

NIH GUIDE

for GRANTS and CONTRACTS

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

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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.

Two types of supplements are published by the respective awarding units. Those printed on yellow paper concern contracts: solicitations of sources and announcement of availability of requests for proposals. Those printed on blue paper concern invitations for grant applications in well-defined scientific areas to accomplish specific program purposes.

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CORRECTION

A Request for Research Grant Applications (RFA) published in Vol. 9, No. 1, of the *NIH Guide for Grants and Contracts* (January 3, 1980) was inadvertently mistitled. The correct title is: Nutritional Status and Nonrespiratory Lung Function (NIH-NHLBI-DLD-80G-C). It had been incorrectly listed as Nutritional Status and Nonrespiratory Lung Infection. The full text of the RFA is reprinted on page 5 of this issue. Please note the application receipt date of March 14, 1980. NIH regrets any confusion or inconvenience caused by this error.

PROHIBITION AGAINST USE OF HEW FUNDS TO PAY
FOR COSTS OF INFLUENCING LEGISLATION



Section 407 of the 1980 Labor-HEW Appropriation Bill (HR 4389) provides that "No part of any appropriation contained in this Act shall be used to pay the salary or expenses of any grant or contract recipient or agent acting for such recipient to engage in any activity designed to influence legislation or appropriations pending before the Congress." Although HR 4389 was not enacted, due to failure of the Senate and House to agree on language relating to Federal funding of abortions, its provisions are incorporated by reference in P.L. 96-123, the Continuing Resolution for Fiscal Year 1980. The Continuing Resolution provides (in Section 102(d)), that funds will be provided "at a rate of operations, and to the extent and in the manner. . ." as provided by the House-passed version of HR 4389. (Emphasis added.) This Continuing Resolution is expected to apply for all of FY 1980.

This provision means that the costs associated with activities to influence legislation pending before the Congress (commonly referred to as "lobbying") are unallowable as charges to HEW grants and contracts. The provision became effective upon the enactment of the 1980 Continuing Resolution on November 20, 1979, and is applicable to all HEW grants and contracts awarded from funds appropriated pursuant to that law. It should be noted, however, that even without this legal prohibition, the costs of lobbying activities would normally be unallowable since such costs generally do not benefit the work performed under HEW grants and contracts.

INFORMATION ITEM: VIOLATION OF GRANT FUNDS

A principal investigator on several NIH grants recently was found guilty in Federal court of violating Federal criminal law by illegally diverting grant funds to his own use. The court imposed the maximum fine permitted by law, \$4,000, and also placed the scientist on probation for six months. This incident underscores the fact that individual employees of the grantees may be held personally accountable to the Government in appropriate cases, although the grantee institution is ultimately responsible to the Government for the proper management of grant funds.

NATIONAL EYE INSTITUTE
ACADEMIC INVESTIGATOR AWARD TO BE INCLUDED IN
NEW INVESTIGATOR RESEARCH AWARD PROGRAM

NOTICE
(FOR CLARIFICATION)

The National Eye Institute (NEI) will use the New Investigator Research Award (NIRA), described in the *NIH Guide for Grants and Contracts*, Vol. 9, No. 1, January 3, 1980, to replace both the NEI's Special Visual Science Award and the NEI's Academic Investigator Award.

REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA

ANNOUNCEMENT

NIH-NHLBI-DLD-80G-C

NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

TITLE: *NUTRITIONAL STATUS AND NONRESPIRATORY LUNG FUNCTION*

Application receipt date, March 14, 1980

I. BACKGROUND

A systematic approach to the study of nutritional effects on the lung is an essential step toward determining the role of nutrition in the etiology, pathogenesis and management of pulmonary disease. The effects of nutrition have not been studied as extensively in the lung as in other organs such as liver, muscle, brain and bone.

Animal studies indicate that ultrastructural characteristics, mechanical properties, and metabolic activities of the lung may be altered by starvation or markedly reduced food consumption. For instance, the changes in lung mechanical properties which have been observed following food deprivation are believed to be due to alterations in both surface forces and tissue elastic forces. Studies have been reported which suggest that lung surfactant metabolism is altered following food deprivation, but the mechanisms involved are not understood. Moreover, little information is available on the turnover or metabolism of lung connective tissue components following food deprivation. Diets deficient in essential fatty acids and vitamin A seem to lead to biochemical changes in lung tissue, but little is known about the processes involved in these changes. Our understanding of the influence of nutrition on lung function during stress is also rather limited. This is unfortunate as inadequate nutrition could have adverse effects on lung function in situations where it is already compromised, for example, during exposure to oxidants.

More information is needed about how nutritional status alters lung defense functions. It is known that acute starvation may depress the rate of bacterial clearance by alveolar macrophages in rats, but the nature of underlying mechanisms remains to be determined. Moreover, the extent to which ciliary activity and mucociliary transport are altered by changes in nutritional state is not known. Whether dietary antioxidants such as vitamin E protect the lung against oxidant injury is another question that needs to be investigated further.

This program is described in the Catalog of Federal Domestic Assistance number 13.838. Grants will be awarded under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended; 42 USC 241) and administered under PHS grant policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74.

II. GOALS AND SCOPE

The specific goal of this program is to encourage research in animals to elucidate the mechanisms by which nonrespiratory functions of normal mature lungs are influenced by nutritional status. Other lung functions, i.e. lung mechanics, may be studied if the intent is to correlate them with nonrespiratory functions, but major emphasis must be on the latter. Multidisciplinary approaches involving expertise in biochemical nutrition and in lung nonrespiratory functions are encouraged. Nutritional states to be studied may include calorie or protein undernutrition, essential fatty acid deficiency, and supplementation to documented nutritional deficiencies. The studies must be designed to test a specific hypothesis and the choice of a particular nutritional aspect for study must be based on a clear rationale. Studies which are not designed to test a specific hypothesis, or which are merely designed to test a random selection of diets or nutritional deficiencies will not be considered responsive to this announcement. Isolated lung cells or tissues may be studied to the extent needed to investigate a particular nutritional state in the intact animal, but studies aimed at elucidating nutritional requirements for lung cells or tissue cultures are not acceptable.

Nonrespiratory lung functions such as protein synthesis and degradation, including collagen and elastin, lipid metabolism, DNA and RNA content, alteration in enzymes participating in lung defense and energy metabolism exemplify areas of research that will be supported under this announcement. Studies which attempt to correlate observed changes with morphologic alterations are encouraged. Studies on lung defense mechanisms such as ciliary activity, phagocytosis and bacterial clearance by alveolar macrophages are also acceptable. Immunologic defense functions of the lung may be included, but proposals with main emphasis on specific immune responses will not be acceptable. Studies on developing lung will not be supported under this announcement; neither will epidemiological studies, clinical trials, and other clinical studies.

The research topics presented below are intended to provide examples of research areas that would meet the goals of this program. Investigators are encouraged to consider other relevant topics and approaches that would lead to an understanding of how nonrespiratory functions of mature lung are influenced by nutritional status, and the mechanisms underlying such influences.

A. Lung Connective Tissue Metabolism

While it has been reported that caloric deprivation influences lung pressure-volume characteristics by altering both surface forces and tissue elasticity, the cause of these changes is not understood. Information on the effects of nutrition on lung connective tissue is, in particular, very limited. It is not known, for example, if the changes in lung elasticity and morphology observed during food deprivation are related to substrate deficiencies, enzymatic changes, altered turnover rates of elastin or collagen or changes in the ratios of different collagen types.

It also is not known if the changes are totally or partially reversible. Studies suggest that ascorbic acid deficiency results in the under-hydroxylation of collagen and reduces collagen secretion. However, the exact role of ascorbic acid in lung connective tissue biosynthesis is not known.

B. Lung Defense Functions

Animal studies have demonstrated that impairment of alveolar macrophage function may occur during starvation. However, the mechanism of the alteration in macrophage activity is not known. Whether or not these changes are reversed by subsequent refeeding is also not clear. It is not known if nutritional status can alter bacterial colonization of the respiratory tract. There is some evidence to suggest that an increase in the saturated fatty acid content of lung triglycerides through dietary manipulation results in increased susceptibility to oxidants. However, it is not known if increasing dietary unsaturated fatty acids can counteract the toxic effects of oxidants. While deficiency of vitamin E appears to enhance the toxic effects of oxidants, it also is not clear if vitamin E can protect against oxidant-induced lung damage.

C. Lung Lipid Metabolism

While it is known that food deprivation decreases the amount of dipalmitoyl phosphatidylcholine, a major component of lung surfactant, our understanding of how these changes occur and what their consequences are is still not complete. Systematic investigations of key substrate requirements for lung lipid synthesis in normal lung are of interest.

III. 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 Lung Diseases will sponsor periodic workshops 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 1980, award of grants pursuant to this request for grant applications is contingent upon ultimate receipt of appropriate funds for this purpose. It is anticipated that a limited number of proposals (more than one but not more than four to six) will be awarded under this program. 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 5 years. At the end of the project period, renewal proposals may be submitted for competitive review. A project period start date of September 30, 1980 is anticipated.

The current policies and requirements which govern the research grant programs of the National Institutes of Health will prevail, including the requirement for cost sharing.

IV. REVIEW PROCEDURES AND CRITERIA

Upon receipt, applications will be reviewed for their responsiveness to the specific objectives described in this announcement. If an application is received after the March 14, 1980 deadline or is judged unresponsive, the applicant will be contacted and given an opportunity to withdraw the application or to submit it for consideration in the traditional grant program of NIH. Initial technical merit review will be arranged by the Division of Research Grants (DRG). Secondary review will be undertaken by the National Heart, Lung, and Blood Advisory Council.

If a proposal submitted in response to this RFA is identical to one already submitted to NIH for review, the applicant will be asked to withdraw the pending application before the new one is accepted. Simultaneous submission of identical applications will not be allowed.

The factors considered in the scientific merit evaluation of each application will be identical to those used in traditional NIH research grant application evaluation, including 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.

