5:00 p.m., Eastern time, April 2, 1979. Applications should be sent or delivered to:

Division of Research Grants
National Institutes of Health
Room 240, Westwood Building
Bethesda, Maryland 20016

A brief covering letter should accompany the application indicating that it is in response to the program announcement "DEVELOPMENT OF AN INTRAVASCULAR SYSTEM FOR ASSAYING CHARACTERISTICS OF SICKLE ERYTHROCYTES - NHLBI". A copy of the covering letter should be sent to:

Dr. Charles L. Turbyfill
Chief, Centers and Special Projects Review Section
Review Branch
Division of Extramural Affairs
National Heart, Lung, and Blood Institute
Room 553, Westwood Building
Bethesda, Maryland 20016

to indicate that the application has been submitted.

ANIMAL RESOURCES DIRECTORY (REV. 1978)

NOTICE

NOW AVAILABLE

The *Directory* describing the animal resources of NIH's Division of Research Resources (DRR) has been completely revised and is now available free.

Titled *Animal Resources, A Research Resources Directory (Rev. 1978)*, the 57-page booklet is designed as a guide to aid scientists seeking resource assistance and collaboration involving animals in biomedical research.

The *Directory* identifies animal diagnostic laboratories, animal information projects, animal reference centers, special colony and model study centers, and NIH's major Primate Research Centers currently supported by DRR.

Specific examples of resources provided by the program are animal surgery, x-ray and clinical pathology units; special animal research facilities such as radiation sources, scanning and transmission electron microscopes, and pollution exposure chambers; animal disease diagnostic services; reference reagents and antisera; germfree animals; and a great variety of invertebrate and vertebrate species, including domestically bred nonhuman primates and specific genetic strains and models in development.

The *Directory* identifies the resources provided, research emphasis or application, the principal investigator or director, and address and telephone number. A contact person is indicated for each resource.

Included is a geographic index listing the resources by State and within each State. A map shows the locations of the Primate Research Centers and Animal Diagnostic Laboratories throughout the country.

A single free copy of *Animal Resources, A Research Resources Directory (Rev. 1978)* may be secured by writing to:

Research Resources Information Center
1776 East Jefferson Street
Rockville, Maryland 20852

or by request from:

Office of Science and Health Reports
Division of Research Resources
National Institutes of Health
Bethesda, Maryland 20014

PROGRAM PROJECT GRANTS,

NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES

NOTICE

The National Institute of General Medical Sciences (NIGMS) recently published guidelines for research center grant awards in its programs which, among other factors, limited the direct costs to $500,000 per year (see *NIH Guide for Grants and Contracts*, Vol. 7, No. 4, p. 13, March 10, 1978; and Vol. 7, No. 6, p. 1, April 14, 1978). As a result, many investigators have asked about the NIGMS position on program project grants and their relationship to other support mechanisms. This notice is intended to answer some of the questions which have arisen.

The program project grant is generally intermediate in scope and budget between the investigator-initiated individual research project grant and the larger, more complex, multi-investigator research center grant. Individual research grants are awarded to support the work of one established investigator who, with supporting staff, is addressing a scientific problem. Research center grants involve several senior investigators as well as junior colleagues and are intended to encourage research collaboration between basic and clinical scientists on a group of closely interrelated projects which are focused on solving a clearly identified biomedical research problem within a field specified by the Institute.

Description

Program project grants are available to a group of several investigators with differing expertise who wish to collaborate in research by pooling their talents and resources for work on a specific scientific problem that thus may be solved more expeditiously. The program project grant is investigator initiated, closely defined around a specific scientific problem, and is usually smaller in both budget and size than the average research center grant. While three to five investigators are usually involved, one scientist is designated by the applicant institution as principal investigator and bears responsibility for the scientific and fiscal management of the program project grant. It is expected that most of the collaborating scientists will be independent investigators. For example, support of one senior investigator and several postdoctoral or research associate-level scientists is not appropriate. In most cases, investigators from more than one department or administrative unit will be represented. Applicants are reminded that the program project grant is not intended to be a vehicle for departmental research support. Equipment and other core resources which are necessary for the accomplishment of the objectives of the program project grant may be requested. However, the need of each investigator for use of a major piece of equipment or core facility does not, in itself, provide justification for a program project grant.

