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NCI DETAILS HOW YEAR 2000 GOAL CAN BE REACHED, BYPASS BUDGET SPELLS OUT HOW MUCH IT WILL COST

The goal of reducing cancer mortality 50 percent by the year 2000 adopted by NCI and accepted by the National Cancer Advisory Board sets forth what NCI Director Vincent DeVita, his staff and advisors believe can be accomplished. The bypass budget developed by NCI and the NCAB last month says what it will cost to reach that goal—an annual budget starting at nearly $1.5 billion in the 1986 fiscal year and reaching over $2 billion in 1990.

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In Brief

CONTRACTS FOR COMPARATIVE NMR IMAGING STUDIES AWARDED TO FIVE INSTITUTIONS; NCI STAFF HONORED

FIVE CONTRACTS for comparative clinical nuclear magnetic resonance imaging studies have been awarded by NCI following spirited competition involving 31 institutions. The winners: Bowman Gray School of Medicine, Cleveland Clinic Foundation, Duke Univ., Massachusetts General Hospital, and Univ. of California (San Francisco). The three year contracts will total $3.4 million. The studies will compare NMR with other state of the art imaging modalities.... **NCI STAFF** members cleaned up at the annual Public Health Service Honor Awards ceremony recently: Michael Blaese, head of the Cellular Immunology Section in the Div. of Cancer Biology & Diagnosis, received the PHS superior service award, the highest award for civil service employees presented by PHS. Robert Namovicz, now administrative officer of the National Heart, Lung & Blood Institute, received the assistant secretary for health award for his work as NCI deputy executive officer. Robert Gallo, chief of the Laboratory of Tumor Cell Biology in the Div. of Cancer Treatment, added the distinguished service medal to his collection of honors. Elaine Jaffe, deputy chief of the Laboratory of Pathology, received the distinguished service award. David Poplack, head of the Leukemia Biology Section; Robert Hoover, chief of the Environmental Epidemiology Branch in the Div. of Cancer Etiology; and David Sachs, chief of the Immunology Branch, received meritorius service medals .... **WALTER ROSS,** editor of the American Cancer Society publications "Cancer News" and "World Smoking & Health", retired from those positions June 1 and has been succeeded by Adele Paroni. Ross will remain with ACS as a consultant and will continue as a roving editor for "Reader's Digest".... **LOUISE LUNCEFORD,** not Olga Joly, is the program director for the new predoctoral research fellowships for nurses, as reported in **The Cancer Letter** May 25.... **GARY PEARSON,** head of microbiology at the Mayo Clinic, has been appointed professor and chairman of Georgetown Univ. Dept. of Microbilogy.

BYPASS BUDGET TIES DOLLAR REQUEST TO THE SAVING OF 288,000 LIVES

(Continued from page 1)

This may be the first time that specific budget requests for an NIH institute will be tied to a specific number of lives projected as being "on the line." In effect, the White House and Congress are being told, "Here's what we can do with the knowledge we now have, and the resources we now have. We can save 288,000 lives a year, in addition to those presently being cured of cancer, through nationwide application of the effective means we possess for preventing, detecting, diagnosing and treating cancer. But it will require a major increase in the budget. Here's what we need, and this is how we will spend it."

That may sound familiar to those who recall the debate which preceded passage of the National Cancer Act of 1971. The recommendations from the Citizens' Panel for the Conquest of Cancer were based on the contention that stepped up support for cancer research and control, including more widespread application of existing knowledge, could have a major impact on morbidity and mortality. Some critics argue that those promises were not met.

Those critics could not be more wrong, of course. Their argument uses the notion, as expressed by a few overenthusiastic supporters of the Cancer Act, that cancer could be "cured" by 1976, or 1981, or whatever date pops into the minds of the critics.

Neither the Citizens' Panel, nor the various House and Senate bills and committee reports, nor anyone at NCI nor any of the professional societies ever made such predictions.

What they did predict was that a significant impact could be made. And that prediction certainly was fulfilled. In the decade of the 1970s, survival increased from about 40 percent of cancer patients (excluding skin and in situ cervical cancer) to about 50 percent. The Citizens' Panel and its allies, in and out of Congress, have been proven correct.

In fact, the Cancer Program has succeeded far beyond their expectations. The explosion of knowledge and technical capability, fueled by the increase in NCI's budget, has made possible the prospect that cancer survival can be increased to 75 percent or more within 16 next years. That progress was achieved without the amount of money recommended by the Citizens' Panel, a budget for NCI which would have reached $1 billion a year by 1976. NCI did not reach that level until this year, and that is with 1984 dollars.

What could have been accomplished had the Citizen's Panel budget been followed? That question probably can never be answered. No specific goals, with specific price tags, were attached to the Panel's recommendations or the National Cancer Act of 1971. The overall goal for 2000 A.D., on the other hand, has been established. Within that goal are targets for mortality reduction by strategies within prevention, screening and detection, and treatment. The costs for implementing those strategies have been projected.