V. METHOD OF APPLYING

1. Letter of Intent

Prospective applicants are asked to submit a one-page letter of intent which includes a very brief synopsis of proposed areas of research and identification of any other participating institutions. This letter should be sent no later than January 15, 1980 to:

Dr. Dorothy Berlin Gail
Division of Lung Diseases
Room 6A10, Westwood Building
National Institutes of Health
5333 Westbard Avenue
Bethesda, Maryland 20205

The Institute requests such letters only to provide an indication of the number and scope of applications to be received. A letter of intent is not binding; it will not enter into the review of any proposal subsequently submitted nor is it a necessary requirement for application.

2. Format of Applications

Applications should be submitted on form PHS-398, the application form for the traditional research grant which may be obtained at Institution business or research offices. If form 398 is not available at the institution, it may be obtained by contacting:

Division of Research Grants
Room 449, Westwood Building
National Institutes of Health
Bethesda, Maryland 20205

Telephone: (301) 496-7591

The conventional presentation in format and detail for regular research grant applications should be utilized. Specific attention is directed towards the inclusion of a statement indicating the willingness of the applicant to work cooperatively with other participants in the program and with the National Heart, Lung, and Blood Institute.

3. Application Procedure

The completed application and six (6) copies should be sent or delivered to:

Division of Research Grants
National Institutes of Health
Room 240, Westwood Building
5333 Westbard Avenue
Bethesda, Maryland 20205

To ensure their review, applications must be received by 5:00 p.m. EST on March 14, 1980.

The face page of the application must be labeled to indicated that it is submitted in response to this program announcement: RFA-NHLBI-DLD-80G-C "NUTRITIONAL STATUS AND NONRESPIRATORY LUNG FUNCTION."

VI. Inquiries may be directed to:

Dr. Dorothy Berlin Gail
Division of Lung Diseases
National Heart, Lung, and Blood Institute
Room 6A03, Westwood Building
Bethesda, Maryland 20205

Telephone: (301) 496-7171

BIOBEHAVIORAL APPROACHES TO THE TREATMENT
OF HYPERTENSION, NHLBI

The Behavioral Medicine Branch of the National Heart, Lung, and Blood Institute wishes to encourage clinical research projects dealing with evaluation of combinations of pharmacologic and non-pharmacologic therapies in the treatment of patients with diagnosed essential hypertension and requests investigators to consider applying for regular research grant support in this area.

Pharmacologic antihypertensive therapy has been particularly effective in reducing blood pressure in severely and moderately hypertensive patients. Lifetime maintenance of lowered blood pressure by pharmacologic means has proven particularly nettlesome, with long term (five year) compliance with drug regimes estimated to be less than 20% of the target population. Short term side effects, cost and the unknown long-term implications of lifetime drug regimens have been major contributors to the compliance problem.

Exercise, diet, relaxation techniques, biofeedback, meditation, psychotherapy, as examples of non-pharmacologic approaches, have been less effective in lowering blood pressure than pharmacologic agents, but pilot studies have demonstrated their potential utility in maintaining pharmacologically lowered pressure. Medication requirements have been significantly reduced or completely eliminated by such procedures. Apparently, the combinations of pharmacologic and non-pharmacologic therapies may also produce a synergistic effect, i.e., the non-pharmacologic techniques may potentiate the effect of the drugs. The above issues need further exploration in well-controlled studies which can assess the efficacy and preferred configuration of "biobehavioral" approaches to the treatment of hypertension.

This is the first of three announcements of this research interest to be made during the coming year prior to the regular application receipt dates of March 1, 1980; July 1, 1980; and November 1, 1980. Applications should be made in the usual manner (except for the two items noted below), and the regular review procedure will be followed. The Institute staff understands that most investigators will have difficulty responding under short notice to the March 1, 1980 deadline; applications received after that date will be held for the next review cycle.

Individuals who submit proposals in response to this announcement are asked to:

This program is described in the Catalog of Federal Domestic Assistance number 13.837. Awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended; 42 USC 241) and administered under PHS grant policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74.

1. Use the STANDARD TITLE: "Biobehavioral Approaches to the Treatment of Hypertension" and mail the completed PHS 398 form directly to the Division of Research Grants as instructed in the application kit; and
2. Submit a brief LETTER OF INTENT stating that such an application has been, or will be, submitted. The letter should be addressed to:

Behavioral Medicine Branch
National Heart, Lung, and Blood Institute
National Institutes of Health
Room 3A-13, Federal Building
Bethesda, Maryland 20205

Questions about this announcement should be directed to the Behavioral Medicine Branch; telephone (301) 496-9380.

GRANTS ASSOCIATES PROGRAM

PUBLIC HEALTH SERVICE

Scientists interested in an administrative career with Federal programs supporting research, training, and services in health-related fields may wish to consider the Grants Associates Program of the U.S. Public Health Service. The program is governed by the Grants Associates Board and is administered by the Division of Research Grants, National Institutes of Health.

The program prepares each Grants Associate for a responsible position in health science administration in the Federal government. For a 12-month period, the Grants Associate participates in an individually structured training experience including on the job assignments, courses, and seminars. The program provides opportunities for participation in the development and administration of policies in Federal support of health related research, and in the fundamentals of effective management. The program also attempts to develop a sensitivity to the consequences of program decisions on other Federal health programs, research institutions, and national health needs.

Admission to the program is highly competitive for the few positions available. Motivation for a career in science administration, good interpersonal skills, and evidence of executive potential are important. If you are a U.S. citizen and hold a doctorate or equivalent in a discipline related to the biomedical or behavioral sciences, have significant independent research experience beyond the doctorate (but need not have administrative experience) and are attracted to health science administration as a profession, you should inquire about the Grants Associates Program.

Grants Associates may be appointed either in the U.S. Civil Service at grade levels General Schedule (GS) 12 (\$24,703), GS-13 (\$29,375), or GS-14 (\$34,713) or in the Commissioned Corps of the U.S. Public Health Service at ranks beginning with senior grade (O3 Lieutenant, salary dependent on prior military experience, but beginning at \$16,905).

The National Institutes of Health does not discriminate in employment on grounds of race, color, sex, national origin, age, or handicap.

For further information, write to:

Executive Secretary
Office of Grants Associates
Division of Research Grants
Room 1A-10-Z, Building 31
National Institutes of Health
Bethesda, Maryland 20205

NATIONAL RESEARCH SERVICE AWARD (NRSA)
NON-TRAINEE EXPENSES - INSTITUTIONAL ALLOWANCES:
ADJUSTMENT FOR NEW AND COMPETING AWARDS MADE
AFTER JULY 1, 1980

REVISED
NOTICE
(FOR CLARIFICATION)

A. Institutional NRSA Training Grants

The policy which limits support of non-trainee expenses to 25% of the total anticipated award has been modified. The maximum amount which can be requested is now based on a calculation which may provide up to \$3,000 per year for each predoctoral trainee and \$5,000 per year for each postdoctoral trainee. This is not an automatic allowance. It represents the maximum allowable direct cost for essential support costs to the training program. Indirect cost may also be requested at 8% of total allowable direct cost or actual rate, whichever is less. Calculations of trainee costs, e.g. stipends, tuition and fees, are not considered part of the institutional cost and are not affected by this change.

B. Individual Postdoctoral NRSA Fellowships

1. Postdoctoral Awards - Non-Federal Institutions

An institution may request funds of up to \$5,000 per 12-month period to the non-Federal sponsoring institution to help defray such awardee expenses as tuition and fees, appropriate health insurance, research supplies, equipment, travel to scientific meetings and related items. The allowance is under control of the sponsoring institution.

2. Postdoctoral Awards - Federal Institutions

An allowance of up to \$2,000 is available for the individual sponsored by a Federal laboratory for scientific meetings, travel expenses, appropriate health insurance, tuition and fees.

C. Senior Fellowship Awards: Allowances for the Senior Fellowship Awards are treated in the same manner as those for individual postdoctoral NRSA awards.

The new allowances are to be used in the preparation of all future NRSA applications. No retroactive adjustments will be made. Training program directors and individual NRSA awardees will be contacted by the awarding Institute as soon as implementation procedures have been completed.

Application forms and detailed instructions specific to this program should be requested from:

Office of Grants Inquiries
Division of Research Grants
National Institutes of Health
Bethesda, Maryland 20205

Telephone: (301) 496-7441

GRANTS FOR RESEARCH AND DEMONSTRATIONS RELATING
TO OCCUPATIONAL SAFETY AND HEALTH

ANNOUNCEMENT

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

Application receipt dates: March 1, July 1, and November 1

The National Institute for Occupational Safety and Health (NIOSH) announces that competitive grant applications are being accepted for research and demonstrations relating to occupational safety and health including innovative methods, techniques, and approaches for dealing with occupational safety and health problems. The Institute staff understands that most investigators will have difficulty responding under short notice to the March 1 deadline; applications received after that date will be held for the next review cycle.

This support is in the form of project grants not exceeding 5 years.

AUTHORITY

These grants will be awarded and administered by NIOSH under the research and demonstration grant authority of Section 20(a)(1) of the Occupational Safety and Health Act of 1970 (29 USC 669(a)(1)). Program regulations applicable to these grants are contained in Part 87 of Title 42, Code of Federal Regulations, "Research and Demonstration Grants Pertaining to Occupational Safety and Health." Except as otherwise indicated, the basic grant administration policies of the Public Health Service are applicable to this program. This program is not subject to OMB Circular A-95. The Catalog of Federal Domestic Assistance number is 13.262.

ELIGIBLE APPLICANTS

Eligible applicants may be universities, colleges, research institutions and other public and private nonprofit organizations including State and local governments.

PROGRAM REQUIREMENTS

A research grant application should address the establishment, discovery, development, elucidation or confirmation of information on the underlying mechanisms relating to occupational safety or health, including innovative methods, techniques, and approaches for dealing with occupational safety and health problems.

A demonstration grant application should address, either on a pilot or full-scale basis, the technical or economic feasibility or application of: (1) a new or improved occupational safety or health procedure, method, technique, or system; or (2) an innovative method, technique, or approach for dealing with occupational safety or health problems.

Particular emphasis is placed on: 1) causes and prevention of the following occupational diseases or disorders: skin, neurologic, respiratory, cardiovascular, digestive and reproductive; 2) control technology including asbestos and asbestos substitutes; 3) behavioral and motivational factors; 4) safety and injury prevention including musculoskeletal and back disorders; and 5) emerging problems particularly energy/radiation and sidestream smoking.