INSTRUCTIONS FOR PREPARATION OF A PROGRAM PROJECT GRANT APPLICATION

Overall Proposal

An introductory section should contain justification of the need for the program project grant mechanism and describe those goals which are not as readily attainable through individual research project grants. This section should include: (1) a list of participating personnel; (2) the consolidated budget for the program project grant (summarizing sub-budgets for the component parts and core; (3) a description of the objectives of the program as a whole; (4) a description of the benefits to be achieved by funding as a program project grant rather than as a series of individual research grants; (5) a description of facilities available, including major instruments and special program resources; (6) the administrative arrangements for overall scientific leadership, quality control, and management of the program project grant; and (7) a separate, overall listing of proposed percent of effort on the program project grant and actual and pending research support and the funding level from all sources for each participating investigator (including percent effort devoted to each project).

Individual Projects

Each component of a program project grant should represent an independent as well as interdependent research effort and should be prepared in the format of an individual research grant application, including budget pages, biographical information, detailed description of the research to be conducted, and separate human experimentation certification and a memorandum of understanding and agreement (MUA) if applicable for recombinant DNA research. If support of core resources is requested, a separate section for this should be included.

Procedural Instructions

Applicants should avail themselves of staff consultation prior to submission of a program project grant application. Requests for details of research areas supported by NIGMS and inquiries exploring the suitability of the program project grant mechanism should be directed to the Program Director of the appropriate NIGMS program.

1. Cellular and Molecular Basis of Diseases Program - (301) 496-7021
2. Genetics Program - (301) 496-7087
3. Physiology and Biomedical Engineering Program - (301) 496-7253
4. Pharmacology-Toxicology Program - (301) 496-7181

Assignment of program project grant applications to the appropriate initial review group is the responsibility of the Division of Research Grants. Final review by the National Advisory General Medical Sciences Council will take into account the scientific merit of the proposal and the relevance of the proposed work to the goals of the National Institute of General Medical Sciences.

AVAILABILITY OF PUBLICATION:

DO WE CARE ABOUT RESEARCH ANIMALS?

NOTICE

A 4-section revised foldout, describing how the use of laboratory animals in research has helped medical science in its efforts to discover the cause and cure of human diseases, has been published and is available from the Division of Research Resources, National Institutes of Health.

The folder further delineates the indispensable role of research animals in the laboratory and explains why their use is "as important to your health as the scientist's test tube."

The new folder also points up the efforts of NIH to aid laboratory animals by the study and diagnosis of specific animal diseases, by determining the optimum environmental and health care requirements of laboratory animals, and by devising methods and procedures for upgrading institutional care of research animals. Almost 100 specific projects by NIH's Animal Resources Program are involved in aiding laboratory animals.

Copies of *Do We Care About Research Animals?* may be secured by writing to:

Office of Science and Health Reports
Division of Research Resources
National Institutes of Health
Bethesda, Maryland 20014

AVAILABILITY OF NONHUMAN PRIMATES FOR USE IN BIOMEDICAL RESEARCH

NOTICE

The Interagency Primate Steering Committee seeks to determine the need for certain nonhuman primates within the biomedical research community for calendar year 1979. A number of tamarins (Saguinus mystax and S. fuscicollis) and squirrel monkeys (Saimiri sciureus) will be available from Peru through the Pan American Health Organization. It is expected that both "Gothic arch" and "Roman arch" squirrel monkeys may be obtained.

Investigators whose research is dependent upon these primate species are invited to notify:

Executive Director
Interagency Primate Steering Committee
Room 4B30, Building 31
National Institutes of Health
Bethesda, Maryland 20014

Telephone: (301) 496-5424

The following information should be provided:

1. Name of investigator
2. Institutional affiliation
3. Location and mailing address
4. Telephone number
5. Primate species and quantity required
6. A brief statement of the nature of the research and justification for the use of these particular species.

REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA

TITLE: *MECHANISMS OF IMMUNOLOGIC DISEASE*

ANNOUNCEMENT

The National Institute of Allergy and Infectious Diseases (NIAID) invites applications for program project grants to be awarded during FY 1980 for participation in its ongoing Immunologic Diseases Program.

I. PROGRAM SPECIFICATIONS

II. METHOD AND CRITERIA FOR REVIEW

III. METHOD AND CRITERIA FOR APPLYING

IMMUNOLOGIC DISEASES PROGRAM

I. PROGRAM SPECIFICATIONS

A. The Allergy and Clinical Immunology Branch

The Allergy and Clinical Immunology Branch of the Immunology, Allergic, and Immunologic Diseases Program of NIAID is concerned with asthma, allergic, and immunologic diseases and with relevant mechanisms of hypersensitivity and inflammation. This request for applications (RFA) is intended to encourage the development of proposals from collaborative basic science and clinical investigative groups, and to coordinate the submission of new and renewal program project applications providing equitable opportunity for both to compete for funds currently available for existing programmatic activities concerned with the study of mechanisms of immunologic diseases. As such, this program is intended to complement the Branch's Asthma and Allergic Disease Center program as well as the Centers for Interdisciplinary Research in Immunologic Diseases program.

