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NCI TO SPONSOR ITS OWN PREDOCTORAL TRAINING AT SOME INSTITUTIONS WITH POSTDOCTORAL AWARDS

NCI has decided to undertake its own predoctoral research training program under the authority of the National Research Service Act, rather than contribute to the support of predoctoral programs sponsored by the National Institute of General Medical Sciences (*The Cancer Letter*, Jan. 24).

NCI's predoctoral training awards will be tied to the institute's postdoctoral program. Institutions which receive support for NCI postdoctoral fellowships will be eligible for predoctoral awards.

Applications for both programs must be in by Feb. 15. Awards will be announced in June, with a July 1 beginning date.

NCI has allocated $8.6 million for National Research Service Awards.

(Continued to page 2)

In Brief

GAO SAYS SCHOLARSHIPS AND LOANS ARE FAILURES; SUGGESTS MED SCHOOLS NEED FACILITIES, TEACHERS

LACK OF TEACHING facilities and shortage of teachers are the primary factors in limiting output of medical and dental schools, the General Accounting Office reported. The congressional watchdog agency said federal student loan and scholarship programs have not achieved their goals of increasing the number of graduates, improving their quality or inducing them to serve in shortage areas. HEW disagreed, said it was impossible to measure impact of those programs which are part of other efforts to improve the health manpower pool .... **GAO ALSO** criticized the National Institute for Occupational Safety & Health for failure to develop comprehensive standards for toxic substances and harmful physical agents found in workplaces. NIOSH is one of the agencies NCI is working with to identify and reduce occupational carcinogens. . . . **NCI's CLINICAL** Investigations Review Committee will sponsor a conference or symposium on epidemiology next fall; no date has been selected. The Div. of Research Resources & Centers is still looking for a clinical investigations program director. The job has been vacant since William Hammond left last summer. Clare White is acting program director. . . . **GIO GORI**, who has been acting deputy director of NCI's Div. of Cause & Prevention, now has the job on a permanent basis. He'll continue as chairman of the Tobacco Working Group and will run the new nutrition research program. . . . **ROBERT LOVE** has left his position as professor of pathology at Jefferson to join NCI as chief of the program analysis and formulation branch. . . . **FORD ADMINISTRATION'S** budget for the 1976 fiscal year will be released Monday. Those in the cancer program won't be happy with the amount asked for NCI, and will be less happy about the $125 million in cuts asked by the President from the amount voted by Congress for 1975.

EIGHT RESEARCH AREAS OK FOR INDIVIDUAL TRAINING, FOUR FOR INSTITUTION AWARDS

(Continued from page 1)

That figure is firm, and will not be affected by any cuts in the current fiscal year budget. That amount would fund approximately 619 individual fellowships, but that number would be reduced by the use of some of the money to cover predoctoral awards.

Predoctoral awards will be limited to four research areas—carcinogenesis, epidemiology, drug development and radiation. Postdoctoral awards will be made in those four areas plus immunology, tumor biology, viral oncology and chemotherapy.

NCI described its requirements in each of those areas as follows:

* **Carcinogenesis.** The carcinogenesis program supports a broad range of studies collectively concerned with the achievement of a more effective prevention of cancer in man, caused or promoted by chemical or physical agents, or by the interaction of chemical carcinogens with biological agents.

The main focus of the program is on the action and mechanism of action of chemical and physical carcinogens, the evaluation of factors which initiate, promote, or otherwise alter the action of chemical and physical carcinogens, the nature and interpretative significance of biochemical changes in physiological compounds and processes produced by chemical carcinogens, the characteristic biochemistry of the cancer cell, the influence of cancer on the biochemistry of the host, and the role of hormones in cancer.

The program also supports basic research in the biochemical sciences, principally intended to provide or promote significant comparisons between tumorous and normal tissues.

* **Chemotherapy.** Research training in chemotherapy encompasses a wide range of scientific activities related to drug treatment for cancer in man. The areas of endeavor for which fellowship applications will be considered include the following:

I. Clinical Therapeutics

A. Phase I Studies: Exploration of the toxicity of potentially useful antitumor drugs in man.

B. Phase II Studies: Evaluation of the antitumor potential of new drugs or new combinations of drugs in various human neoplasms.

C. Phase III Studies: In prospective, controlled clinical trials, assessment of the effects of a new agent or new combinations of agents in comparison with standard regimens.

D. Adjuvant Studies: Determination of the potential additive effect which drugs may contribute when combined with surgery, radiation therapy, or immunotherapy.