Of these, immediate emphasis will be given to: 1) energy; 2) occupational skin disorders; 3) reproductive effects; 4) control technology; and 5) safety. The available funds may be supplemented beyond the projected Fiscal Year 1980 budget of \$6.4 million for special programs in these areas.

CRITERIA FOR REVIEW

Applications will be reviewed by an appropriate peer review group on the basis of scientific merit, including 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.

Demonstration grant applications will be reviewed additionally on the basis of the following criteria:

1. Degree to which project objectives are clearly established, obtainable, and for which progress toward attainment can and will be measured.
2. Availability, adequacy and competence of personnel, facilities, and other resources needed to carry out the project.
3. Degree to which the project can be expected to yield or demonstrate results that will be useful and desirable on a national or regional basis.
4. The substantive merit and potential contribution of the project toward developing knowledge and techniques for meeting the objectives of the Occupational Safety and Health Act.
5. Extent of and expected cooperation of industry, unions, or other participants in the project, where applicable.

APPLICATION AND AWARD

Applications should be submitted on form PHS-398. Forms should be available from the institutional business offices or from the addresses listed below. The conventional presentation for grant applications should be utilized and information relative to the points identified under Criteria for Review must be provided.

An 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 20205

The name of the applicant institution, principal investigator, and title of the proposed project should be sent to NIOSH at:

Grants Administration and Review Branch, OECSP
National Institute for Occupational
Safety and Health
Room 8-63, Parklawn Building
5600 Fishers Lane
Rockville, Maryland 20857

The proposed timetable for receiving applications and awarding grants is as follows:

<u>Application Deadline</u>	<u>Review Group Meeting Date</u>	<u>Expected Start Date</u>
March 1	June	December 1
July 1	Oct/Nov	April 1
November 1	Feb/March	July 1

Applications received after the deadline date will be considered with the applications received for the following deadline date.

Awards will be made based on priority score ranking and emphasis area, as well as availability of funds.

AVAILABILITY OF FUNDS

The project Fiscal Year 1980 research grants budget is \$6.4 million. Grantees will be expected to cost share a minimum of five percent.

FOR FURTHER INFORMATION CONTACT:

Mr. Joseph W. West
Grants Management Officer
National Institute for Occupational
Safety and Health
Room 8-35, Parklawn Building
5600 Fishers Lane
Rockville, Maryland 20857

Telephone: (301) 443-3122

or

Mr. Roger A. Nelson
Research Grants Program Officer
National Institute for Occupational
Safety and Health
Room 8-35, Parklawn Building
5600 Fishers Lane
Rockville, Maryland 20857

Telephone: (301) 443-4496

OCCUPATIONAL CUTANEOUS HAZARDS AND DISEASES

OFFICE OF EXTRAMURAL COORDINATION AND SPECIAL PROJECTS,
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH,
CENTER FOR DISEASE CONTROL

ANNOUNCEMENT

Application receipt dates: March 1, July 1, and November 1

The National Institute for Occupational Safety and Health (NIOSH) announces exciting new opportunities for dermatologic researchers. NIOSH is currently inviting research and demonstration grants which will study a variety of issues and problems surrounding occupational cutaneous hazards and diseases. The Institute anticipates that studies generated as a result of this Program Announcement will help support NIOSH's mission to reduce the incidence and prevalence of occupationally-related skin disorders. The Institute staff understands that investigators may have difficulty responding to the March 1 date under short notice. Applications received after that date will be held for the next review cycle.

BACKGROUND INFORMATION

The most pervasive current occupational health problem in the United States is widespread, debilitating, work-related skin disorders. More people suffer from occupational skin disorders than any other single category of occupational disease in America. The Bureau of Labor Statistics (BLS) has reported that skin diseases and disorders have accounted for more than 40 percent of all reported occupational diseases in recent years. Moreover, inadequate reporting masks the true incidence, which is suspected to be from 10 to 15 times greater than reported in the BLS data. Today, it is generally accepted that these disorders impose a serious personal and economic burden in terms of lost production, lost wages, increased medical costs, family disruption, personal discomfort and ill health.

Intensive scientific investigation is needed in a number of scientific and technological areas relative to workplace skin hazards. This Program Announcement identifies the present scope of NIOSH's interest in these problems. NIOSH is the principal federal organization responsible for research under the Occupational Safety and Health Act. The Institute is responsible for identifying occupational hazards and for recommending standards and approaches to limit them. Research sponsored by NIOSH offers an early step toward the development of standards which will have a far-reaching impact on the elimination or otherwise mitigation of cutaneous hazards in the workplace.

RESEARCH GOALS AND SCOPE

The goal of this announcement is to encourage high quality research and demonstration grants in specific domains.

DATA SYSTEMS RESEARCH

Projects to identify the potential *extent* and *social impact* of occupational skin disease -

- Develop a unified data collecting system that will properly identify high risk industries, processes, and agents. The system should possess: (1) a process-specific classification; (2) a specific hazardous substance file; (3) a specific hazardous physical process file; and (4) a system for correlating 1, 2, and 3.

BIOCHEMICAL AND PHYSIOLOGICAL RESEARCH

Studies to elucidate the *nature* of occupational skin disease -

- Develop new models for studying percutaneous absorption and estimating systemic uptake. These models should focus and elucidate the biochemical and physiological aspects of penetration as they may be affected by hydration, organic solvents, age, and by the physiochemical characteristics of the penetrant.
- Elucidate the structural (cellular) and biochemical aspects of non-allergic inflammatory reactions (direct irritation).
- Determine differences in pathophysiologic patterns as influenced by molecular characteristics of the irritant, rates of penetration, metabolism, lysosomal and kinin activities. These characteristics should be correlated with irritant capacity and type of irritant damage.
- Examine the action of marginal irritants on cell organelles.
- Determine the cellular and biochemical, or metabolic factors associated with the "turning off" of the inflammatory response on continued exposure.
- Determine the long-term cutaneous effect of polychlorinated biphenyls and dioxins in humans.
- Determine the biologic mechanisms involved in the pathogenesis of adverse skin effects of acnegenic agents, such as PCBs, dioxins, and dibenzofurans. Attention should be given to the action of such agents and metabolites on sebaceous cells, on keratinocytes, on lipid metabolism, on cutaneous flora which produce lipolytic enzymes, on endocrine activity (including direct or indirect androgenic effects), and on pigmentation and its relation to porphyrin metabolism and ultraviolet radiation reactivity.

EPIDEMIOLOGICAL RESEARCH

Studies which consider the *epidemiology* of occupational cutaneous diseases -

- Determine the long-term cutaneous effect of polychlorinated biphenyls and dioxins in humans.
- Determine the chronic effects, particularly those relating to skin, of exposure of workers and their families to 2, 3, 7, 8, tetrachlorodibenzodioxin in the last thirty years.
- Examine the dermatological manifestations of other occupational illnesses.
- Determine systemic manifestations (acute and chronic) of toxic substances absorbed through the skin.

TEST METHODOLOGY RESEARCH

Projects to improve *test methodologies* and facilitate early *identification* of cutaneous hazards -

- Appraise current methods for predicting cutaneous hazards and develop new methods for assessing adverse effects, other than contact dermatitis or photosensitization, such as detection of marginal irritants, acnegenic substances, granulomatous agents, and pigment altering substances.
- Develop research methodologies, including non-biological screening techniques, to determine the potential cutaneous hazards of all existing and new commercial substances, processes and agents.

CONTROL TECHNOLOGY RESEARCH

Studies to develop new and improved *methods* to prevent occupational skin disease -

- Develop new or improved methods to prevent skin penetration by specific types of compounds.
- Adapt existing methods, as well as develop new methods, of monitoring and controlling cutaneous hazards in the workplace.
- Seek to use innovative approaches, such as alternative materials, engineering controls, process modification, and protective equipment to prevent occupational skin disease problems already identified, and to solve emerging problems.

HEALTH EDUCATION RESEARCH

Projects to increase *awareness* of the importance of occupational skin diseases -

- Develop education and training programs for health professionals, workers, and management to increase their awareness of occupational skin diseases.

MECHANISM OF SUPPORT

Up to \$2,000,000 over a three year period will be made available for new grant applications in the area of occupational skin diseases.

The traditional grant-in-aid mechanism will be used to support grants pursuant to this Program Announcement.

Nonprofit organizations and institutions, State and local governments and their agencies, are eligible to apply.

Grants may be supported for up to three years, and may be renewed for an additional period, subject to the competitive review procedure and availability of funds. A starting date as early as August 1, 1980, may be requested for applications submitted for the March 1, 1980 deadline.

Awards will be made based on priority score ranking, as well as availability of funds for this Program.

Grantees will be required to cost share a minimum of five percent.

Grants will be made under the legislative authorization in Section 20(a)(1) of the Occupational Safety and Health Act of 1970 (29 USC 669(a)(1)), Public Law 91-596. The Catalogue of Federal Domestic Assistance number is 13.262.

REVIEW PROCEDURES AND CRITERIA

Review of applications responsive to this Program Announcement will be arranged by the Division of Research Grants, NIH. Factors considered in evaluating applications include:

- adequacy and appropriateness of the approach;
- training experience, and research competence, or promise, of the investigator(s);
- adequacy of the research design;
- suitability of the facilities;
- appropriateness of the requested budget relative to the work proposed.

Applications responsive to this Program Announcement are not subject to OMB Circular A-95 Clearinghouse and/or Health Systems Agency review.

Proposals considered to be non-responsive to the terms outlined in this Program Announcement will be appropriately reassigned for review or returned to the investigator, as indicated. Returned proposals may be revised and resubmitted.

METHOD OF APPLYING

Applications should be submitted on a form PHS 398. Application kits may be obtained from institutional application control offices or from:

Office of Grants Inquiries
Division of Research Grants
National Institutes of Health
Room 448, Westwood Building
Bethesda, Maryland 20205

Telephone: (301) 496-7441

Care should be taken in following the instructions included with the application form making certain to fulfill the points identified under the heading "REVIEW CRITERIA." In the upper left hand corner of the face page under the words "GRANT APPLICATION" the application must be labelled "IN RESPONSE TO PROGRAM ANNOUNCEMENT: (CDC-NIOSH-OECSP-80-1)."