B. The Immunologic Diseases (ID) Program

Immunologic diseases together with asthma, allergic diseases, and hypersensitivity and inflammatory disorders constitute major areas of endeavor of the Allergy and Clinical Immunology Branch. The programmatic activity on immunologic diseases is designed to further investigate underlying mechanisms of disease and to enhance relevant basic knowledge to the etiology, prevention, and management of immunologic disorders. Studies are effected from either one of two disciplinary approaches: clinical immunology or immunopathology. Clinical immunology studies are directed toward acquired and inherited diseases associated with dysfunctions of the immune system. Immunopathology studies include specific areas of genetics, cytology, biochemistry, physiology, and pharmacology of the immune system and its disorders.

The ID program is concerned with and seeks to define the etiologic factors, pathogenic mechanisms, development of critical diagnostic measures and approaches to effective prevention, control, and treatment of immunologic abnormalities.

C. Program Features and Scope

1. Program project grants are awarded to an institution in behalf of a principal investigator for the support of a broadly based, multidisciplinary, long-term research program which has a specific major objective or basic theme. A program project generally involves the organized efforts of groups of investigators, members of which conduct research projects related to the overall program objective. The grant can provide support for the projects and for certain basic resources shared by individuals in a program where the sharing facilitates the total research effort. Each project supported under a program project grant is expected to contribute to and be directly related to the common theme of the program; the projects should demonstrate an essential element of unity and interdependence. This program contrasts with Center grants in that it does not provide support for other related nonresearch components, such as offering a referral service, offering programs in continuing medical education, or provide for programs of demonstration and technology transfer. The latter functions are supported by the Asthma and Allergic Diseases Centers and Centers for Interdisciplinary Research in Immunologic Diseases.

2. It is planned that awards will be made during FY 1980 to support at least three program project grants. It is anticipated that projects will be initiated April 1, 1980.

3. Proposals should emphasize new ideas and new initiatives and should be concerned with the clinical relevance of new knowledge to the immune system and its disorders deriving from studies in related disciplines.

4. Protocols focused on the study of immune mechanisms in disease should be designed to favor integration and coordination of intra-institutional research projects concerned with immunologic disorders and those in basic biomedical sciences. Programs should include clinical investigative components drawing upon immunologically relevant endeavors in medicine, pediatrics, surgery, and their subspecialities.

5. While proposals should be based on clinical investigation as the major requirement, the value and place of experimental studies are recognized. Inclusion of basic research components utilizing samples of human source materials in in vitro procedures and those involving laboratory animals serving as feasible models for required in-depth studies are

acceptable. Such work, however, should clearly demonstrate relevance to human disease.

6. Patient oriented studies and those involving in vitro laboratory procedures and the use of experimental animal models should have an immunologic base or draw upon immunologically relevant areas in the disciplines of biochemistry, pharmacology, microbiology, virology, genetics, or pathology.

7. The proposal should consist of a number of demonstrably integrated projects utilizing multifaceted experimental approaches and investigative probes bearing upon either a well-defined immunologic disease or upon immune mechanisms common to multiple human disorders.

8. The proposal should clearly explain how the projected multidisclipinary integrated program can be expected to accomplish the stated goal more effectively and efficiently than a series of independent individual grant supported studies.

9. Designation of a Program Project Director should be based upon accomplishment, experience as a senior scientist, and ability to assume both leadership of the investigative group and responsibility for scientific, professional, and administrative functions, and commitment to devoting a significant amount of his time to the project. Each project or subproject in the program should have a designated Principal Investigator also with a demonstrable record of accomplishment in clinical immunology, immunopathology, or one of the basic science disciplines or clinical specialties relevant to the particular subject of investigation.

D. Grant Support

Support of an ID program project will be limited to a maximum of five years requiring subsequent submission of a competing application in accordance with provisions of the RFA issuance effective for the renewal year.

Funds have been set aside by the Institute for these awards. Applicants are advised to limit their budget estimates for second year and beyond to the usual cost of living increments. Only those institutions which demonstrate expertise in both basic and clinical science areas and which can direct their resources toward a multidisciplinary attack on mechanisms of immunologic disease can be supported under the provisions of this RFA.

II. METHOD AND CRITERIA FOR REVIEW

A. Letter of Intent

In order to avoid the time and effort of preparing a detailed application which is nonresponsive to the RFA, a "letter of intent" should first be submitted by the prospective Program Project Director.

