NIH GUIDE for GRANTS and CONTRACTS

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

Vol. 4, No. 8, September 19, 1975

NIH GUIDE FOR GRANTS AND CONTRACTS

ANNOUNCEMENT

1. The *NIH Guide for Grants and Contracts* is NIH's official organ of communication for dissemination of scientific program announcements, receipt dates for applications, dates of review cycles, and policies and procedures affecting grants.

2. Official descriptions of contract-supported programs of the several NIH components and other information concerning grants are published periodically for the information and guidance of all concerned.

3. Except in instances where the NIH has been delegated responsibility to act for the Department of Health, Education, and Welfare in connection with a specific function, (e.g., Protection of Research Risks), policies, procedures, and other official materials in the *NIH Guide for Grants and Contracts* are applicable only to the programs of the NIH and do not necessarily apply to any other agency of the DHEW.

4. The *Guide* is published and distributed at irregular intervals to provide such policy, program, and administrative information to individuals and organizations who need to be kept informed of requirements and changes in grants and contracts activities administered by the National Institutes of Health.

5. *Supplements* to the *NIH Guide* contain specific information regarding projects to be supported by the contract mechanism. These supplements either announce the availability of a "Request for Proposal" or invite an interested organization to provide a statement of its capabilities to perform a particular task.

CHIMPANZEES FOR HEPATITIS RESEARCH

ANNOUNCEMENT

The Division of Blood Diseases and Resources of the National Heart and Lung Institute, National Institutes of Health, has awarded a contract to the New York University Medical Center for the acquisition, breeding, and maintenance

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

of chimpanzees for hepatitis research. Requests for use of these animals should be forwarded, along with a full explanation of intended use to:

Dr. Anthony A. Rene'
Blood Resources and Transplantation Branch
Division of Blood Diseases and Resources
National Heart and Lung Institute
National Institutes of Health
Room 5A11, Building 31
Bethesda, Maryland 20014
(301) 496-1537

The proposals will be reviewed for scientific merit by a users panel and animals will be provided for those studies judged most likely to advance hepatitis research. The deadline for the letters of explanation is November 1, 1975.

RESEARCH FELLOWSHIPS TO SWEDEN AND SWITZERLAND — A N N O U N C E M E N T

The Fogarty International Center, National Institutes of Health, has been asked to announce that the Swedish Medical Research Council and the Swiss National Science Foundation will each make available in 1976 three research fellowships to qualified biomedical scientists. These fellowships will provide postdoctoral training in basic or clinical areas of medical research.

To be eligible candidates must be citizens of the U.S.A. and have been engaged in independent responsible research in one of the health sciences for at least two of the past four years. They must present evidence of aptitude and promise in basic sciences or clinical research, with an active interest in pursuing a research career in a health science field. Applicants must also provide evidence of acceptance by a training institution and preceptor. It is the applicant's responsibility to arrange for his research training with the preceptor and to present in his application a complete and explicit plan for research training. Affiliation with the preceptor is documented in the Facilities and Commitment Statement which must accompany each application.

The fellowship must be started within 10 months of the date of its award, as set by mutual agreement of the applicant and the institution. Fellowships will normally extend for 12 months.

The fellowships provide for reimbursement of the cost of round trip tourist air fare tickets for the Fellow and his family. Health insurance is provided during the term of the fellowship. Stipends for the Swedish Medical Research Council Fellowships range from $10,000 to $13,600 per year, depending upon the number of years of postdoctoral research experience at the time of award. The Swiss National Science Foundation stipends range from 24,288 Swiss francs ($9,533) to 30,624 Swiss francs ($11,627) depending upon the age of the applicant at the time of award. In addition, the Swiss National Science Foundation Fellowships provide 3,960 Swiss francs ($1,560) for the spouse and 1,200 Swiss francs $470) for each child.

Application materials and additional information may be obtained from Dr. Eugene L. Walter, Jr., Fogarty International Center, National Institutes of Health, Bethesda, Maryland 20014, telephone (301) 496-6056.

Completed applications should be sent to the same address. Applications and all correspondence with the Fogarty International Center concerning these fellowships should be clearly marked as either "Swedish Medical Research Council Fellowship" or "Swiss National Science Foundation Fellowship."