II. Developmental Studies

Investigations which will serve as the basis for the development of improved drug treatment programs involving humans with cancer through the use of animal models, pharmacologic and biochemical predictive tests, cytogenetic analyses, cellular kinetics, etc.

III. Drug Toxicity

A. Preventive Care: Exploration methods of protecting normal tissue during drug treatment programs.

B. Supportive Care: Development of more efficient means of protecting patients during the complications arising from drug treatments.

IV. Cancer Related Disorders

Studies which explore the numerous troublesome clinical problems (e.g., hypercalcemia) which occur in cancer patients and which may interfere with the effectiveness of drug treatment programs.

* **Drug Development.** The scope of the drug development program area concerns development and evaluation of chemotherapeutic agents which act specifically or selectively against malignant growth with minimal toxicity to the subject host. The objectives involve research in the chemical, biological, and cellular aspects of abnormal as well as normal growth processes. Therefore, in addition to investigations directly concerned with control of neoplastic growth, the program may include some broadly based fundamental studies in several biomedical disciplines.

The principal categories in the program area are as follows:

1. Synthesis and isolation: Preparation of potential anti-cancer agents through synthetic chemical processes or by isolation from microbial, plant or animal sources. Studies of structure determination and identification of known and potential chemotherapeutic compounds, including analogs of metabolic intermediates or aggregates.

2. Preclinical drug evaluation: Screening tests for anti-cancer activity, experimental therapeutics and toxicologic and other pharmacologic studies, criteria for selection of safe and effective dose regimens, countermeasures for toxicity.

3. Mechanisms of drug action: Physiological disposition and drug metabolism, biotransformations, mode of action relating to anti-tumor and pharmacologic responses. Basic studies for understanding of the mechanisms of growth inhibition; cell kinetics.

4. Research program projects and centers: Broad multidisciplinary projects or intensive effort for total drug evaluation including research in synthesis, experimental therapeutics, preclinical toxicology, pharmacology, mechanisms of drug action and clinical pharmacology.

* **Epidemiology.** Cancer epidemiologic and biometric interests range from highly specific epidemiologic research into cancer cause or prevention through data collection and analysis to the evaluation of cancer treatment, control and rehabilitation programs; and from personal research through administrative responsibility for epidemiologic or biometric

programs in cancer centers, health departments or academic institutions.

The overall objective of cancer epidemiologic and biometric training is to assist interested well qualified individuals to acquire knowledge of basic and clinical sciences relevant to oncology, as well as epidemiologic and statistical or biomathematical skills. The breadth of cancer research, ranging from investigations into the biology of normal cells to clinical and social complications associated with cancer in particular patients, should be borne in mind.

The overall preparation should be broadly based to permit adequate comprehension of complications likely to be encountered in developing, or assisting with, specific studies. The need for preparation at varying academic levels and for varying lengths of time depending upon the trainee's background and future plans is recognized.

Collaborative arrangements between institutions offering expertise in clinical and laboratory sciences and those with expertise in epidemiology and statistics is encouraged for recruitment, training and placement.

The major emphasis in the research grants program in recent years has been in epidemiology, using demographic, laboratory and clinical measures to define the probable contributions to human malignancies of factors such as viral infections, carcinogenic chemicals, radiation exposure, endogeneous and exgenous hormones, genetic predisposition and nutrition.

Since biometrics and biomathematical analyses are used in defining probabilities that one or more of these agents cause cancer, research concerned with improved analytic and biomathematical techniques is naturally related to the epidemiology program.

Ongoing studies are concerned with such topics as improved techniques for epidemiologic analysis; modeling of tumor behavior under varying conditions of treatment or genetic or biologic environment; and the development of computer technology to augment cancer research. Similarly, psychological and social variables are among the demographic measures which are useful in defining similarities or differences between persons susceptible or not susceptible to cancer.

Research is concerned with the effectiveness of intervention, as well as defining characteristics which cancer patients have in common. Studies which improve the quality of clinical data, such as those concerned with standardization of disease classification, are also supported.

* **Immunology.** In the belief that a thorough understanding of the myriad facets of immunology is necessary to the goal of adequate diagnosis, therapy and prevention of human cancer, the immunology program emphasizes studies not only directly concerned with cancer, but also more basic studies in immunology.

The neoplastic cells arising from virus and carcinogen induced tumors in experimental animals have antigens against which the host mounts an immune response. A similar situation exists in human patients with malignant tumors. A further understanding of both the cellular and humoral aspects of the immune response will provide a rationale for the specific diagnosis, therapy and prevention of cancer in man.

Results of basic studies in immunology–not necessarily with tumor antigens, but applicable to tumor antigens–as well as direct experimentation with animal and human tumors, may provide this understanding.