An original and six copies must be received no later than: March 1, July 1, and November 1, as applicable. Applications received after the designated deadline will be considered with the applications received for the following deadline. Completed applications must be sent or delivered to:

Application Receipt
Division of Research Grants
National Institutes of Health
Room 240, Westwood Building
Bethesda, Maryland 20205

Label the outside of the mailing package:
"RESPONSE TO PROGRAM ANNOUNCEMENT, (CDC-NIOSH-OECSP-80-1)."

A brief covering letter must accompany the application indicating that it is submitted in response to this program announcement. A carbon copy of this covering letter along with an additional copy of the application should be sent to the Research Grants Program Officer (see below).

IDENTIFICATION OF CONTACT POINT

Questions related to this announcement should be addressed to:

Mr. Roger A. Nelson
Research Grants Program Officer
National Institute for Occupational
Safety and Health
Room 8-63, Parklawn Building
5600 Fishers Lane
Rockville, Maryland 20857

Telephone: (301) 443-4493

Mr. Joseph West
Grants Management Officer
National Institute for Occupational
Safety and Health
Room 8-35, Parklawn Building
5600 Fishers Lane
Rockville, Maryland 20857

Telephone: (301) 443-3122

REFERENCES

Selected Bibliography

- U.S. Department of Health, Education, and Welfare, National Institute for Occupational Safety and Health. Report of Occupational Skin Disease. Unpublished report prepared for the U.S. Senate Appropriations Committee, 1979.
- U.S. Department of Labor, Occupational Safety and Health Administration. Report of the Advisory Committee on Cutaneous Hazards. Unpublished report prepared for the Assistant Secretary of Labor, OSHA, 1978.
- Wang, C.L. The Problem of Skin Disease in Industry. Office of Occupational Safety and Health Statistics, U.S. Department of Labor, 1978.

DEVELOPMENTAL ASPECTS OF BEHAVIOR AND NUTRITION

NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT



The National Institute of Child Health and Human Development invites applications for research projects on developmental aspects of behavior and nutrition.

INTRODUCTION

The National Institute of Child Health and Human Development (NICHD) has initiated a program to stimulate more interdisciplinary research at the interface of behavior and nutrition. There are a number of research issues concerning behavioral development and child-rearing practices that should be amenable to study within the context of nutritional science. Some phenomena that demonstrate the interaction of behavior and nutrition have been well described, such as attentional deficits in undernourished children or cultural differences in food preferences.

Because food choices can be quantified, they can serve as clearly defined outcome measures in the study of developmental processes during infancy, childhood, and adolescence. For example, studies of modeling and child-rearing practices might include measurements of the development of food preferences in children in order to learn more about cultural transmission of values and behavior. Similarly, studies of cognitive development among adolescents could make use of food selection as an outcome variable.

Little is currently known about the behavioral and cultural factors that determine food choices and aversions during pregnancy and the early phases of life. It appears that foods are rarely consumed strictly for their nutritive value alone; rather, social, cultural, and religious values of food predominate in determining ingestive behavior. These behavioral aspects of nutrition should be amenable to study by using the methodologies of disciplines such as psychology, sociology, history and anthropology.

I. PROGRAM SPECIFICATIONS

A. Program Objectives

The objective of this program announcement is to encourage and stimulate research on the interactions among behavior, culture and nutrition during human development. Interdisciplinary studies developed by behavioral and biomedical scientists are particularly encouraged.

B. Research Scope

This program announcement emphasizes research that lies at the interface between the behavioral and the nutritional sciences, particularly in regard to human development. Of special interest are studies on the

determinants of food selection and aversion and studies on the determinants and controls of food intake at critical stages of the life cycle, during pregnancy, infancy, childhood, and adolescence. Such studies may range from investigations of neurochemical determinants of these behaviors to analyses of historical, geographical, evolutionary, cultural and psychological factors that influence these ingestive behaviors.

Some areas of research interest are listed below. They are not presented in order of priority and serve as examples only. Other topics of behavioral research in nutrition and development may occur to the applicant which would be equally welcome.

Pregnancy

- Because an expectant mother must meet all of the nutrient demands of her rapidly growing fetus, the importance of good nutrition during pregnancy cannot be overestimated. However, in situations where prenatal counseling and care are similar, wide differences in weight gain can be observed. Research is needed to identify the behavioral, cultural and nutritional factors that underlie these differences, particularly in the pregnant adolescent.
- Pica, most notably the eating of clay, ice, and starch, appears to be common among pregnant women belonging to certain racial and ethnic groups. Studies of the prevalence of various kinds of pica during pregnancy and their nutritional impact, if any, on mother and fetus would be of interest.
- More widespread than pica during pregnancy appears to be the sudden onset of cravings for specific foods or odd combinations of foods, as well as strong aversions to certain foods. The prevalence and characterization of these cravings and aversions have not been widely studied, nor has their nutritional impact. The acute onset and the time-limited nature of these alterations of ingestive behavior present opportunities for research on the developmental aspects of the psychology and the psychophysics of taste and on alterations of food preference and dietary habits. It would be important to know if these cravings and aversions are nutrient-specific or, instead, reflect changes in hedonic responses to certain flavors or combinations of flavors. Also of interest is whether these dietary changes during pregnancy affect dietary behavior after parturition.

Infancy

The behavioral components of suckling, weaning, and infant feeding in general have only begun to be studied in a rigorous manner. Much remains to be learned about the psychological factors and the cerebral mechanisms that initiate and control these behaviors. It would be of importance to explore the ontogeny of feeding and drinking controls in the human infant, as well as the development of taste responses and of behavioral

and physiologic mechanisms for food preference and rejection. Studies of variation in the development of these behaviors among ethnic and racial groups would also be of interest.

In addition to studies on suckling behavior of the infant, nutritionally-oriented behavioral studies are encouraged on the mother-infant dyad, both nursing and non-nursing pairs. Examples of research questions or needs in this area are:

- How does the infant's behavior affect maternal lactation, nursing, or feeding behavior?
- What behavioral and nutritional effects do mothers' feeding strategies have on their infants?
- A detailed description or ethnogram is needed of normal suckling and feeding throughout the developmental period to provide clinicians with normative data against which to evaluate disorders of feeding.
- Almost nothing is known about either the motivations for or the mechanisms of weaning and how they vary among and within ethnic, racial and socioeconomic groups. Rigorous epidemiological and psychological studies of weaning and of the signals that pass between mother and infant are encouraged.

Childhood

The appearance in some children of pronounced food aversions leads to the rejection of all but a narrow range of food. If this restricted eating pattern continues for prolonged periods of time, such children fall behind their genetic potential for linear growth. The origins of such food avoidances are unknown. Moreover, the normal process of the acquisition of food preferences and avoidances remains, for the most part, unexplored. Descriptions of modeling and other child-rearing practices that transmit cultural patterns of eating behavior from one generation to another would therefore be of particular interest. Because so much of what is edible in the world goes uneaten for psychological or for cultural reasons, a better understanding of the acquisition of a child's conception of food and nutrition is crucial to the health of individuals as well as to that of entire populations. The phenomenon of pica in children, for example, needs further study from behavioral, epidemiological and nutritional points of view.

Behind the expression of all ingestive behavior lies the neurophysiology and neurochemistry of hunger and satiety. Important observations on the effect of nutrient intake on levels of cerebral neurotransmitters such as serotonin and acetylcholine have been made that pave the way for studies on the influence of diet on behavior during pregnancy, infancy, childhood and adolescence. The roles played by various peptides such as cholecystokinin, nerve growth factor, and the opioid polypeptides in determining food selection and regulating food intake also need to be elaborated. Specific stimuli that determine hunger and satiety must be described and quantified, and the central and peripheral contributions to the control of food and water intake must be ascertained.

Adolescence

Little is known about the cognitive and emotional processes involved in choices of food and lifestyle among adolescents. The condition of obesity that may appear during adolescence is as much a behavioral as a nutritional problem. Attention needs to be directed toward the psychological and cultural determinants of this condition. In particular, research on the effect of external environmental cues on eating behavior and research on the role of conditioned anticipations in the regulation of food intake need to be expanded.

Behavior modification has met with some success in achieving weight loss among obese adults. Research is needed, however, on how to maintain weight loss and how to improve adherence to programs of behavior modification or other behavioral or psychological therapies among adolescents and children. Research on how to use techniques of behavior modification to encourage the eating of more nutritious meals and how to stimulate obese children to exercise regularly is needed. Research is needed on exercise and the concept of energy balance in the production of obesity. For further research topics in obesity see the Program Announcement entitled Studies on Overnutrition and Obesity, NIH Guide for Grants and Contracts, 7, #18, pp. 23-27, 1978.

Nutrition and Evolution

Much needs to be learned about differing nutritional needs of individuals and of various ethnic and cultural groups. More study is needed of the evolutionary modification of digestive processes under the selective pressure of certain foods. Of special interest are studies of diseases of infancy and childhood that appear to result from genetic-nutrient environmental interaction, such as lactose intolerance, soya sensitivity, favism and celiac disease. There is also a need to determine intolerances to other ingested substances, such as food additives and drugs. Research is also needed on the relationship of the geophysical environment to national cuisines, methods of food preparation, health and disease.

Animal Models

The identification or development of new animal models in which to study disorders of appetite, especially anorexia, is encouraged. Research is also encouraged on the use of animal models to study such problems as the maintenance of caloric homeostasis, suckling and weaning behavior, strong food preferences or rejections, and food intolerances which appear to have a genetic basis.

II. METHOD AND CRITERIA OF REVIEW

A. Assignment of Applications

Applications will be received by the NIH Division of Research Grants, referred to an appropriate Initial Review Group for scientific review,

and assigned to one of the several Institutes for possible funding. It is anticipated that most of the applications in this area will be assigned to the National Institute of Child Health and Human Development. In the event that a particular application falls more appropriately within the purview and responsibility of another Institute, arrangements will be made for primary assignment to that Institute.