The receipt date of completed applications by the NIH is January 1, 1976. Applications will be reviewed for appropriateness and scientific merit at the Fogarty International Center. They will be forwarded to Sweden or Switzerland, as appropriate, for final selection and award in late Spring 1976.

NATIONAL RESEARCH SERVICE AWARD PROGRAM FOR INDIVIDUAL POSTDOCTORAL AND INSTITUTIONAL FELLOWSHIP AWARDS

A N N O U N C E M E N T

This is to advise potential applicants in these two programs that as a result of delays in passage of the enabling legislation, NIH has canceled the usual September 1 receipt date for NRSA applications. At the earliest possible time the next receipt date and plans for review will be announced in the *NIH Guide for Grants and Contracts*.

GUIDELINES FOR ESTABLISHING AND
OPERATING CONSORTIUM GRANTS

POLICY

A. *PURPOSE* The purpose of this issuance is to provide policy for the establishment and operation of a consortium grant with a sound administrative base among the participating institutions and between the NIH awarding unit and the grantee institution. It is a revision and supersedes the policy as stated in the *NIH GUIDE FOR GRANTS AND CONTRACTS*, Vol. 2, No. 4, July 2, 1973.

B. *BACKGROUND* In recent years, NIH began to receive research grant applications in which support was sought for a single project involving multiple institutions. The inter-institutional administrative and programmatic arrangements were reflected by various cooperative agreements - some adequately serving their purposes and some not. As the need for and interest in the consortium type of grant grew, NIH began to receive an increasing number of consortium grant applications reflecting the involvement of a greater number of cooperating institutions applying their talents to an increasing portion of the research endeavors. Thus, this policy has evolved from experience with the first consortium grant and has been developed through cooperative efforts of grantee institutions and the NIH in recognition of the special needs of these particular grants.

C. *APPLICABILITY* This policy is applicable to any NIH grant-supported research project which embodies the characteristics of the consortium grant as defined below.

D. *DEFINITION* A consortium grant is defined as: A grant to one institution in support of a research project in which any programmatic activity is carried out through a cooperative arrangement between or among the grantee institution and one or more other institutions (profit or nonprofit) which are separate legal entities, administratively independent of the grantee. The involvement of the non-grantee (cooperative) institution is that of actually performing a portion of the programmatic activity as opposed to simply providing a routine service to the grantee such as equipment repair, data processing, or equipment fabrication.

E. *POLICY* The NIH may make an award for the support of a project to a grantee institution on behalf of a named principal investigator even though one or more institutions other than the grantee are cooperating in the project by carrying out portions of the planned program activity. A proper certification reflecting inter-institutional understanding and basic agreement must be submitted to the NIH awarding unit.

F. *CONDITIONS OF APPLICATION AND AWARD*

1. Agreement prior to application submission Prior to submission of an application for a consortium grant the applicant institution and each cooperating institution should thoroughly explore and reach at least tentative agreement on the scientific, administrative, financial, and reporting requirements for the grant.

2. Application preparation The application form for consortium grants is the same form used for other NIH research proposals (PHS form 398). For consortium arrangements the application must include the following additional information:

   a. A list of all proposed performance sites both at the applicant grantee institution and at the participating institutions.

   b. A separate, detailed budget for the initial and future years for each institution and, where appropriate, for each unit of activity at each institution.

   c. A composite budget for all units of activity at all institutions, for each year, as shown under b. above.

   d. An explanation of the programmatic, fiscal, and administrative arrangements made between the grantee institution and the cooperating institutions.

   e. The following statement must be included as part of the application:

      "The appropriate programmatic and administrative personnel of each institution involved in this grant application are aware of the NIH consortium grant policy and are prepared to establish the necessary inter-institutional agreement(s) consistent with that policy."