* **Radiation.** The radiation program supports projects in radiation oncology (therapeutic, and related diagnostic and nuclear, radiology) to develop new radiotherapeutic approaches, techniques and equipment, study underlying biologic mechanisms and tissue tolerance and carry out clinical trials with radiation, alone and with other modalities (chemotherapy, radioimmunotherapy, etc.).

Clinical radiation oncology is devoted exclusively to cancer patient management and is contributing to an increasing degree to improvement of care of cancer victims. Fellowships and training in experimental radiation oncology, tumor radiation biology, and medical radiation physics have contributed substantially to developing and maintaining this momentum.

However, recent advances in particle radiotherapy, thermoradiotherapy, brachycurietherapy, and computer-optimized radionuclide, ultrasonic and X-ray axial scanning and treatment have generated an urgent requirement for additional research training for more than 240 scientists in all those disciplines concerned with radiation oncology investigations.

* **Tumor Biology.** The tumor biology program provides for fundamental information on the causes and nature of cancer with the expectation that better methods of detection, diagnosis, prevention and treatment can be obtained. One of the primary emphasis of the program concerns preneoplastic and neoplastic lesions in man and higher animals, except for those related to viruses and chemical carcinogenesis.

The program is also concerned with those cancer related biological disciplines that may not specifically involve tumor tissue and systems but may be of particular interest because of the hope and expectation that specific contributions may be made toward the goals of cancer research.

Another important aspect of the tumor biology program is the biochemical studies of physiologically active compounds and processes which might promote significant comparison between malignant and non-malignant systems.

* **Viral Oncology.** The viral oncology program consists of cancer virology and related investigations.

Cancer virology is concerned with the role of viruses in the etiology of cancer and the consequences

of this for identification of susceptible individuals, early diagnosis, and development of new modes of prevention and treatment. Investigations include the biological, biochemical and physical properties of oncogenic viruses, and their interactions with and effects on their hosts at all levels of biological organization, i.e. molecular, cellular and organismal. Research on the mechanism of viral oncogenic transformation, the significant phenotypic expressions resulting from transformation, and the regulation of these processes, occupy a major aspect of the program.

Investigation of gene expression and cell regulatory functions, utilizing viruses as tools, are also an important part of the viral oncology program. The mechanism of genetic recombination; of integration (or excision) of viral or other genetic information with (or from) cellular genes; mechanism and regulation of transcription, especially of viral genes and of cellular gene modified or influenced of viruses; mechanism and regulation of translation, especially of viral information or viral-coded information, role of viruses in development and differentiation, and transmission of cellular information by viruses or by other means are examples of research in this segment of the program.

Final regulations governing National Research Service Awards have not yet been published in the *Federal Register.* Changes from the proposed guidelines previously released by NIH therefore could still be made. However, any changes probably would be minor.

The proposed guidelines, including stipends and other training costs and details of the payback provisions, follow:

Domestic nonprofit private or non-federal public institutions may apply for grants to support training programs in specified areas of research from which a number of awards will be made to individuals selected by the institution and the program director. Pre- and postdoctoral trainees may be supported if either or both level(s) of training are justified and approved in the application. The applicant institution must have, or be able to develop, the staff and facilities required for the proposed programs. The training program director at the institution will be responsible for the selection and appointment of trainees to receive National Research Service Awards and for the overall direction of the program.

The proposed program must encompass supervised biomedical research training in the specified areas, and offer opportunity for research training leading toward the research degree, or, in the case of research health scientists, research clinicians, etc., to broaden their scientific background. National Research Service Awards (NRSA) are not made for study leading to the MD, DO, DDS, or other similar professional degrees. Neither will these awards support non-research clinical training.

Application materials may be obtained from the Grants Inquiries Office, Div. of Research Grants, NIH, Bethesda, Md. 20014. If a self-addressed gummed mailing label is enclosed in the request for kits, it will expedite handling.

NIH reserves the option of rejecting without further review all or part of an application that in its judgment does not fall within the specified areas of research that are currently being supported or for which support of predoctoral training is not offered. Institutions contemplating submission of an application including predoctoral training should contact the appropriate person shown on the list of research areas. (In the case of NCI, contact Helen Denson, 301-496-7895.)

NRS grant applications will be evaluated by initial peer review groups at the NIH and are also subject to review and approval of the appropriate advisory council of the NIH whose activities relate to the research training proposed. The application will be evaluated on the basis of records and qualifications of participating faculty, the proposed research training objectives and program design, previous training record of the program and its ability to attract high caliber students, institutional commitment, facilities and environment, and relationship of the proposed program goals to need for research training in NIH program areas.