If the money is not provided in those amounts, and if mortality reduction falls short of the goal, it may well be possible to pinpoint the cause of such failure—which strategies were underfunded, how many lives that cost. And, perhaps, who was responsible for not providing that money.

DeVita's presentation to the NCAB included the rationale for undertaking the year 2000 effort now.

"Research success of the past 15-20 years has produced an impressive information base for the development of effective procedures for the prevention, detection/diagnosis, and treatment of cancer.

"The essential organizational and personnel capability exists for the application of a wide variety of cancer interventions to the population at large—centers, clinical cooperative groups, cooperative group outreach programs, community clinical oncology programs, PDQ, and SEER."

PDQ, DeVita said, is the information link tying research to the application of research, and SEER is the monitor to measure how well research results are being applied.

Another major factor in the rationale, DeVita said, is that "public receptivity to efforts aimed at preventing and/or curing is very high."

Overall strategy is "to achieve the goal through aggressive and widespread application of state of the art methods for cancer in prevention, screening and detection, and treatment, and to track research to identify and evaluate new results ready for application by 1990 and to transfer these results to practice."

The FY 1986 bypass budget "provides for a major effort within the National Cancer Program to assure the adequacy of programs required to achieve a 50 percent reduction in the cancer mortality rate by the year 2000," DeVita said. The age adjusted mortality rate in 1980 was 168 deaths per 100,000 population; the goal is to reduce that to 84 deaths per 100,000.

The bypass budget asks $1.445 billion for FY 1986, a healthy increase over the President's budget request for FY 1985 of $1.1 billion (**The Cancer Letter**, May 18). It includes increases of 31 percent for research project grants, 19.2 percent for centers, 46.1 percent for cooperative groups, 50.5 percent for cancer control, 17 percent for

intramural research, 34.2 percent for contracts, 995.2 percent for construction, and 17.6 percent for training.

The bypass budget would fund 40 percent of competing grants at full recommended levels, compared with the 30 percent estimated for this year; increase the number of cancer centers by 50 percent by 1990 and provide funds closer to recommended levels; fund cooperative groups at recommended levels and double their capacity by 1990; fund construction and renovation grants at $20-27 million a year; and expand prevention and community efforts within cancer control.

Total cancer deaths in 1980 were 414,000. NCI has estimated that this would reach 575,000 in 2000 A.D. if there is no reduction in the present rate. A reduction of 50 percent in the rate would reduce total deaths in the U.S. by 288,000 a year in 2000 A.D.

The 50 percent reduction would be achieved through diet modification (5 percent); smoking prevention and cessation (15 percent); and treatment improvements (30 percent, 13 percent in general treatment and 17 percent in adjuvant treatment). Reduction in number of deaths in those categories would be: diet, 29,000; smoking, 86,000; treatment, 173,000.

One prevention objective would be to reduce smoking levels by 1990 to 50 percent of the 1980 level.

In treatment, the estimates are based on technology transfer of existing state of the art treatment and do not include new methods on the horizon, such as the use of monoclonal antibodies.

The big increases in the cancer control budget would be used for, among other things, to greatly increase programs in smoking cessation and prevention by 1990 by utilizing intervention approaches such as self help; physicians, dentists and other health professionals; and programs in schools and at work sites. Efforts would be directed at youth, women, minorities, high risk groups and users of smokeless tobacco products.

The beefed up cancer control budget also would be used to expand the Diet & Nutrition Program three fold by 1990, to include programs in public and professional education aimed at reducing the percent of fat and increasing the percent of fiber in the diet, and for more clinical trials in chemoprevention.

Major areas of emphasis in screening and detection would include intensified efforts to achieve more widespread use of breast and cervical cancer screening.

Improvements in surveillance activities would include development of regional demonstration programs including setting local goals for reducing cancer mortality; expanding coverage of Blacks, Hispanics, and Asians by SEER; and integrating eight to 10 operational non SEER population based cancer registries with SEER.

Manpower development is a key element of the plan. NCI is proposing a three year cancer control science associates program to assure development of a cadre of high quality scientists to perform research in cancer control interventions. The plan also recommends maintaining research training in all areas of cancer; increasing the proportion of training pertinent to the Year 2000 goals; maintaining basic science competence by increasing National Research Service Awards, Preventive Oncology Awards, Research Career Awards, the Clinical Education Program, and Clinical Investigator Awards.

Oversight of the planning is being carried out by four committees—Prevention, chaired by Philip Cole; Screening & Detection, chaired by David Eddy; Treatment, chaired by Paul Engstrom; and Surveillance, chaired by Dorothy Rice. They are assisted by a core planning team composed of NCI scientific program staff and staff from NCI's Office of Program Planning & Analysis.

Also, a National Coalition on Cancer Control will be formed. It will be composed of representatives from a wide variety of concerned groups, health professional agencies and associations, voluntary agencies, and the scientific community. It will participate in the effort by facilitating information sharing and support of the national goal across various sectors of society and levels of government, and by providing key support in mobilizing the nation to conduct cancer control programs.