3. Written agreement The grantee institution must formalize in writing the agreement negotiated with each cooperating institution. The agreement must state the programmatic, fiscal, and administrative arrangement ensuring the compliance with all pertinent Federal regulations and policies and facilitating a smoothly functioning cooperative venture. A copy of each negotiated agreement must be sent to the awarding unit and is subject to NIH administrative review for completeness. If it is not possible to provide the NIH awarding unit with the required agreements prior to award, it will be necessary to impose appropriate award restrictions, pending receipt of the agreements.

   a. Programmatic considerations The agreement must identify the principal investigator and the responsible persons at each cooperating institution and describe their responsibilities in the project. Procedures for directing and monitoring the research effort must also be delineated.

   b. Fiscal considerations The agreement must cite specific procedures to be followed in reimbursing each cooperating institution for its effort and must include dollar ceiling, method and schedule of reimbursement, type of supporting documents required for reimbursement, and procedures for review and approval of expenditure of grant funds at each institution.

c. Administrative considerations Where policies of the cooperating institution differ from those of the grantee institution, (e.g., travel, travel reimbursement, salaries, and fringe benefits) a determination should be made and included in the agreement as to which policies will be applied. Usually the policies of the institution where the costs are generated are applied to those costs, provided any such policies are in compliance with those of NIH.

4. Assurances required by NIH The grantee institution has the specific responsibility for ensuring that all required assurances are obtained. The written agreement between the grantee institution and each cooperating institution must reflect the intent to fulfill all the requirements of the NIH and incorporate an understanding concerning at least the applicable assurances listed below:

a. Care and treatment of laboratory animals Each cooperating institution using warm-blooded animals in the grant-supported project will comply with applicable portions of the Animal Welfare Act (P.L. 89-544 as amended) and will follow the guidelines prescribed in DHEW Publication No. 72-23 (NIH), "Guide for the Care and Use of Laboratory Animals."

b. Civil rights and equal employment opportunity Each cooperating institution must comply with Title VI of the Civil Rights Act of 1964, and Executive Order 11246. The grantee must ensure that all cooperating institutions have a valid Assurance of Compliance with the Civil Rights Act of 1964 on file with the DHEW (Form HEW 441) and, if a contract is entered into, the contract will include paragraphs (1) through (7), Part II, Subpart B, Section 202, Executive Order 11246.

c. Protection of human subjects The grantee institution and the cooperating institutions should refer to DHEW Publication No. (NIH) 72-102, "The Institutional Guide to DHEW Policy on Protection of Human Subjects," and specifically Section B, "Special Assurances," p. 13 et seq. In addition to assuring that initial requirements for protection of human subjects are met in agreements between the grantee institution and the cooperating institutions, procedures also must be established to assure continued monitoring and compliance with these requirements during the course of the project.

d. Patents and inventions The fact that two or more institutions share in the grant-supported project does not alter the grantee institution's responsibilities concerning patents and inventions. The grantee institution should obtain appropriate patent agreements to fulfill the requirements from all persons who perform any part of the work under the grant and may be reasonably expected to make inventions. The grantee should insert into each such written agreement a clause making the patent and inventions policy applicable to each cooperating institution and its employees. Agreements should also be obtained by the

grantee to govern disposition of rights to inventions resulting from screening compounds synthesized under the grant.

e. Student unrest provisions Each cooperating institution will be responsible for carrying out the provisions relating to remuneration from grant funds to any individual who has been engaged or involved in activities described as "student unrest." (Section 407 of the DHEW Appropriations Act each year since FY 1970.)

f. Other Any other assurance normally required of the grantee institution for the program in question is also required of the cooperating institutions.

G. *ELIGIBLE COSTS*

1. Direct costs In general, any item of cost that is allowable under NIH policy for research grants may be requested in the application on behalf of both the grantee and cooperating institution(s). The expenditures are to be made in accordance with NIH policies generally applicable to research grants. The requests for costs such as foreign travel, alterations and renovations, and patient care must be accompanied by special justification.

2. Indirect costs Indirect costs for the grantee institution will be awarded routinely through the NIH Indirect Cost Management System (ICMS).

If indirect costs for a cooperating institution are required from the grant, they must be requested on the budget page as a direct cost. The amount to be requested is determined by applying the DHEW-negotiated indirect cost rate for the cooperating institution to the appropriate direct cost base being requested for that institution. In such cases, the indirect cost amounts requested for cooperating institutions should be viewed as fixed maximum amounts for each year. The amounts requested for a cooperating institution's indirect costs for future years should reflect anticipated increases or decreases in indirect cost rates for the periods of requested support. That is, indirect cost rates used for cooperating institutions may vary - up or down - from the rate applicable at the time the competitive (new, renewal, or supplemental) application is submitted. Any such variance from already negotiated rates should, however, be accompanied by an explanation.