Letters of intent should briefly describe the following:

1. The intended project;

2. Academic positions and major research and scientific interests of the Program Project Director and professional staff who will be involved in the proposed studies;

3. Ongoing basic and clinical research relating to immunologic diseases, identifying existing projects and sources of support;

4. Past research by members of the proposed investigative group in basic and clinical immunology;

5. Available laboratory facilities;

6. Clinic facilities and patient populations available for use in the proposed studies.

Letters of intent should be submitted as a preliminary to preparing a formal application. Before submitting the actual application there should be consultation with the NIAID Program Officer, Dr. Robert Goldstein.

B. Application Review

Upon receipt, formal proposals will be reviewed by the Division of Research Grants for responsiveness to this request for applications. Applications will be assigned according to the NIH referral guidelines. Those applications assigned to the NIAID will be reviewed by the Allergy and Clinical Immunology Research Committee of NIAID and the National Advisory Allergy and Infectious Diseases Council.

C. Inquiries

Letters and telephone contacts should be directed to:

Robert A. Goldstein, M.D., Ph.D.
Chief, Allergy and Clinical Immunology Branch
Immunology, Allergic, and Immunologic Diseases Program
National Institute of Allergy and Infectious Diseases
Room 752, Westwood Building
National Institutes of Health
Bethesda, Maryland 20014

Telephone: (301) 496-7104

III. METHOD AND CRITERIA FOR APPLYING

A. The Application

For an application to be judged responsive to the program features and scope as set forth above, its details must be consistent with the summary material favorably considered by NIAID in the previously submitted letter of intent.

B. Submission

Before preparing an application, the prospective applicant should request from NIAID program staff a copy of the NIAID Information Brochure on the Program Project Grant which contains appropriate details on the requirements for multidisciplinary grant applications.

The applicant should use the standard research grant application form PHS 398. In addition to following accompanying format instructions for the development of a program project application, expanded material listed above under the six points for the "letter of intent" (see II.A.) should be included. For purposes of identification and processing the words "MECHANISMS OF IMMUNOLOGIC DISEASE PROGRAM PROJECT" should be typed on the face page of the application and a brief covering letter should be attached indicating that submission is in response to this NIAID announcement.

Forward applications directly to:

Division of Research Grants
Room 240, Westwood Building
National Institutes of Health
Bethesda, Maryland 20014

In order to alert NIAID to the submission of the proposal (see II.C.) please forward a copy (not the original) of the cover letter and the application face page to:

Chief, Allergy and Immunology Branch
Immunology, Allergic, and Immunologic
Diseases Program
NIAID
Room 752, Westwood Building
Bethesda, Maryland 20014

and

Chief, Program and Project Review Branch
NIAID
Room 703, Westwood Building
Bethesda, Maryland 20014

C. Receipt Date

In order to be accepted by the Division of Research Grants, completed applications (including an approved human subjects institutional review) must be received no later than June 1, 1979.

REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA

ANNOUNCEMENT

TITLE: *NIGMS SHARED INSTRUMENTATION PROGRAM*

The National Institute of General Medical Sciences announces to its current grantees a one-time competitive program to provide funds for the purchase of new, or the updating of existing, major analytical research instruments which might not be justified fully for a single project, but which could serve several projects on a shared basis. The primary intent is to provide NIGMS grantees with better access to modern instrumentation. A secondary goal is to ensure that new instrumental techniques become widely disseminated among potential users. Access to the equipment provided by this program therefore will not be limited to NIGMS grantees, although the needs of NIGMS grantees will be the primary basis for determining which awards are to be made.

Applications will be accepted for a single deadline of March 15, 1979. No additional competitions are planned.

Support Provided by the Grant

Requests should be for a single analytical instrument or instrument system, or for funds to upgrade an existing instrument. Examples of the kind of instruments which can be provided or upgraded by this program are electron microscopes, fluorescent cell sorters, nuclear magnetic resonance spectrometers, and combined gas chromatograph-mass spectrometers. Excluded from consideration under this program are routine preparative instruments. Requests for general purpose computer facilities also will not be considered. The cost of the equipment requested is expected to fall in the range of $40,000-$150,000. Maintenance costs and support for technical assistance may be provided to a maximum of $15,000 per year for up to three years only. It is expected that at least one half of the costs for technical support personnel be assumed by the applicant institution. No funds for installation or renovation will be provided. The first-year award will be for expenses related directly to the purchase or upgrading of equipment as well as the maintenance support mentioned above. Future year commitments will be for support funds only.

Eligibility

The principal investigator on the application must hold an active NIGMS research grant. This individual must have clearly demonstrated expertise in the use of the type of instrument requested, and must assume responsibility for the equipment and for all related administrative functions. Other named investigators on the application will be members of the core user group (see below). All such individuals must have currently funded NIH research grants. At least one half of the core user group must hold NIGMS research grants.