B. Review Procedures

Applications in response to this program announcement will be reviewed on a nationwide basis in competition with each other and in accord with the usual Public Health Service peer review procedures for research grants. They will first be reviewed for scientific and technical merit by a review group composed mostly of non-federal scientific consultants (Initial Review Group) and then by the National Advisory Council of the appropriate Institute. An Institute, by law, may not make an award unless Council has recommended approval.

C. Deadlines

Applications will be accepted by the usual receipt dates for new applications: March 1, July 1, and November 1.

The Institute staff recognizes that few applicants will be able to respond to this announcement by the next regular receipt date (March 1, 1980) but it is prepared to accommodate the applications of those who do.

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 THE DEVELOPMENTAL ASPECTS OF BEHAVIOR AND NUTRITION 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
Division of Research Grants
National Institutes of Health
Room 240, Westwood Building
Bethesda, Maryland 20205

For further information, investigators are encouraged to contact:

Director
Center for Research for Mothers and Children
National Institute of Child Health and
Human Development
Landow Building, Room 7C-03
Bethesda, Maryland 20205

(301) 496-5097

EXPERIMENTAL RESEARCH RELATED TO MAMMOGRAPHIC

SCREENING FOR HUMAN BREAST CANCER

ANNOUNCEMENT

NATIONAL CANCER INSTITUTE

The Breast Cancer Program of the National Cancer Institute is inviting grant applications for the purpose of encouraging animal and tissue culture studies that will provide new and relevant information on the problems related to mammographic screening for human breast cancer.

I. BACKGROUND INFORMATION

Radiation-induced risk for cancer of the breast in humans has received considerable publicity since 1976. This controversial issue remains unsettled, and one major problem is the need for better data from fractionated low dose, low LET studies that would be comparable to the exposure from x-ray mammography. A number of years ago it was found that women exposed to repeated fluoroscopies had an increased frequency of breast cancer. Whereas these subjects received irradiation to their breasts at 1 to 2-week intervals, screening for breast cancer would require no more than 1 to 2 mammograms per year. However, there are no radiobiological data indicating that the carcinogenic effect would be different if the time between doses was increased from 1 week to 1 year. An epidemiological study able to prove that 1 to 2 rads of low-LET irradiation are capable of inducing breast cancer would require the examination of millions of women, with the practical impossibility of finding matched controls. On the other hand, it has long been recognized that animal data cannot be used to supply quantitative predictions for the number of human cancers expected to be induced by radiation. Animal data however, can provide information on general principles and mechanisms of radiation effects. Since uncertainties in the risk estimates for human breast cancer are due to our lack of understanding of the basic principles of radiation carcinogenesis and cocarcinogenesis, data from animals and in vitro systems should help to elucidate some of these uncertainties. This is one area identified by NCI as requiring special emphasis for additional research.

As an approach to facilitate clarification of this complex topic, the Breast Cancer Program Coordinating Branch, NCI, asked a group of investigators to formulate relevant questions that, in their opinion, could be answered by animal or in vitro models. The text of the

This program is described in the Catalog of Federal Domestic Assistance number 13.396. Awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended; 42 USC 241) and administered under PHS grant policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74.

original report with the reviewers' comments has been published in the Journal of the National Cancer Institute, Vol. 61(6): 1537, 1978. The opinions expressed in this paper are intended to stimulate meaningful research projects and in no way should they be interpreted as limiting freedom of the applicant in pursuing the approach he/she considers optimal.

II. MECHANISM OF SUPPORT

The mechanism of support will be the traditional research grant. Policies that govern research grant programs of the National Institutes of Health will prevail. The award of grants pursuant to this request for grant applications is contingent upon receipt of proposals of high scientific merit and the availability of appropriated funds.

III. METHODS AND CRITERIA OF REVIEW

- A. Assignment of Applications. Applications will be received by the Division of Research Grants (DRG), National Institutes of Health. DRG will refer the proposals to the appropriate Study Section for scientific review, and will assign them to the National Cancer Institute for possible funding and management. These decisions will be governed by normal programmatic considerations as specified in the DRG Referral Guidelines.
- B. Review Procedures. Applications in response to this announcement will be reviewed in accordance with the usual NIH peer review procedures (Study Section). 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 approach, the training experience and research competence of the investigator(s), the adequacy of 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 staff members of the Breast Cancer Program, NCI. Funding decisions will be based upon relative scientific merit, program relevance, and the Institute's ability to fund.
- C. Deadlines. Applications will be accepted in accordance with the usual dates for new applications on an indefinite basis: March 1, July 1, and November 1.

The Institute staff recognizes that few applicants will be able to respond to this announcement by the next regular receipt date (March 1, 1980) but is prepared to accommodate the applications of those who do.

IV. METHOD OF APPLYING

Applications should be submitted on form PHS-398, which is available in the business or grants office at most academic or research institutions, or from the Division of Research Grants, NIH.

The phrase "PREPARED IN RESPONSE TO NCI ANNOUNCEMENT ON BASIC RESEARCH RELATED TO BREAST CANCER MAMMOGRAPHIC SCREENING" should be typed across the top of the application. The original and six copies should be sent or delivered to:

Application Receipt Office
Division of Research Grants
National Institutes of Health
Room 240, Westwood Building
Bethesda, Maryland 20205

In order to alert the Breast Cancer Program to the submission of proposals as requested above, copies of the face page and summary page of such applications should be forwarded under separate cover to:

Dr. D. Jane Taylor
Chief, Breast Cancer Program Coordinating Branch
National Cancer Institute
Room 4A22, Landow Building
National Institutes of Health
Bethesda, Maryland 20205

RESEARCH RELATED TO GENETIC SUSCEPTIBILITY

TO HUMAN BREAST CANCER

NATIONAL CANCER INSTITUTE

ANNOUNCEMENT

The Breast Cancer Program of the National Cancer Institute encompasses the totality of problems related to the etiology, epidemiology, diagnosis, treatment, and prevention of breast cancer. This Program has a special interest in stimulating investigator-initiated research grant applications (R01's) for investigations of genetic susceptibility to human breast cancer.

I. BACKGROUND INFORMATION

The clustering of breast cancer in families is a well-known phenomenon, and recent studies have indicated that in some families the disease appears to be segregating as a Mendelian trait, suggesting that one or more human genes are responsible for the susceptibility. Particular program interest in this area addresses such questions as: (1) what proportion of human breast cancers, female and male, may be accounted for or strongly influenced by susceptibility gene(s); (2) how many forms of genetic susceptibility exist and how common is each of these forms; (3) which, if any, environmental or cultural risk factors interact with genetic susceptibility; (4) how is genetic susceptibility expressed at physiological and biochemical levels; (5) whether or not the natural history of genetically influenced breast cancer resembles that of non-familial breast cancer; (6) whether increased familial risk is reflected in breast cancer mortality risk; and (7) related studies on genetic aspects of human breast cancer.

II. MECHANISM OF SUPPORT

The mechanism of support will be the traditional research grant. Policies that govern research grant programs of the National Institutes of Health will prevail. The award of grants pursuant to this request for grant applications is contingent upon receipt of proposals of high scientific merit and the availability of appropriated funds.

III. METHODS AND CRITERIA OF REVIEW

- A. Assignment of Applications. Applications will be received by the Division of Research Grants (DRG), National Institutes of Health. DRG will refer the proposals to the appropriate Study Section for scientific review, and will assign them to the National Cancer

This program is described in the Catalog of Federal Domestic Assistance number 13.396. Awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended; 42 USC 241) and administered under PHS grant policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74.

Institute for possible funding and management. These decisions will be governed by normal programmatic considerations as specified in the DRG Referral Guidelines.

- B. Review Procedures. Applications in response to this announcement will be reviewed in accordance with the usual NIH peer review procedures (Study Section). The review criteria customarily employed by the National Institutes of Health for research grant applications will prevail. Factors considered in the scientific merit evaluation of each application will include as assessment of the importance of the proposed research problem, the novelty and originality of approach, the training experience and research competence of the investigator(s), the adequacy of 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 staff members of the Breast Cancer Program, National Cancer Institute. Funding decisions will be based upon relative scientific merit, program relevance, and the Institute's ability to fund.
- C. Deadlines. Applications will be accepted in accordance with the usual dates for new applications on an indefinite basis:

March 1

July 1

November 1

The Institute staff recognizes that few applicants will be able to respond to this announcement by the next regular receipt date (March 1, 1980) but is prepared to accommodate the applications of those who do.

IV. METHOD OF APPLYING

Applications should be submitted on form PHS-398, which is available in the business or grants office at most academic or research institutions or from the Division of Research Grants, NIH. The phrase "PREPARED IN RESPONSE TO NCI ANNOUNCEMENT OF GENETIC SUSCEPTIBILITY TO HUMAN BREAST CANCER" 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 20205

In order to alert the Breast Cancer Program to the submission of proposals with primary thrust directed toward genetic aspects of human breast cancer, copies of the face page and summary page of such applications should be forwarded under separate cover to:

Dr. Elizabeth P. Anderson
Chief, Epidemiology Projects Section
Breast Cancer Program Coordinating Branch
National Cancer Institute
Room 4-A-06, Landow Building
Bethesda, Maryland 20205

Training
REQUEST FOR RESEARCH GRANT APPLICATIONS: RFA

NIH-NCI-DCRRC-RMB-80-2

ANNOUNCEMENT

NATIONAL CANCER INSTITUTE

TITLE: *TRAINING PROGRAM IN VETERINARY PATHOLOGY
AND COMPARATIVE PATHOLOGY*

Application receipt date, April 1, 1980

I. BACKGROUND INFORMATION

The National Cancer Institute, in the interests of itself, the Environmental Protection Agency, the National Institute of Environmental Health Sciences, and other Federal Agencies, announces a new three-year residency training program for veterinary pathologists. Responses are invited from institutions which have, or which are able to develop, veterinary pathology residency program capabilities or comparative pathology programs. A limited number of awards (not to exceed ten) will be made. The purpose of these awards will be to double the annual production of board-certifiable veterinary pathologists within five years, and otherwise to increase the national pool of comparative pathologists.