In certain extenuating circumstances, and only after thorough discussion with and acceptance by the prospective awarding component, the following alternative plan may be utilized for the reimbursement of cooperating institutions' indirect cost:

> Each member institution of the consortium may request and claim the full indirect costs to which it is entitled based on the negotiated provisional rate, with final settlement when a final indirect cost rate is established for

all institutions involved. If this plan is proposed by the applicant and approved by the NIH awarding unit, the following procedures will obtain:

a. Indirect cost allowance at time of award Prior to an award for a consortium grant, the NIH awarding unit in consultation with the Indirect Cost Management System, Division of Financial Management, NIH, will calculate a "special" indirect cost rate for the consortium grant. This rate will be based entirely upon the rate currently being used by the DHEW for each component institution and will be used solely to determine the allowance at the time of award.

An example of the calculation is provided:

Institution	HEW Rate	Salary and Wage Base	Indirect Cost
A (grantee)	50%	$50,000	$25,000
B (cooperating)	25%	20,000	5,000
C (cooperating)	10%	50,000	5,000
TOTAL		$120,000	$35,000

"Special" award allowance rate for consortium =

$$\frac{\$35,000}{\$120,000} = 29.17\%$$

(The calculation can be adjusted to accommodate those situations where institutions may have other than an S and W base.)

b. Indirect cost claim in report of expenditures When the report of expenditures is submitted, the grantee institution will recalculate the appropriate indirect cost for each institution on any renegotiated indirect cost rates and/or any change in the base against which the new rate is to be applied.

The indirect cost claim reflected in the report of expenditures should represent the combined need of all institutions involved in the consortium, based on the pertinent information available at the time the report of expenditures is submitted. Information necessary to justify the total indirect cost claim must be provided as an attachment to the report of expenditures and must include the base, rate, and amount for each separate

institution in the consortium. The sum of the individual indirect cost claims is the total to be claimed in the report of expenditures.

c. Final settlement of indirect costs The amount of indirect costs at the time of award and at the time a claim is made in the report of expenditures is often based on a provisional rate. Final settlement is based on the establishment of a final rate. Indirect cost final settlement for a particular consortium grant cannot be submitted, under this plan, until all institutions concerned have negotiated final rates with the DHEW. When the last final rate has been negotiated for the various institutions in the consortium, **the grantee must assume responsibility** for compiling the data necessary to complete the summary report of expenditures adjustment sheet, which includes not only the grantee institution but also each cooperating institution. These data will be submitted to the Indirect Cost Management System, DFM, NIH, for settlement outside the automated routine used for other types of grants.

H. Other Administrative Considerations

1. Rebudgeting authority of cooperating institutions Rebudgeting between budget categories on the part of non-grantee cooperating institutions must have the prior approval of the grantee institution unless the grantee institution has established in the written agreement moderate levels of rebudgeting authority within PHS policy limitations with each of the cooperating institutions. In any case, the grantee institution must be responsible for assuring that the combined rebudgetings of both the grantee institution and cooperating institutions are consistent with PHS policy and that rebudgeting requests receive appropriate review.

2. Audit guidelines All costs incurred in the consortium grant will be subject to audit by the cognizant Federal audit agency. Upon request, cognizant Federal auditors will be provided access to records supporting grant-related costs of the cooperating institutions.

3. Cost-sharing guidelines The grantee institution is responsible to the NIH awarding unit for the entire contribution to the total cost of the research project, either under an individual or institutional cost-sharing agreement with the DHEW. The written agreement negotiated with each cooperating institution may include an arrangement whereby the cooperating institution will cost-share in proportion to its participation in the total project. Any negotiated arrangement for multi-institutional cost-sharing participation should be a part of the written agreement.

4. Equipment accountability and disposition Initially, title to all equipment purchased with grant funds resides with the grantee institution. The grantee institution has the responsibility for the inventory, accountability, and disposition of equipment in accordance with PHS policy.