Individuals appointed as trainees on the grant must be citizens or non-citizen nationals of the United States, or have been lawfully admitted to the United States for permanent residence and have in their possession a permanent visa at time of appointment. A non-citizen national is a person who although not a citizen of the United States, owes permanent allegience to the United States. They are generally persons born in lands which are not States, but which are under United States sovereignty, jurisdiction, or administration (e.g., American Samoa). Individuals on temporary or student visas are not eligible.

Predoctoral trainees must have received an appropriate baccalaureate degree as of the date of appointment to the approved training program. An individual at the postdoctoral level must have received as of the date of appointment to the approved training program a PhD, MD, DDS, DO, DVM, OD, ScD, DEng, DNS, or equivalent domestic or foreign degree.

Stipends and allowances requested will be in accordance with the following: For predoctoral, an annual stipend of $3,000 for individuals at all levels, an allowance of $600 annually for each eligible dependent, and an allowance for tuition.

For Postdoctorals, the stipend level is determined by the number of years of relevant postdoctoral experience at the time of appointment. Research experience (including industrial), teaching, internship, residency, etc., may be considered relevant experience. An allowance of up to $1,000 for each post-

doctoral awardee (in lieu of tuition, fees, and travel) will be provided. No dependency allowance is available for postdoctoral individuals.

Postdoctoral Stipends

Years of Relevant Experience at Entry	Year of Award		
	1st Year	2nd Year	3rd Year
0	$10,000	$10,400	$10,800
1	10,800	11,200	11,600
2	11,500	11,900	12,300
3	12,200	12,600	13,000
4	12,800	13,200	13,600
5 or more	13,200	13,600	14,000

Stipend supplementation from non-federal funds will be permitted.

In addition to the stipends and allowances for the trainees, the institution may request up to 25% of the total award for other related costs (salaries, equipment, supplies, etc.) which are deemed essential to carry out the program of training for the National Research Service Awardees appointed under the grant. Actual indirect costs or 8% of allowable direct costs, whichever is less, may also be requested.

Awards for institutional grants may be made for project periods of up to 5 years. However, no individual may receive more than three years of support in the aggregate from a National Research Service Award. Any exception to this requires a waiver from the Agency head based on review of justification from the trainee and the grantee institution.

No trainee will be appointed unless he or she has signed and submitted a statement of intent to meet the service or payback provisions required under the law as a condition under which a National Research Service Award is made and accepted. Trainee appointments are made for full-time research training and research. Trainees may utilize some of their time in academic studies and clinical duties if such work is closely related to their research training experience.

A NRSA recipient may not hold another federally sponsored fellowship or training award concurrently with a National Research Service Award. A research trainee may, however, accept concurrent educational remuneration from the Veterans Administration (e.g., G.I. Bill) and loans from federal funds.

Upon completion of the program, recipients of NRS Awards are required to engage in biomedical research or teaching for a period equal to the period of support. Alternatively, if the secretary, HEW, determines there are no suitable health research or teaching positions available to the individual, the following may be authorized: (1) If the individual is a physician, dentist, nurse, or other individual trained to provide health care directly to patients, the secretary may authorize (a) service in the National Health Service Corps, (b) service in his or her specialty in a geographic area designated by the secretary, or (c) service in the specialty in a health maintenance organization serving a medically underserved population. (2) If the individual who received the NRS Award is not trained to provide health care to patients, the secretary may authorize the individual to engage in some other health-related activity. For each year for which an individual receives a NRS Award he or she shall (a) engage in 12 months of health research or teaching, (b) serve 12 months as a member of the National Health Service Corps, or (c) if authorized by the secretary for one of the other alternatives, shall serve 20 months for each year of award.

For individuals who fail to fulfill their full service obligation the United States is entitled to recover an amount equal to the stipend received from the NIH plus interest in accordance with a formula which gives one-half credit to months actually served in the computation of a the payback debt.

The secretary shall by regulation provide for the waiver or suspension of any payback obligation to an individual whenever compliance by the individual is impossible or would involve extreme hardship to the individual and if enforcement of the individual's obligation would be against equity and good conscience.

NIH takes no position on the taxability or nontaxability of National Service Award stipends. Recipients of the NRS Award stipend are advised to consult local, state and federal revenue services.

ACCC MEETING IN WASHINGTON TO FEATURE PROVOCATIVE WORKSHOPS, COMMUNITY AID

With provocative workshop sessions such as "Money for cancer programs—where is it?", and "Does your hospital understand quality cancer care? Why not?", more than 100 are expected to attend the Assn. of Community Cancer Centers meeting this weekend (Feb. 1 and 2) in Washington D.C.