This program is expected to:

- encourage qualified candidates to choose careers in veterinary pathology or comparative pathology, biomedical specialties of increasing importance to both government and industry which presently are characterized by severe manpower shortages;
- encourage qualified institutions to expand training opportunities for veterinary pathologists and comparative pathologists desirous of developing greater competence in recognizing and interpreting structural and functional biological abnormalities;
- create a pool of highly qualified general veterinary pathologists and comparative pathologists whose services are badly needed in federal programs intended to identify, monitor and characterize environmental carcinogens and other toxic substances.

Recent years have seen an increasing awareness of the dangers of environmental pollutants. In response to these dangers, large testing and monitoring programs have been organized by many agencies of government, both local and federal. The veterinary pathologist is a key member of the teams engaged in those efforts. There is a severe shortage of these specialists. It has been estimated that several hundred vacancies exist in this disciplinary area. At the same time, the annual production of veterinary pathologists is about 35 each year. There is an urgent need for additional well-trained veterinary pathologists and comparative

pathologists to fill this void. Those who complete the veterinary pathology training program and who contemplate research careers would be well-prepared to undertake postdoctoral research training via the National Research Service Act research fellowships and traineeships.

II. TRAINING GOALS AND SCOPE

The veterinary pathology training program will encompass a three year period of residency training which could, but which need not, culminate in a degree. Training leading to specialization in either anatomic or clinical pathology or a combination thereof would be acceptable. The program could be weighted toward one or the other speciality, but there should be a common core of course work and experience. This core should be sound training in structural (including ultrastructural) and functional pathology. Course work would consist of advanced biomedical courses, including epidemiology and biostatistics, the pathobiology of cancer, toxicology and environmental sciences. Laboratory experience should provide training in the techniques and interpretation of tests. Practical experience in diagnostic pathology should be provided through autopsies, histopathologic examinations, and clinical pathology studies. Trainees should gain broad experience in comparative pathology by doing thorough postmortem examinations of a variety of animal species. Because most of the people who complete the program will participate in testing and monitoring activities in federal and local governmental agencies or elsewhere, trainees should be exposed to research methods and writing preferably by doing a minor research project. They should also be afforded a chance to develop administrative skills, such as those required to manage a clinical pathology laboratory.

Training programs should be located within or near large biomedical institutions. A general medical library containing the major journals and books covering the field of medicine should be accessible. Necropsy facilities should be adequate to handle a variety of animal species. Adequate laboratories support should be available, including facilities for photomicrography, electron microscopy, and toxicology support as well as the more usual facilities. An organized and usable collection of case records, tissue sections and other materials from a variety of diseases and animal species should be available. Each trainee should be provided an adequate study area and necessary equipment to conduct his studies.

At least one member of the training staff must be an ACVP diplomate. While it is recognized that individuals can be adequately trained by one pathologist, the breadth of veterinary pathology suggests that the training staff should consist of a number of qualified pathologists of diverse interests and experience. Such a staff allows the trainee to be exposed to a variety of opinions and philosophies. As important as the number of staff members is the relationship between trainee and supervisor. Trainees should be personally and closely supervised by the advisor. Thus, it is doubtful that one instructor should supervise more than two or three trainees.

Trainees must:

1. Be citizens or noncitizen nationals of the United States or its possessions or territories or must have been lawfully admitted to the United States for permanent residence at the time of application;
2. Hold a D.V.M. degree, an M.D. degree or Ph.D. degree. Only holders of the D.V.M. will be eligible for board certification as veterinary pathologists;
3. Be selected on a competitive basis;
4. Be frequently evaluated during the course of training to monitor progress;
5. Before beginning training, indicated their intention of working as comparative or veterinary pathologists in federal agencies or in other non-profit public or private institutions.

Program directors should be prepared to inform the Institute, upon request, of subsequent career patterns of trainees.

III. MECHANISM OF SUPPORT

Awards will be made to up to ten institutions competitively determined to have the best capability for training veterinary pathologists and comparative pathologists. Applicants need not be schools of veterinary medicine.

Each grant will be for a maximum project period of five years and will underwrite the cost of a three-year residency training program for up to four trainees in each year's class. A second five-year project period may be awarded competitively. Research experience, including industrial research, teaching, internship, and residency, may be considered relevant experience in determining stipend levels, as follows:

<u>Years of Relevant Experience</u>	<u>Stipend</u>
0	\$13,380
1	14,040
2	14,736
3	15,468
4	16,236
5	17,040

Upon request, non-Federal sponsoring institutions receive an institutional allowance of up to \$5,000 per annum for each trainee's tuition, fees, and related costs, such as research supplies and equipment, travel to scientific meetings, and medical insurance. As a one-time expense, each grantee institution may upon request be furnished money for a reasonable amount of nonexpendable equipment for trainee use. Indirect costs will be eight percent of total direct costs or actual indirect costs, whichever is the lesser.

The start date for all programs will be September 1, 1980. As many as ten proposals may be funded, but only if they are judged by the reviewers to be of high quality. Sufficient money has been set aside to accommodate that many awards. These awards will be made under the authority of Section 404(a)(4) of the Public Health Service Act, (P.L. 78-410 as amended; 42 USC 285). The Catalog of Federal Domestic Assistance number is 13.398.

IV. REVIEW PROCEDURES AND CRITERIA

All applications received as a result of this announcement will be reviewed in April 1980, for technical merit by the NCI Cancer Research Manpower Review Committee whose membership will be supplemented with ad hoc experts in veterinary and comparative pathology. They will be reviewed by the National Cancer Advisory Board at its meeting in May 1980. Awards will be made before September 1, 1980.

Criteria for review include:

1. The proposed faculty's potential for training postdoctoral students in veterinary or comparative pathology.
2. The quality of the training resources and training environment.
3. The merits of the proposed training plan.
4. The inclusion in the training plan of courses in oncology/cancer biology, environmental sciences, toxicology, testing procedures, and research methodology.
5. The plan to follow up on subsequent career patterns of trainees.

V. METHOD OF APPLYING

Applicants should use form PHS 6025 in applying for these grants. If this form is not available in your business office, it may be obtained from the Grants Inquiries Office, Division of Research Grants, National Institutes of Health, Bethesda, Maryland 20205. A self-addressed gummed mailing label enclosed in the request for kits would expedite handling. All applications must be received by the Division of Research Grants, National Institutes of Health, Bethesda, Maryland 20205 by c.o.b. April 1, 1980. Because this announcement is intended to be a one-time event, late receipt of your application will result in its return to you. Please type the words "NCI VETERINARY/COMPARATIVE PATHOLOGY PROGRAM" on the top part of the face page of PHS 6025. Send the original and ten copies to the Division of Research Grants, National Institutes of Health, Room 240, Westwood Building, Bethesda, Maryland 20205 and 15 copies to:

Barney C. Lepovetsky, Ph.D., J.D.
National Cancer Institute
Room 10A18, Westwood Building
Bethesda, Maryland 20205

Telephone: (301) 496-7803

CELLULAR AGING RESEARCH: DIFFERENTIATED CELLS IN CULTURE

NATIONAL INSTITUTE ON AGING

ANNOUNCEMENT

I. INTRODUCTION

The National Institute on Aging (NIA) was established in 1974 to conduct and support biomedical, behavioral and social research and training related to the aging process and the diseases and other special problems and needs of the aged. Consistent with this mandate, Genetics and Cellular Aging, a subprogram of the Basic Aging Program, supports research on mechanisms of cellular aging with the use of cell culture technologies. The purpose of this announcement is to encourage further research and training activities in cellular aging utilizing tissue and organ specific cells in culture.

II. BACKGROUND

Cellular events are probably major determinants of longevity and senescence. The study of cells as they "age" in culture and of cells derived from humans and experimental animals of various ages permits investigation of cellular events consequent to aging independent of the complexity of the whole organism. To date most such studies have used fibroblast-like cells of dermal and lung origin, these being easily obtained and cultured. Although such cells have yielded valuable information on various aspects of in vitro cellular aging, and on cellular and molecular biology in general, these systems have not yet been sufficiently characterized with respect to cell heterogeneity in mass cultures, in vivo precursors of in vitro cultures, and specific functional markers that can be compared with those of cells in vivo. The NIA earlier issued an announcement inviting applications addressing these questions (*NIH Guide for Grants and Contracts*, Vol. 7, No. 12, September 1, 1978).

Because of recent advances in cell-culture technologies, an increasing number of differentiated cells in culture are likely to be available for comparative studies of cellular aging. Recognizing that phenotypic, and perhaps genotypic, differences exist between cells in vitro and in vivo, nonetheless many differentiated cells do express known functional traits when maintained in culture. Several differentiated cell lines also exhibit limited in vitro proliferative capacity, as do fibroblast-like cells. Additional information regarding differentiated cells in culture may be obtained from the following references:

This program is described in the Catalog of Federal Domestic Assistance number 13.866. Awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended; 42 USC 241) and administered under PHS grant policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74, and Section 472, 42 USC 2891-1, and administered under Federal Regulations 42 CFR Part 66.

Wigley, C.B. 1975. Differentiated cells in vitro. Differentiation 4:25-55.

Cox, R.P. and J.C. King. 1975. Gene expression in cultured mammalian cells. Internat. Rev. Cytol. 43:281-351.

Jacoby, W. and I. Pastan (eds.). 1979. Methods in Enzymology. Cell Culture. L VIII, Section III, Academic Press.

Montagna, W., A.M. Kligman, K.W. Wuepper and J.P. Bentley (eds.). 1979. Proceedings of the 28th Symposium on the Biology of Skin. J. Invest. Dermatol. (Special issue on aging): 73.

Nichols, W.W. and D.G. Murphy (eds.) 1979. Differentiated Cells in Aging Research. Internat. Rev. Cytol. Supplement, 10.

Harris, C.C., B.S. Trump and G.D. Stoner (eds.). 1980. Cultured Human Tissues and Cells in Biomedical Research. Methods in Cell Biology (in press), Volume 21, Parts A and B, Academic Press.