5. Grant-related income The written agreement should establish the understanding that the grantee institution is accountable for the NIH's share of grant-related income. The grantee is responsible for the records of receipt and disposition of such income. The cooperating institution(s) will maintain records as necessary for the grantee institution to fulfill its responsibility.

6. Publications The grantee institution and the cooperating institution(s) should have an initial, general agreement regarding authorship on research reports and other publications.

I. Reporting Requirements In order for the grantee institution to satisfy all of the various reporting requirements (e.g., progress report, report of expenditures, invention statement), it is necessary for each cooperating institution to provide the grantee with certain kinds of documentation. The written agreement must reference this need by stating the kinds of documentation required by the grantee as well as the timing of their submission.

J. Effective Date This policy is effective for all new and competing renewal grants with beginning dates on or after January 1, 1976. Grantee institutions which now have consortium grants are encouraged to adopt the principles contained in this policy as soon as practicable.

CANCER RESEARCH EMPHASIS GRANTS
(CREG)

A N N O U N C E M E N T

TITLE - *NON-THERMAL EFFECTS OF MICROWAVES ON LIVING TISSUE*

SCIENTIFIC PROGRAM REQUIREMENT The National Cancer Institute is accepting applications for support of research projects dealing with the non-thermal effects of microwaves on living tissues.

Microwave absorption spectra are to be measured on one or more of the following classes of tissues:

(1) representative normal and malignant tissues,

(2) normal and transformed cell lines,

(3) a variety of standard tumor strains in tissue culture where comparable normal strains are available.

These spectra will be determined with sufficient resolution and over sufficiently wide frequency intervals to permit correlation with previously established normal and tumor absorption progressions. Experimental conditions must be such that no appreciable sample temperature elevation occurs. Examination of measured samples by standard cytological techniques will be performed to the degree necessary to confirm identity and integrity. Thorough consideration should be given to the perfusion, nutrition, and mitotic state of tissues during measurements.

Examination of the influence of microwave absorption upon vibrational and rotational modes is to be performed by simultaneous observation of these modes by other physical probes.

Tentative attribution of observed microscopic effects will be made to possible events on an organizational, organelle, molecular, or transport level. This study of mechanisms of interaction is to be made in an effort to present observed effects in a meaningful context and to provide guidance in seeking correlative observations. Consideration may be given to measurement of progressive spectral changes accompanying tissue treatment with known carcinogens or anti-neoplastic agents.

SIGNIFICANCE TO NCI PROGRAM GOALS This research knowledge is sought to assist in the exploration of non-traditional modalities of cancer treatment. Specific goals which may be supported are:

(1) the development of sensitive means to discriminate and identify tumor cells in normal host tissues,

(2) the discovery of differential tumor/host effects to be exploited alone or as a means of potentiating other modes of treatment,

(3) to further understanding of the basic mechanisms of tumorgenesis, and

(4) to provide a data base of organized quantitative parameters of malignancy to facilitate subsequent investigations.

APPLICATION REQUIREMENTS

1. *ELIGIBILITY* Nonprofit organizations and institutions, State and local governments and their agencies, authorized Federal institutions, and individuals according to NIH grants policies.

2. *THE APPLICATION* Applicants should propose an individual project. Applicants may elaborate on the purposes, objectives, rationale, and significance stated in this announcement and must complete portions of the application pertaining to procedural details, the investigagor's related experience, facilities available, budgets, and biographical information for key professional personnel. The application should also state the duration of time for which the support is requested. It is anticipated that the project period will not exceed three years, and that the level of effort per year will approximate one to three professional man-years and two to four technician man-years.

3. *SUBMISSION* Use the standard grant application form NIH 398. In both the covering letter and at the top of the space provided for an abstract on page 2 of the application, identify this CREG announcement by its title and the number DCT-2 and the date of publication as the one to which the application responds. Mail the application and letter to Division of Research Grants, National Institutes of Health, Bethesda, Maryland 20014. If your institution cannot supply you with form NIH 398, it may be requested from the Division of Research Grants.

4. *RECEIPT DATE* Applications received on or before February 1, 1976, will be processed for study section review in June 1976.

REVIEW

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

DRG will not accept an application in response to a CREG announcement that is identical to one concurrently being considered by NCI or other NIH awarding units.