The meeting, at the Marriott Key Bridge Hotel, will start at 9 a.m. Saturday with a report by ACCC President James Donovan. C.D. Pruitt, of C.D. Pruitt & Associates, will follow with a discussion of National Cancer Program guidelines and NCI grant applications.

Other items at the morning session will include:

Problems with a cancer program in a nonurban hospital, by David Wishart, Olympia, Wash.; cancer networks, Simeon Cantril, San Francisco; relationships of an established community hospital cancer program to smaller hospitals and to the larger comprehensive cancer centers, James Luce, Boise, Idaho; and development of a hospital-based cancer program as seen by a hospital administrator, by James Sauer, Los Angeles.

The workshops will be conducted concurrently at the afternoon session. They include in addition to the two mentioned above:

Cancer care in your community—is it good enough? Establishing community cancer programs—could you use help? Does your tumor registry help you? Why

not? Can a comprehensive cancer center help you? How?

Workshop reports will be presented at the Sunday morning session, followed by discussion on possible services ACCC will offer to members–development of a community assistance service; a catalog for information resource; communications service; studies of tumor registry, clinical criteria, and drug cost, availability and purchasing; and professional, public and legislative educational programs.

Rep. Daniel Flood (D-Pa.), chairman of the House HEW Appropriations Subcommittee, will address the group, as will Mrs. Mary Lasker, president of the Albert and Mary Lasker Foundation; Harley Dirks, staff director of the Senate HEW Appropriations Subcommittee; NCI Director Frank Rauscher; and possibly James Cavanaugh, member of the White House Domestic Council.

President Ford, who earlier had indicated he might make an appearance at the meeting, decided later he could not.

RFPs AVAILABLE

Requests for proposal described here pertain to contracts planned for award by the National Cancer Institute, unless otherwise noted. Write to the Contracting Officer or Contract Specialist for copies of the RFP. Some listings will show the phone number of the Contract Specialist, who will respond to questions about the RFP. Contract Sections for the Cause & Prevention and Biology and Diagnosis Divisions are located at: NCI, Landow Bldg. NIH, Bethesda, Md. 20014; for the Treatment and Control Divisions at NCI, Blair Bldg., 8300 Colesville Rd., Silver Spring, Md. 20910. All requests for copies of RFPs should cite the RFP number. The deadline date shown for each listing is the final day for receipt of the completed proposal unless otherwise indicated.

RFP NO1-NCI-CP-55668

Title: *Administrative support services*
Deadline: *March 10*

The Carcinogenesis Program is seeking organizations having capabilities and facilities to provide administrative services and assistance as support to the NCI carcinogenesis staff in the organization and conduct of conferences, seminars and meetings on various aspects of cancer carcinogenesis.

To be included in these support services will be such tasks as arranging for travel, accommodations and meeting facilities, and related miscellaneous support to the scientific director for carcinogenesis.

Also involved will be the preparation of: (1) background materials for use at the meetings, (2) reports for the coordination and dissemination of clinical and scientific data presented at the meetings, and (3) proceedings suitable for reproduction in journals and other communications media.

The contractor will not be responsible for generating any scientific or technical data. But, to be effective its key personnel should be experienced in the areas of 1) visual reproduction, 2) publication techniques (including taping, transcription and editing), 3) scientific terminology and procedure and 4) the organization and conduct (including mass mailing list facilities of large conferences).

In view of the "quick–reaction" response associated with the project it is essential that the offeror's facilities from which his operations will be conducted be within a 30-mile radius of the NIH campus at Bethesda, Md.

Contract Specialist: Anna Beattie
Cause & Prevention
301-496-6361

SOLE SOURCE

Proposals listed here are for information purposes only. RFPs are not available.

Title: Development of laboratory animal virus diagnostic reagents and operation of a service laboratory
Contractor: Microbiological Associates.

Title: Production and maintenance of germ-free animals
Contractor: Life Sciences, Inc., St. Petersburg, Fla.

Title: Immunoprevention of spontaneously occurring neoplasms
Contractor: Microbiological Associates.

Title: Support services to maintain studies on herpes viruses
Contractor: Flow Laboratories.

Title: Continuation of screening of compounds for anti-enzymatic, anti-viral, and anti-tumor activity
Contractor: Litton Bionetics.

CONTRACT AWARDS

Title: Partical support of Institute of Laboratory Animal Resources
Contractor: National Academy of Sciences, $100,000.

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