III. GOALS AND SCOPE

The goal of this announcement is to encourage research on the mechanisms of cellular aging. The use of differentiated cells in culture provides an excellent opportunity to study age-associated alterations in differentiated functions that are expressed by cells in vitro. Such studies could lead to an understanding of mechanisms of age-related functional decline in various tissues and organs.

IV. SPECIFIC OBJECTIVES

The NIA seeks research and research training grant applications in cellular aging, encompassing growth and nutrition, somatic cell genetics and various aspects of cellular, molecular and developmental biology pertaining to differentiated cells. Research is encouraged in, but not limited to, the following areas:

- Age-related changes in structure and function of differentiated products (specific structural proteins and enzymes) and other biochemical properties of primary and secondary cultures.
- Age-related changes in membrane structure and function affecting: inter- and intra-cellular communication; energy production; and antigenic, absorptive, electrical, receptor and other properties of the cell surface.
- Age-related alterations in subcellular structures involved in motility, digestion, detoxification, secretion, and various synthetic functions of the cell.
- Age-related changes in nuclear structure and function (e.g., chromatin structure; DNA replication and repair; regulation of gene expression; ribosome production; nuclear-cytoplasmic interactions; chromosomal aberrations and neoplastic transformation).

- The relationship between in vitro and in vivo cellular aging as elucidated by cell and tissue transplantation and the use of chimeric and genetic mosaic animals.
- The use of somatic cell genetics to understand the genetic basis of cellular aging and regulatory mechanisms of cellular growth relevant to the aging process.
- The requirements for establishment of normal differentiated cell lines capable of expressing differentiated traits (e.g., nutrition, growth factors, feeder layer, co-cultivation and other environmental conditions, such as oxygen tension, which affect culture growth) and perturbations or procedures that alter, inhibit or delay age-related changes in differentiated functions.

Although studies with cultured human cells (e.g., cells obtained from vascular and nervous tissues, gastrointestinal and urinary tracts, endocrine and exocrine organs, retina, lung, bone, muscle and skin) expressing tissue and organ specific functions are preferred, use of invertebrate and other vertebrate cell systems, including embryonic cells, may be desirable in some cases.

To support research on cellular aging, the NIA has established, under contracts, a Cell-Line Repository and a Mycoplasma Contamination Testing Service. Additional information on these resources may be obtained from: N.K. Das and D.G. Murphy. 1978. National Institute on Aging Cell-Line Repository. Exp. Aging Res. 4:321-331. N.K. Das and D.G. Murphy. 1978. National Institute on Aging Mycoplasma Testing Service. Exp. Aging Res. 4:333-341.

The NIA also maintains colonies of laboratory mice and rats of different ages. Applicants interested in using these animals must contact, prior to submitting applications: Chief, Biophysiology and Pathobiology Aging Program, NIA (phone: (301) 496-1033).

V. MECHANISMS OF RESEARCH AND RESEARCH TRAINING SUPPORT

The primary mechanisms for support of this program are:

- 1) Project Grant (the traditional NIH research support mechanism).
- 2) Postdoctoral Fellowship (the Individual National Research Service Award).

Additional mechanisms for support are:

- 3) Program Project Grant* (for multidisciplinary research involving several projects with a common focus).
- 4) Special Research Award** (an optional, introductory grant mechanism; applicants may not have previously been supported as Principal Investigator by a U.S. Public Health Service research grant; ceiling \$30,000 per year for three years)

- 5) Clinical Investigator Award** (for clinically trained investigators; three years of support: salary up to \$30,000; supplies etc. up to \$10,000 annually).
- 6) Research Career Development Award
- 7) Institutional Training Grant* (Institutional National Research Service Award).

* Potential applicants should contact NIA staff.

** Write NIA (see below) for information and instructions.

VI. REVIEW PROCEDURES AND FUNDING POLICY

According to standard referral guidelines, the NIH Division of Research Grants will assign all applications to appropriate NIH study sections for initial scientific merit review and to an appropriate Institute or Division for final review by its National Advisory Council/Board. Applications submitted in response to this announcement will compete with all NIA grant applications for funding consideration. No set-aside money is available for these applications.

VII. METHOD OF APPLYING

Use the appropriate NIH research or research training grant application kits. If your institution does not have them, copies may be obtained by writing: Office of Grant Inquiries, Division of Research Grants, National Institutes of Health, Bethesda, Maryland 20205, or by calling (301) 496-7441.

Please type the phrase NIA BASIC AGING PROGRAM: CELLULAR AGING on the face page of the application. Enclose a cover letter indicating that the application is in response to this announcement.

Forward application to:

Division of Research Grants
Room 240, Westwood Building
5333 Westbard Avenue
National Institutes of Health
Bethesda, Maryland 20205

Application receipt dates for Research Project Grants and Special Research Awards are: March 1, 1980; July 1, 1980; and November 1, 1980. The Institute staff understands that most investigators will have difficulty responding under short notice to the March 1, 1980 deadline; applications received after that date will be held for the next review cycle.

Receipt dates for applications for individual or institutional National Research Service Awards, Program Project Grants, Clinical Investigator Awards, and Research Career Development Awards are: June 1, 1980; October 1, 1980; and February 1, 1981.

Prior to formal submission of an application, please send a letter of intent to the Basic Aging Program (see address below). Include name of principal investigator, institutional address, title of application, and abstract of proposed research.

VIII. INQUIRIES AND CORRESPONDENCE

Inquiries and correspondence should be directed to:

Dr. Nirmal K. Das
Project Officer
Basic Aging Program
Biomedical Research and Clinical Medicine
National Institute on Aging
National Institutes of Health
Bethesda, Maryland 20205

Telephone: (301) 496-5534

THE GENETIC BASIS OF AGING:

C. ELEGANS AS A MODEL SYSTEM

NATIONAL INSTITUTE ON AGING

I. INTRODUCTION

The National Institute on Aging (NIA) conducts and supports biomedical, behavioral, social, and clinical research, and research training related to the processes of aging and to the diseases and other special problems and needs of the aged.

As part of its efforts to understand aging and improve the quality of old age, the NIA encourages research on the molecular basis of senescence and longevity. Studies of relatively simple organisms with favorable genetic characteristics, such as the laboratory nematode, Caenorhabditis elegans, may provide insight into these basic mechanisms.

II. BACKGROUND

Phenotypic expression of life span is a readily predictable feature of most metazoan organisms, but its genetic basis is not known. In particular, the relationship between specific developmental stages of an organism and subsequent senescence is not understood. The relationship may be of significance, as both development and senescence may be controlled by the same genetic program. The NIA encourages the use of appropriate invertebrates, to study the genetics basis of senescence and longevity. The relationship may be of particular significance, as both development and senescence may be controlled by the same genetic program.

The small size, rapid generation time, short lifespan (about 2 weeks), and hermaphroditic, self-fertilizing mode of reproduction of C. elegans make it a favorable organism for genetic studies on longevity.

Among the sources of background information that may be useful to investigators unfamiliar with C. elegans are:

Riddle, D.L. 1978. The genetics of development and behavior in Caenorhabditis elegans. Journal of Nematology 10 (1): 1-16

Zuckerman, B.M. (Editor). 1980. Nematodes as Biological Model Systems. Vol. I Behavioral and Developmental Models. Vol II Aging, Nutritional and Toxicity Testing Models, Physiology and Morphology. Academic Press. (In press: for release March, 1980).

This program is described in the catalog of Federal Domestic Assistance number 13.866. Awards will be made under the authority of the Public Health Service Act, Title III, Section 301 (Public Law 78-410, as amended; 42 USC 241) and administered under PHS grant policies and Federal Regulations 42 CFR Part 52 and 45 CFR Part 74. NRSA awards will be made under the authority of the Public Health Service Act, Section 472, 42 USC 291-1, and administered under PHS grants policy and Federal Regulations 42 CFR Part 66.

III. GOALS AND SCOPE

The goal of this announcement is to stimulate research on the genetic basis for longevity and senescence in C. elegans: that is, the specific genes, their products, and those products' functions that most directly relate to control of longevity and, if appropriate, to the phenomenon of senescence. Anticipated findings need not relate directly to, but should lead to more precise scientific inquiry of, aging in mammals.

IV. SPECIFIC OBJECTIVES

The proposed program emphasizes, but is not limited to research in the following areas in C. elegans genetics:

- A. Studies of *Population genetics* to elucidate evolutionary strategies and selection pressures that establish longevity patterns in wild and experimental populations of C. elegans.
- B. Isolation of developmental mutants in which specific gene products with key relationships to events determining longevity and senescence might be identified.
- C. Identification and/or development of *mutants* that can be used in somatic mosaic studies that may provide knowledge of the genetic control of senescence and longevity.
- D. Cell and organ culture studies of C. elegans, (including development of cell culture technologies) to complement the program on the genetic basis of senescence and longevity.
- E. Nutritional manipulation of lifespan on both defined and bacterial media to complement genetic studies of longevity and senescence.
- F. Research on the *biology* of C. elegans at the molecular, biochemical and physiological levels to complement genetic studies of longevity and senescence.

V. THE CAENORHABDITIS GENETICS CENTER (CGC)

The CGC, supported by NIA contract, acquires, stores and distributes C. elegans wild type and mutant strains and maintains the genetic map. Inquiries should be addressed to the Principal Investigator: Dr. Donald L. Riddle, Division of Biological Sciences, College of Arts and Sciences University of Missouri-Columbia, Columbia, Missouri 65211.

VI. MECHANISMS OF RESEARCH AND RESEARCH TRAINING SUPPORT

The primary mechanisms for support of this program are:

1. Research Project Grant (the traditional NIH research support mechanism).
2. Postdoctoral Fellowship (the Individual National Research Service Award).

Additional mechanisms for support are:

1. Program Project Grant* (for multidisciplinary research involving several projects with a common focus).
2. Special Research Award** (for applicants not previously supported as Principal Investigator by a U.S. Public Health Service research grant; ceiling \$30,000 per year for 3 years).
3. Research Career Development Award.
4. Institutional Training Grant* (Institutional National Research Service Award).