For further information, potential applicants may contact Dr. Vincent T. Oliverio, (301) 496-4386, Division of Cancer Treatment, National Cancer Institute.

TITLE - *EXPERIMENTAL COMBINED MODALITY (RADIOTHERAPY - CHEMOTHERAPY) STUDIES (ECMRC)*

SCIENTIFIC PROGRAM REQUIREMENT The National Cancer Institute is accepting applications for support of research projects in experimental combined modality (radiotherapy - chemotherapy) studies (ECMRC).

The Division of Cancer Treatment, NCI, desires to support research studies on the preclinical evaluation of combinations involving chemotherapy and radiotherapy. Systems to be used may be in vitro or in vivo or a combination thereof. The purpose of these studies will be either to uncover a potentially positive interaction between radiotherapy and drugs drawn from a selected group of antitumor agents or to elucidate how single drugs and radiotherapy might interact optimally with the goal of aiding investigators who might be attempting to combine them clinically.

The Division of Cancer Treatment currently has investigational studies of some type in progress with over 100 anticancer drugs, all of which either have proven or potential clinical anticancer activity. It is desired to investigate these drugs in some manner in combination with radiation to uncover a potential positive interaction with the latter modality. Drugs exhibiting this potential will be considered for further more detailed, preclinical investigation to confirm the positive interaction. Ultimately, they will be considered for clinical evaluation with X ray in an attempt to validate the predictions of the experimental model.

There are several drugs with proven cytotoxic activity against a wide range of radioresponsive tumors. Examples of such drugs are cytoxan, adriamycin, methotrexate, and 5-FU. These already have been tested to some extent with radiotherapy, without positive results. Recognizing the manifold variables of schedule, sequence, and ratio there are at least 300 ways a single drug could be combined with radiotherapy in the treatment of any individual tumor type. Given the massive number of possible therapeutic combinations, it is clear that only a tiny fraction can be actually evaluated in patients. It is therefore desirable to develop new systems and refine existing ones that might aid the clinician in selecting a potentially optimum sequence, schedule, and ratio of drugs and X ray.

The grantee will describe in depth his experimental approach to the problem of combining drugs and X ray and give explicit details about the systems to be used (in vitro, in vivo, or both).

As an example, one of the approaches may be in vitro testing with cultured mammalian cells which could permit the assessment of the following drug-radiation properties: (a) the age-response function of a drug in respect to that of radiation, (b) the effect on cell cycle progression of a radiation and/or a drug exposure, and (c) the presence or absence of damage interaction due to radiation and a drug. With the foregoing in mind, an in vitro testing system could be structured as follows:

Asynchronous cells Three states of asynchronous populations could be considered: (a) log phase, (b) plateau or stationary phase, and (c) spheroidal growth.

Synchronous cells Here, the principal approach would be to delineate cell-cycle dependencies or age-response functions. The same combinations of treatments proposed for asynchronous cells should be pursued with the main modification being emphasis on single or combined doses followed through the cycle.

Intracellular modes of action Studies at this level of inquiry would be less predictable, but no less important when required, than those preceding. To explain qualitative and perhaps quantitative differences among cell lines, the possible areas of inquiry include drug transport, effects on macromolecular synthetic pathways, the stimulation or inhibition of enzymatic activity, and damage/repair observations involving nucleic acids.

If an in vivo system is to be used it should be described in detail, including its origin, development, reproducibility, kinetics, and response to therapies evaluated to date. For each normal or tumor system a quantitative end point should be reported. Examples of such end points are TCD_{50} estimates for single and multifraction doses, survival of normal or malignant clonogenic cells assayed in vivo and in vitro, regression-regrowth curves, survival rates and/or times, etc. When possible a differential between normal and neoplastic tissue response should be determined. Correlation of in vivo and in vitro responses would also be advantageous.

Studies should be directed at obtaining an understanding of how the two modalities (drug + X ray) are combining. Studies can also be made of the time, degree, and dose dependence of recruitment of non-cycling cells by radiation to help in the determination of optimal times for the administration of cycle-active chemotherapeutic agents. These studies should be undertaken with appropriate tumor systems and with selected normal cells.