Preparation

Use form PHS 398, available at your institution, for applying. Across the top of the application face page, write: NIGMS SHARED INSTRUMENTATION PROGRAM. Both a core user group and a potential user group should be identified. The core user group will consist of the principal investigator plus two to four other named investigators. The proposal should identify the specific research projects of these investigators which require the instrument being requested, together with an estimate of the percentage use each will require. It is expected that the core user group will account for at most 75 percent of the instrument use time. The remaining instrument time should be made available to other qualified scientists in the geographical vicinity. The application should document the existence of such a potential user group who would benefit from occasional access to the instrument. The latter investigators need not be NIH grantees.

The justification should state whether similar instruments are available on or near the campus and, if so, why an additional instrument is required. No more than one instrument of any particular kind will be awarded to any single institution or campus.

Up to 50 awards will be made provided enough applications of high quality are received and contingent on the availability of funds. Assurance is required that the equipment will be operated as a shared facility. In addition to progress reports detailing the contribution of the instrument to the research of the core user group, it is expected that a list of outside users and the instrument time made available to them will be submitted annually for a period of three years.

Criteria for Award

The following factors will be considered in the review:

1. Justification of need for the instrument,

2. Scientific merit of the research for which the instrument is required,

3. Expertise of the principal investigator in the use of the instrument,

4. Institutional commitment to help in providing support staff and maintenance,

5. Adequate administrative arrangements for use of the instrument.

Other factors, beyond the scientific review, will affect the award process. NIGMS serves a broad community of investigators in many diverse areas of biomedical research. The awards will not be restricted to some limited areas of instrumentation, so that this program can serve a wide spectrum of NIGMS grantees. In addition, given the goals of this program, some geographical factors will be considered in making the final awards.

For example, NIGMS will avoid placing two or more similar instruments in an area serving the same potential user population. Similarly, the absence of existing facilities will clearly be a factor. With these caveats, the scientific merit of the research projects for which instrumentation is needed will as always be a major consideration.

Prior to submission of applications, contact should be made with:

Dr. Marvin Cassman
National Institute of
General Medical Sciences
National Institutes of Health

Telephone: (301) 496-7463

Receipt and Review

Applications should be sent to:

Division of Research Grants
National Institutes of Health
Room 240, Westwood Building
5333 Westbard Avenue
Bethesda, Maryland 20014

and must be received no later than March 15, 1979, in order to be considered for review.

Review will be arranged by the Division of Research Grants, NIH. Awards will be made in September 1979.

The grant can provide support for certain common resources (cores). Such resources (e.g., laboratory or clinical facilities) should be utilized by two or more projects within the program when such sharing facilitates the total research effort.

4. Grants in support of this research program will be awarded for periods of four years; evaluation of the Research Units to ascertain productivity and accomplishments will be undertaken after completion of the third year to aid the NIAID in making a decision on continuation of the program and in determining possible future directions.

Special Features of the Research Units for Prevention of Infectious Diseases in Infants

In the process of developing basic and clinical research programs for a multidisciplinary approach to the prevention of infectious diseases of neonates and infants, the following specific areas should be emphasized:

1. Develop and improve on existing prophylactic procedures and agents for infectious diseases of infants. This should include the following:

    a. Develop new vaccines and improve upon existing vaccines for use in protection of the infant. For example, currently available bacterial polysaccharide vaccines (meningococcal, H. influenzae, pneumococcal) are largely nonimmunogenic in infants. Studies should be directed toward investigations of alternative antigens or modification of the polysaccharides by such procedures as changing chemical structure, increasing molecular size, or conjugation of the polysaccharide with proteins.

    b. Study the infant immune system in an attempt to determine the reasons for the poor response of children under age two years to certain antigens (see a. above) to which older children and adults respond well. Efforts should be made to understand the basis for the poor response of infants to prophylactic agents and attempts should be made to improve this response. These studies may involve related investigations of the role of the immune system in resistance to and recovery from infectious diseases. In addition to normal infants, attention should be given to infants who are particularly susceptible to infection and who seem to remain more susceptible even as they mature (e.g., premature babies and those with evidence of malnutrition).

    c. Study alternative approaches to protection of the infant other than direct immunization, e.g., through hyperimmunization of the mother, use of antiviral substances, etc.

2. Study the incidence and etiology of neonatal and infant infectious diseases for which there are currently no preventive measures, including disease conditions where there may be a prior infection in the mother (e.g., herpes genitalis, cytomegalovirus, group B streptococcus, toxoplasmosis). These studies will be done to form the basis for the development of preventive measures for these conditions.