*Potential applicants should contact NIA staff

**Write NIA (see below) for information and instructions.

VII. APPLICATION REVIEW AND FUNDING POLICY

All applications will be received by the Referral Office, Division of Research Grants, for assignment to an initial review group and Institute according to the NIH process for research and research training grants. Approved applications will compete for available funds with all other approved applications assigned to the National Institute on Aging.

VIII. METHOD OF APPLYING

Use the appropriate NIH research grant (PHS398) or research training grant (PHS6025) application kits. If your institution does not have them, copies may be obtained by writing to:

Office of Grants Inquiries
Division of Research Grants
Room 448, Westwood Building
Bethesda, Maryland 20205

Telephone: (301) 496-7441

Please write in bold print, and underline, "NIA BASIC AGING PROGRAM: C. elegans" on the upper margin of the face page of the application, and/or in item 2 of the face page of the revised NIH application form 398. Enclose a cover letter stating that the application is in response to this announcement.

Forward to:

Division of Research Grants
National Institutes of Health
Room 240, Westwood Building
Bethesda, Maryland 20205

Receipt dates for Research Project Grant and Special Research Award applications are: March 1, July 1, and November 1; for all others mentioned under MECHANISMS OF RESEARCH AND RESEARCH TRAINING SUPPORT (above): June 1, October 1, and February 1.

Prior to formal submission of an application, send a letter of intent to the Basic Aging Program (see address below). Include name of principal investigator, institutional address, title of application, and abstract of proposed research.

IX. INQUIRIES AND CORRESPONDENCE

Correspondence should be directed to:

Dr. Donald G. Murphy, Chief
Dr. Nirmal K. Das
Basic Aging Program: C. elegans
Biomedical Research and Clinical Medicine
National Institute on Aging
Bethesda, Maryland 20205

Telephone: (301) 496-5534

CAENORHABDITIS GENETICS CENTER

NOTICE

NATIONAL INSTITUTE ON AGING

The National Institute on Aging (NIA) has established a Caenorhabditis Genetics Center (CGC), a contracted resource for the biomedical research community. C. elegans strains are available without cost to all qualified investigators pursuing genetic and/or related studies with C. elegans.

The CGC will acquire, maintain, and distribute wild-type and mutant strains of C. elegans for biomedical research. Laboratories providing mutants of C. elegans will be requested to include such information as name of strain; names of contained mutation(s); mutagen used; whether the strain was back-crossed and, if so, how many times; phenotype(s) and genes affected by the mutation(s), map location(s) of mutation(s); and data used to determine map locations. The CGC strain collection will include at least one allele of each identified gene, all available chromosomal rearrangements, and available closely linked double mutants, as well as other multiple mutants useful for mapping. The CGC will assure that nematodes for distribution are free from contamination and that they conform to visible phenotype description.

Nematodes will be shipped by standard procedures to persons qualified to utilize them in research and/or training. Each request should include a brief description of the research and/or research training for which the culture is intended. Recipients of cultures agree to acknowledge the CGC and supply the center with two reprints of resultant publications. Shipments are made at no cost to the requesting laboratory.

The CGC will be responsible for maintaining a current genetic map, nomenclature and related data for C. elegans, as well as a list of capital letter codes and lower case codes assigned to C. elegans laboratories for purposes of naming strains and mutations, respectively. New codes will be assigned to laboratories on request. Participating laboratories will receive annually a complete code list and the current genetic map. These materials will also be available to others upon request.

The CGC will develop a computer-based data storage and retrieval system which will handle descriptive data on strains collected, data used to generate the genetic map, as well as bibliographic information on research publications.

The CGC will not be fully operational until the Fall of 1980, but some services are available now.

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Inquiries to the CGC should be addressed to the Principal Investigator:

Dr. Donald L. Riddle
Division of Biological Sciences
University of Missouri
Columbia, Missouri 65211

Telephone: (314) 882-8319

Inquiries regarding NIA research support may be addressed to:

Dr. Donald G. Murphy, Chief
Dr. Nirmal K. Das
Basic Aging Program
Biomedical Research and Clinical Medicine
National Institute on Aging
Bethesda, Maryland 20205

Telephone: (301) 496-5534

The same approach is to be followed if the prior competitive segment of support (shown as "a" in the above example) was initiated as a Type 2 award. In other words, all competing continuation awards with July 1, 1979, and later start dates would pick up the beginning date of the immediately prior competitive segment of support as the start date for the project period to be shown on the award statement. This approach will be followed even in situations where a hiatus in support may have occurred between the end date of the last noncompeting award (Type 5) and the start date of the first budget period of the Type 2 award.

EXCEPTIONS TO THIS PROCESS AND HOW THEY ARE HANDLED

A number of Type 2 awards (particularly training grants) with July 1, 1979 start dates were made early in 1979 prior to the adoption of the above described procedure.

No revision of such award statements will be made. The project period start dates shown on these Type 2 awards will remain for the project period including any extensions thereof.

2. Financial Management

- a. Document Numbering System: Under the new project period approach, NIH will continue the previously used document numbering system. The alpha suffix of the document number will continue to change with each competing continuation award. As an example, a Type 1 application (1-R01 GM12345-01) is originally approved for a four year project period, 7/1/79 - 6/30/83, and the awards for all four years will carry a document number 08-R1GM12345A. The Type 2 competing continuation application when submitted is approved for an additional four years, 7/1/83 - 6/30/87. The document number for the Type 2 award and the three succeeding years will be 08-R1GM12345B. A second Type 2 application is subsequently submitted and is approved for an additional three years, 7/1/87 - 6/30/90. The document number for the second Type 2 award and two succeeding years will be 08-R1GM12345C. The total project period for this grant will be 7/1/79 - 6/30/90.
- b. Unexpended Funds (Unliquidated Obligations and Unobligated Balances) - A significant aspect of the change in policy permits the carry-over of unexpended funds between competing segments of the project period. The funds awarded in support of each budget period will remain available for the total time for which support of a project has been approved. As in the example cited in the above paragraph, the funds remain available for the total project period of 7/1/79 - 6/30/90.

The balance from one budget period will automatically be carried forward into the following budget period provided the same document number is applicable. Again, using the preceding example, the first four years of the approved project have the same document number (08-R1GM12345A), therefore, the balance is automatically carried forward to the 02 through 04 years. The document number changes with the first Type 2 award (08-R1GM12345B). To carry forward a balance from the first document number for the initial project period to the competing continuation award, the NIH Division of Financial Management (DFM) will deobligate the unexpended balance from the first document number (08-R1GM12345A) and reobligate against the document number for the Type 2 (08-R1GM12345B). The DFM has reinstated the use of the "Notice of Disposition of Grant Unexpended Balance" (Attachment I) to advise grantee institutions and NIH awarding components of the action and the amount of funds being carried forward.

Since 42 CFR, Part 52, was revised in April, 1979, the DFM will transfer balances from any Type 5 Reports of Expenditure with end dates of 4/30/79 or later forward to Type 2 competing continuation awards. This will be done regardless of whether or not the Type 2 award statement carries a project period start date which was picked up from the prior competitive segment (See "Exceptions" above). However, if the grant was in a period of hiatus as of April 9, 1979, the unexpended funds cannot be carried forward. The options available to the awarding components on "when" and "how" to utilize the balances will be the same as those in the previous Type 5 approach. If action is taken promptly following the ROE processing (during the competing continuation year), a revised award statement will be necessary to affect either a funding offset or to provide increased authorization. Otherwise, a determination may be made on the use of the balances at the time of processing the next Type 5 award.

- c. Closing-Out of Awards - The grantee must report expenditures on a cumulative basis for the life of a document number. The DFM will close out (for expenditure reporting) each competing cycle in order to eliminate the necessity for grantees to report the cumulative expenditures for the total project period.
3. Individual Periods of Recommended Support. It is important to note that, regardless of adjustment in the project period definition, NIH policy limitations on the length of time for which an awarding component may make an advance commitment for research project, program project or training grant awards remains at five years (initial year plus four additional years).
4. Pre-Award Costs. The change in administrative procedures for funding grants under the project period system in no way alters the basic policy on pre-award costs. Such costs incurred prior to the beginning date of the first budget of a competing continuation of an existing grant are not allowable unless authorized in writing by an official who has been formally delegated the authority to obligate the Government for grant awards. The incurrance of preaward costs without prior NIH approval will continue to be possible only in situations where the next award will be a Type 5 noncompeting continuation grant.

5. Project-By-Project Cost Sharing. In the absence of an institutional cost sharing agreement, the NIH awarding components have requested that an applicant grantee institution submit an individual cost sharing proposal for the entire project period at the time notification is given that a project will be funded. With the new definition of "project period," questions could obviously be raised regarding its relationship to individual grant cost sharing proposals. It should be noted that project-by-projects cost sharing agreements will continue to be tied to the individual competitive segments of support which were previously recognized as separate project periods.

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE PUBLIC HEALTH SERVICE NATIONAL INSTITUTES OF HEALTH Division of Financial Management Bethesda, Maryland 20205 NOTICE OF DISPOSITION OF GRANT UNEXPENDED BALANCE	DATE
	GRANT NO.
NAME OF GRANTEE INSTITUTION:	DOCUMENT NO.
	INSTITUTIONAL ID NO.
	ENTITY NO.
Fold	

The Report of Expenditures or Financial Status Report, as applicable, for the above grant has been received. The unexpended balance of _____ has been processed as indicated below.

- Withdrawn from the reported grant project period.
- Transferred to the competing continuation award for the _____ year of support.

Grantees are reminded that expenditures for the competing continuation period are limited to the sum total of:

- (1) the approved budget (direct costs)
- (2) liquidation of reported prior year obligations and
- (3) applicable indirect costs.

When the amount transferred, together with the amount awarded for a continuation year, results in overfunding, THE EXCESS IS NOT AVAILABLE FOR EXPENDITURES. The excess, excluding any unliquidated obligations, may be used to partially fund succeeding budget periods within the project.

On the other hand, if the grant is underfunded by \$250 or more, the awarding unit will within 30 days, issue a revised award notice or a supplemental award for the balance needed to meet the level of the current approved budget. For any underfunding of less than \$250, when the current budget will be adversely affected, request for adjustment must be made in writing to the awarding component.

Grants Section, Federal Assistance
Accounting Branch, DFM