SIGNIFICANCE TO NCI PROGRAM GOALS This project is highly relevant to the program objectives of the Division of Cancer Treatment. The strong emphasis on extension of clinical application of the combined modality of radiation plus chemotherapy necessitates the undertaking of fundamental pre-clinical developmental programs by DCT in this area. To date we have no systematic ongoing program covered by the scope of this project, which is in direct line with program objectives. In order to provide an appropriate basis for the clinical application of radiation plus chemotherapy, the pre-clinical studies are most important. They are necessary in order to identify experimental models in which treatment with radiation alone, chemotherapy alone, and radiation plus chemotherapy will predict appropriately for clinical application. This necessitates detailed characterization of the influence of the individual and combined modalities in a spectrum of tumor systems.

APPLICATION REQUIREMENTS

1. *ELIGIBILITY* Nonprofit organizations and institutions, State and local governments and their agencies, authorized Federal institutions, and individuals according to NIH grants policies.

2. *THE APPLICATION* Applicants should propose an individual project. Applicants may elaborate on the purposes, objectives, rationale, and significance stated in this announcement and must complete portions of the application pertaining to procedural details, the investigator's related experience, facilities, available budgets, and biographical information for key professional personnel. The application should also state the duration of time for which the support is requested. It is anticipated that the project period will not exceed five years, and that the level of effort per year will approximate two to three professional man-years and two to three technician man-years.

3. *SUBMISSION* Use the standard grant application form NIH 398. In both the covering letter and at the top of the space provided for an abstract on page 2 of the application, identify this CREG announcement by its title and the number DCT-3 and the date of publication as the one to which the application responds. Mail the application and letter to Division of Research Grants, National Institutes of Health, Bethesda, Maryland 20014. If your institution cannot supply you with form NIH 398, it may be requested from the Division of Research Grants.

4. *RECEIPT DATE* Applications received on or before February 1, 1976, will be processed for study section review in June 1976.

REVIEW

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

DRG will not accept an application in response to a CREG announcement that is identical to one concurrently being considered by NCI or other NIH awarding units.

For further information, potential applicants may contact Dr. Vincent T. Oliverio, (301) 496-4386, Division of Cancer Treatment, National Cancer Institute.

TITLE - *ETIOLOGY OF CANCER IN SPECIAL POPULATIONS*

SCIENTIFIC PROGRAM REQUIREMENT The National Cancer Institute is accepting applications for support of research projects on the etiology of cancer in special defined populations. The NCI Division of Cancer Cause and Prevention desires to expand the search for new leads on the etiology of cancer through studies of well-defined populations thought to be at high or low risk for cancers of specific sites. Examples of populations of interest include ethnic, religious, and occupational groups such as American Indians, Polynesians, Mormons, Seventh-Day Adventists, farmers and industrial workers exposed to chemical and physical agents which may also affect the general population. Proposals should include a description of the defined population, and should indicate the advantages of the specific observational setting.

The investigator should present evidence of capabilities and requirements for further defining, monitoring, and studying such populations for disease experience, related factors, etc. The ability to design and carry out analytical epidemiologic studies, either retrospective or prospective, involving collection of data over and above the normal cancer registry routine is essential. Investigators will be encouraged to collect specimens and observations for use in collaboration with other investigators.

SIGNIFICANCE TO NCI PROGRAM GOALS It is anticipated that epidemiologic research supported by this CREG program will produce significant new information which will help achieve the objectives of the National Cancer Plan. This research should help to achieve an accurate assessment of the risk of developing cancer in certain subgroups of the population, and should identify environmental or host factors which can be modified in order to reduce the incidence and mortality of cancer. The resulting information will be made available to health professionals and the general public.

APPLICATION REQUIREMENTS

1. *ELIGIBILITY* Nonprofit organizations and institutions, State and local governments and their agencies, authorized Federal institutions, and individuals are eligible according to NIH grants policies.

2. *THE APPLICATION* Applicants should propose an individual project. Applicants may elaborate on the purposes, objectives, rationale, and significance stated in this announcement and must complete portions of the applications pertaining to procedural details, the investigator's related experience, facilities, available budgets, and biographical information for key professional personnel. The application should also state the duration of time for which the support is requested. It is anticipated that the project period will not exceed five years, and that the level of effort per year will approximate one to two professional man-years.