Grant Support

Grant funds may be utilized to support the research activities of scientific and professional personnel, administration, consultation services, central support services, equipment, supplies, travel, and publication costs. Support for research related costs of patient involvement and medical care may be authorized. Since the program cannot provide funds for new construction, adequate physical facilities must be available for the primary needs of the Research Unit.

Application Development

NIAID staff will welcome inquiries and the opportunity to discuss this program with prospective applicants. Before preparing an application, prospective applicants should request from NIAID program staff a copy of the NIAID Information Brochure on the Program Project Grant which contains appropriate details on the requirements for multidisciplinary grant applications.

Inquiries and brochure requests should be directed to:

Development and Applications Branch
Microbiology and Infectious Diseases Program
National Institute of Allergy and
Infectious Diseases
National Institutes of Health
Bethesda, Maryland 20014

Telephone: (301) 496-7051 Dr. James C. Hill
Dr. George J. Galasso

Application Requirements

1. The Application - The application must be responsive to the program scope and special features set forth above.

2. Submission - Use the standard research grant application form PHS 398. For purposes of identification and processing, the words RESEARCH UNIT FOR THE PREVENTION OF INFECTIOUS DISEASES IN INFANTS should be typed on the face page of the application and a brief covering letter should be attached indicating submission is in response to this NIAID announcement.

   Forward to: Division of Research Grants
   Room 240, Westwood Building
   National Institutes of Health
   Bethesda, Maryland 20014

   Please forward a copy (not the original) of the cover letter and the application face page to Dr. Hill at the address shown above. This will alert NIAID to the submission of the proposal.

3. Receipt Date - Applications in order to be accepted must be received no later than May 1, 1979.

Application Review

Upon receipt, applications will be reviewed by the Division of Research Grants and NIAID staff for responsiveness to this announcement. Applications judged responsive will be reviewed by the Microbiology and Infectious Diseases Advisory Committee of NIAID and the National Advisory Allergy and Infectious Diseases Council. Those applications not judged responsive to this RFA will be returned to the applicant.

In preparing a program project grant application, the P.I. should include a justification for the appropriateness of that granting mechanism. The following criteria, not necessarily in order of importance, will be considered in evaluation of the application:

- The scientific merit of the program as a whole, as well as that of each individual project. Each project should be supportable on its own merit.

- The significance of the overall program goals and the development of a well defined central research focus.

- The cohesiveness and multidisciplinary or multifaceted scope of the program and the coordination and interrelationships among the individual projects and core(s). The relationship of each core(s) to the central focus of the overall program.

- The justification and usefulness to the various research projects of the core facilities. Each core unit must provide essential facilities or service for two or more approved individual projects.

- The leadership, scientific ability, and administrative competence of the P.I. and his or her commitment and ability to devote substantial time and effort to the program.

- The qualifications, experience, and commitment of the investigators responsible for the individual research projects or core(s) and their contribution to the program, including their ability to devote adequate time and effort to the program.

- The academic and physical environment in which the research will be conducted, including the availability of space, equipment, patients, and the potential for interaction with active scientists from other departments and/or institutions.

- A sound administrative and organizational structure that facilitates attainment of the objectives of the program.

- Arrangements for internal quality control of ongoing research, allocation of funds, day-to-day management, internal communications and cooperation among the investigators involved in the program, contractual agreements, and replacement of the P.I., if required, on an interim or permanent basis.

- The institutional strength, stability, and commitment to research and to the program, including fiscal responsibility and management capability to assist the P.I. and staff in following PHS policy.

- The ethical and hazardous aspects of the project(s).

Funding

The award of a program project grant in the area described will be based upon the availability of funds and publication of this announcement does not commit the NIAID to such an award.

REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA

ANNOUNCEMENT

NATIONAL CANCER INSTITUTE

TITLE: *STUDY AND ANALYSIS OF CANCER CONTROL IMPLICATIONS OF INFORMAL SELF-HELP APPROACHES TO SMOKING CESSATION*

The Division of Cancer Control and Rehabilitation (DCCR) of the National Cancer Institute (NCI) is inviting grant applications from interested investigators for the purpose of studying and analyzing nonformalized self-help approaches to smoking cessation that have been utilized by adults who have succeeded in giving up the use of tobacco and determining the potential value of these approaches in the design of organized cancer control programs.

This type of solicitation (the RFA) is utilized when the Division wishes to stimulate investigator interest in a particular area that is important to the National Cancer Program. The RFA is supported through the customary NIH grant-in-aid and is governed by the policies for investigator-initiated grants. All applications in response to the RFA will be reviewed by an appropriate peer review group in NIH and the National Cancer Advisory Board. Approved applications that receive grant awards will be administered in the same fashion as all NIH grants.

Applications should be prepared in accordance with the aims and requirements which are described in the following sections.

I. PROGRAM SPECIFICATIONS

A. Division of Cancer Control and Rehabilitation

B. Objectives

C. Scope of this Solicitation

D. Mechanism of Support

II. METHOD AND CRITERIA FOR REVIEW

A. Review Procedures

B. Review Criteria

III. METHOD OF APPLYING

A. Deadline

B. Application Format

C. Application Procedure

Due date for applications is March 1, 1979. Questions concerning this announcement should be directed to:

Dr. Ruby Isom
Division of Cancer Control and
Rehabilitation
National Cancer Institute
Room 726, Blair Building
Bethesda, Maryland 20014

Telephone: (301) 427-7298

I. PROGRAM SPECIFICATIONS

A. Division of Cancer Control and Rehabilitation

The Division of Cancer Control and Rehabilitation has the principal Federal responsibility for assuring the rapid and effective application of cancer research findings in the fields of prevention, detection, diagnosis, pretreatment evaluation, treatment, rehabilitation, and continuing care. Its goal is to develop the means for reducing cancer morbidityand mortality.

As part of its responsibilities in the area of cancer prevention, DCCR is undertaking a series of program initiatives designed to facilitate the development of more effective approaches to smoking cessation. The purpose of this RFA is to study and analyze informal self-help approaches to smoking cessation utilized successfully by adults and determining the potential values of these approaches in the design of organized cancer control programs.

B. Objectives

Experimental and epidemiological data have clearly documented the causal relationship between the use of tobacco and an increased risk of cancer. Efforts to educate the public about this risk have succeeded in creating an informed population and reducing the social acceptability of smoking. Consequently, it is estimated that 29 million Americans were motivated to quit smoking between 1964 and 1974. A majority (70-80%) of these individuals apparently were able to stop smoking without the assistance of organized, formalized smoking cessation programs. Very little scientific data are currently available on the complex processes which enabled these individuals to succeed in becoming ex-smokers.

Limited data are available on certain characteristics of this population as compared to recidivists and those who have never stopped smoking (Graham and Gibson, 1971). The "successes", for example, knew more about the health hazards associated with smoking, appeared to have fewer withdrawal symptoms, and were more likely to be suffering from another related health condition. The data also indicated that ex-smokers made fewer attempts to quit smoking prior to doing so than those who did not succeed in giving up

smoking (Schuman, 1971). This RFA would provide for up-dating what data are available on the self-help phenomena while at the same time describing in more detail the various techniques utilized by the successful quitters and the smoking history of quitters vs. recidivists and non-quitters. Although the main focus of this program is on a retrospective study and analysis of self-help approaches, the applicant is encouraged to identify issues related to this area of interest which need to be resolved through prospective studies of this target population.

The objective of this RFA is to generate applications from investigators for the purpose of studying the characteristics of successful non-formalized, self-help approaches to smoking cessation and determining if certain elements of these approaches can be used to construct more effective cancer control programs.

C. Scope of This Solicitation

Applicants should address the following areas although support is not limited to items noted.

1. Review of relevant past and current studies of smoking cessation.

2. Determination of data required for making the study.

3. Development of the project study design, including instruments to be used, procedures to be followed in conducting and validating the study, specification of data items and statistical techniques to be used for selecting samples, collecting and analyzing data, and format for final project report and conclusions.

4. Description of tasks required for meeting project objectives and time schedule for completing each task.

5. Qualifications and experience of principal investigators and project staff.

D. Mechanism of Support

The support mechanism for this program will be the traditional NIH grant-in-aid; successful applicants will plan and execute their own study effort. Although this program is included and provided for in the financial plans for fiscal year 1979, award of grants pursuant to this request for application is contingent upon availability of funds for this purpose.

This program is described in the Catalog of Federal Domestic Assistance, 13.399, and will be supported under the authorizations in the Public Health Service Act, Section 409; Public Law 78-410, as amended; and 42 USC 286c.

II. METHOD AND CRITERIA FOR REVIEW

A. Review Procedures

Upon receipt, applications will be reviewed by the Division of Research Grants (DRG) and the NCI staff for responsiveness to this announcement. If an application is judged unresponsive, the applicant will be given an opportunity to withdraw the application or to submit it for consideration in the traditional grant program of NIH. Applications judged responsive will be reviewed initially for scientific merit by an NIH peer review group and secondly by the National Cancer Advisory Board.