3. *SUBMISSION* Use the standard grant application form NIH 398. In both the covering letter and at the top of the space provided for an abstract on page 2 of the application, identify this CREG announcement by its title and the

number DCCP-14 and the date of publication as the one to which the application responds. Mail the application and letter to Division of Research Grants, National Institutes of Health, Bethesda, Maryland 20014. If your institution cannot supply you with form NIH 398, it may be requested from the Division of Research Grants.

4. *RECEIPT DATE* Applications received on or before February 1, 1976, will be processed for study section review in June 1976.

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DRG will not accept an application in response to a CREG announcement that is identical to one concurrently being considered by NCI or other NIH awarding units.

For further information, potential applicants may contact Dr. James L. Murray, (301) 496-3116, Division of Cancer Cause and Prevention, National Cancer Institute.

TITLE - *PATHOLOGY AND EPIDEMIOLOGY OF SPECIFIC CANCER SITES*

SCIENTIFIC PROGRAM REQUIREMENT The National Cancer Institute is accepting applications for support of research projects that represent a coordinated multi-disciplinary (epidemiology-pathology) approach to the study of site-histology complexes of tumors and other methods that may identify subsets of tumors with different etiologies. Epidemiology and pathology studies indicate that tumors of individual anatomical sites may represent a mixture of two or more types and etiologies. Preferences will be given to work on specific sites not included in ongoing NCI site-oriented task force programs. NCI currently has task forces on breast, lung, bladder, prostate, pancreas, and large bowel cancer.

Proposals from groups with multi-disciplinary capabilities in geographic pathology, epidemiology, biostatistics, experimental carcinogenesis, etc., with an orientation to specific sites are desired. The capability of developing and integrating sophisticated pathology studies (development and testing of new type criterion, organ bank studies of precursor lesions, etc.) within existing epidemiology resources (for example, the SEER program of cancer Surveillance, Epidemiology and End Results reporting supported by NCI) to expand the current range of descriptive and analytical epidemiology studies for specific sites is desirable.

Capability for integrating developments in epidemiology and animal experimentation, and developing etiologic hypotheses that can be tested by epidemiologic observations and/or laboratory work are desired. Long-term support is contemplated and proposals should develop a study rationale for a sequence of activities over a period of up to five years.

SIGNIFICANCE TO NCI PROGRAM GOALS It is anticipated that pathologic and epidemiologic research supported by this CREG program will produce significant new information which will help achieve the objectives of the National Cancer Plan. This research should help to achieve a more refined assessment of the risk of developing specific types of cancer in various subgroups of the population. This information may in turn lead to new clues about environmental and host factors associated with the specific disease. Preventive measures to reduce the cancer incidence, morbidity and mortality will then be based on modification of the associated factors.

APPLICATION REQUIREMENTS

1. *ELIGIBILITY* Nonprofit organizations and institutions, State and local governments and their agencies, authorized Federal institutions, and individuals according to NIH grants policies.

2. *THE APPLICATION* Applicants should propose either an individual project or a multi-disciplinary program project. Applicants may elaborate on the purposes, objectives, rationale, and significance stated in this announcement

and must complete portions of the applications pertaining to procedural details, the investigator's related experience, facilities, available budgets, and biographical information for key professional personnel. The application should also state the duration of time for which the support is requested. It is anticipated that the project period will not exceed five years, and that the level of effort per year will approximate one to two professional man-years for an individual project or three to four professional man-years for a program project.

3. *SUBMISSION* Use the standard grant application form NIH 398. In both the covering letter and at the top of the space provided for an abstract on page 2 of the application, identify this CREG announcement by its title and the number DCCP-15 and the date of publication as the one to which the application responds. Mail the application and letter to Division of Research Grants, National Institutes of Health, Bethesda, Maryland 20014. If your institution cannot supply you with form NIH 398, it may be requested from the Division of Research Grants.

4. *RECEIPT DATE* Applications received on or before February 1, 1976, will be processed for study section review in June 1976.

REVIEW

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

DRG will not accept an application in response to a CREG announcement that is identical to one concurrently being considered by NCI or other NIH awarding units.

For further information, potential applicants may contact Dr. James L. Murray, (301) 496-3116, Division of Cancer Cause and Prevention, National Cancer Institute.

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