B. Review Criteria

The factors considered in evaluating applications are:

1. Merit of the design, approaches, and methodology;

2. Originality and creativity;

3. Adequacy of existing and proposed facilities and resources;

4. Qualifications and experiences of the principal investigator and proposed staff for the conduct of the proposed investigations;

5. Adequacy of time to be devoted by proposed project staff.

III. METHOD OF APPLICATION

A. Deadline

Applications are due on March 1, 1979. Applications received after this date will be returned to the applicant.

B. Format for Applications

Applications should be submitted on form PHS 398. The conventional presentation for grant applications should be utilized and the points identified under the Review Criteria must be fulfilled. Application forms may be obtained from the institutional application control office or the Division of Research Grants, NIH.

C. Application Procedure

The standard procedures for submitting grant applications to DRG should be followed. A brief letter should accompany the application indicating that it is "IN RESPONSE TO PROGRAM ANNOUNCEMENT - STUDY AND ANALYSIS OF CANCER CONTROL IMPLICATION OF INFORMAL SELF-HELP APPROACHES TO SMOKING CESSATION". The

words "CANCER CONTROL" should be typed in block letters in the upper right-hand corner of the first page of the application. The original and six copies of the application should be sent or delivered to:

Application Receipt
Division of Research Grants
National Institutes of Health
Room 240, Westwood Building
Bethesda, Maryland 20014

A copy of the covering letter should be sent to:

Dr. Ruby N. Isom
Special Assistant for Health Education
Division of Cancer Control
and Rehabilitation
National Cancer Institute
Room 726, Blair Building
Bethesda, Maryland 20014

INVITATION FOR APPLICATIONS TO USE THE PROPHET COMPUTER SYSTEM

ANNOUNCEMENT

The Division of Research Resources invites applications from qualified groups of biomedical research scientists who need the data base management and analytical capabilities of its PROPHET computer system. The PROPHET System is a national computer resource which was initiated - and continues to be developed and managed - by the CBIH Program of the Biotechnology Resources Program, Division of Research Resources, National Institutes of Health.

The PROPHET computer system offers a unique and sophisticated set of tools for table-making, statistical analysis, graphing, curve fitting, mathematical modeling, and molecular modeling. Scientists construct tables into which they enter their data in much the same manner as they would in the familiar laboratory notebook. Tabular data can be corrected, expanded, updated, re-arranged, merged into other tables, reconstructed into new tables, or deleted. Once data has been stored within a table, the data from one or more columns can be sorted, displayed as a graph, fit with an appropriate line or polynomial function (which also can be displayed if desired) and analyzed by a number of statistical programs. The molecular modeling tools enable the user to construct a molecule (by introducing its coordinates on a grpahics tablet), compute a model (using an energy minimization program, and project the model in a 3-D like representation. The mathematical modeling and molecular modeling capabilities of the PROPHET System are particularly useful to those biomedical researchers exploring structure-activity relationships and conducting studies to determine mechanisms of drug action.

The PROPHET computer system assumes that the biomedical researcher is not proficient in computer science. Users address the system using easily remembered England language-like commands in sentence syntax. In most cases, a particular command will initiate an interactive quiz which elicits all of the information necessary to perform a particular job. This reduces the number of commands which the user must remember. User assistance is provided by a hierarchy of mechanisms: a primer, more detailed manuals, regular visits by the technical assistance staff, a 24-hour hot line to the technical assistance staff, and an annual user colloquium. A powerful programming language, PL-PROPHET, exists for the more advanced users, enabling them to create their own program de novo, by linking together existing programs, or by a combination of these two approaches.

Each user site is provided with a graphics display terminal, graphics tablet, and hard copy unit. Access to the central computer is accomplished via a telephone communications network. Users at a particular site or at different sites are able to share data and interact with one another via the computer.

User groups gain access to the PROPHET System by making application to the CBIH Program. The application is reviewed by a peer review group which evaluates each application with respect to (1) the merit of the ongoing biomedical research conducted by the group of applicants, (2) the need for computerized tools, in general, and the specialized tools available on the PROPHET System, in particular; and (3) the ability of the group to contribute to the evaluation of current PROPHET System tools and help initiate development of new tools. Successful applicants receive a graphics display terminal with accessories, and access to the PROPHET Computer System via telephone line. Users are required to partially share the cost of system operation: the minimum cost per site is $7,500 annually. This includes access to the system, and provision of local graphics and communications hardware as well as user assistance. If you require additional information or would like an application form, please write to:

Dr. Jack Hahn
CBIH Program
Biotechnology Resources Program
National Institutes of Health
Room 5B43, Building 31
9000 Rockville Pike
Bethesda, Maryland 20014