Two committees are responsible for overview of program operations: An NCI Operating Committee responsible for overseeing specific program planning efforts and day to day program operations. It will be chaired by Peter Greenwald, director of the Div. of Cancer Prevention & Control. Louis Carrese, director of the Office of Program Planning & Analysis, will be exectuve secretary. A National Steering Committee responsible for the coordination of national planning, liaison with the National Coalition and federal, state and local health agencies. It will be chaired by Lester Breslow. Edward Sondik, chief of the Biometrics & Operations Branch in DCPC, will be executive secretary. Its members will be chairmen of the four national committees and members of the NCI Operating Committee.

"Many of our colleagues are responding to the national goal with eagerness, thoughtful analysis, and true commitment," Greenwald told his Board of Scientific Counselors. "The response of some others

has been reminiscent to me of the advice sometimes heard in the late 1960s against the big push in cancer research. It seemed too hard a problem, too complex, and one where we did not have ample knowledge to assure success. Yet, look at the great success that has come out of that research emphasis.

"It is time for a second big push, one aimed at achieving broad population benefits," Greenwald continued. "It is time to make the applied effort to assure that the payoff from basic cancer research is fully realized. It is time for a systematic approach to the treatment of entire communities in prevention and control, in addition to assuring up to date treament of individual patients in our communities."

DCT TO EXAMINE GROUPS' STUDIES, DIRECTIONS; IAT VIALS CONTAMINATED

The clinical cooperative groups will play a "major role" in the effort to reduce mortality 50 percent by 2000 A.D., "both through innovative research and through the transfer of state of the art technology to the community level," Div. of Cancer Treatment Director Bruce Chabner told his Board of Scientific Counselors Monday.

"We hope for a significant increase in funding for the groups during the next few years," Chabner said. "The group budget has stayed level over the past four years, while other segments of the research effort have significantly increased. However, we all recognize that the groups, because of their growing ability to combine classical clinical research with laboratory based investigation, and because of their expanding affiliation with community based groups, are in an excellent position to expand their research activities."

Chabner expressed his objections to remarks by Philip Schein last month in his address as the outgoing president of the American Society of Clinical Oncology. Schein had criticized NCI's use of the cooperative agreement mechanism rather than grants for funding cooperative groups and for practices required for monitoring use of investigational drugs which he said tended to stifle creativity (**The Cancer Letter**, May 18).

"I must admit to being mystified by his criticism of the cooperative agreement mechanism and the NCI efforts to comply with FDA regulations regarding the use of experimental drugs," Chabner told the Board. "I am personally unaware of heavy handedness by NCI staff causing problems at this time, and unless my perceptions are faulty, the cooperative agreement mechanism has not been a problem for clinical investigators. The groups have never had better organization, better data retrieval, and better protocol development. The machinery for conducting research is in place and functioning well. The directions it will take need only to be determined. Therefore, after discussion with Dr. (Robert) Wittes and his staff of the Cancer Therapy Evaluation Program, we have decided to ask the group chairmen and the Board to join us in examining the present studies and future directions of cooperative group research. We feel that such an examination will allow the groups and NCI to decide how we can best utilize our dollars and our group structure to meet the treatment goals for the year 2000.

"Dr. Wittes will discuss the scope and specific issues to be addressed by this study in his next meeting with the cooperative group chairmen (scheduled for July 10), and we will be requesting the participation of Board members in their evaluation over the next six months. We hope to have a report ready for the Board at the February meeting."

Charles Coltman, chairman of the Southwest Oncology Group and of the Cooperative Group Chairmen's Committee, who was present at the Board meeting Monday, said, "On behalf of the cooperative group chairmen, I accept this challenge to review our productivity and to increase our opportunities."

Chabner told the Board of NCI's unsuccessful effort to initiate tests of an unproven treatment which is gaining increasing attention.

NCI did obtain some material being used in the treatment program, but it was contaminated, Chabner said.

"I would like to bring to your attention recent negotiations concerning the possibility of an evaluation of immunoaugmentive therapy, or IAT," Chabner said. "IAT is the popular name for a therapy devised by Dr. Burton, a PhD zoologist. The method consists of fractionating plasma proteins by centrifugation and organic solvent extraction, and replacing so called deficient proteins with a specially formulated mixture. There is no scientific literature to support the use of IAT, but two state legislatures, Oklahoma and Florida, have permitted its use in those cancer patients who elect to do so.

"Dr. Burton maintains his treatment facility in the Bahamas. Prior investigation by NCI in 1977, headed by Dr. William Terry (then head of NCI's Immunology Program), was unable to obtain information from Dr. Burton confirming the effectiveness of his therapy and could not establish a scientific rationale for the treatment. During the past year, Greg Curt (Chabner's assistant for clinical affairs) and I have corresponded with Dr. Burton and expressed our willingness to determine the response of patients treated by him. We have volunteered to analyze clinical records of patients treated in the Bahamas, on the condition that (1)

clinical records and x-rays will be provided to us, and (2) patients can be examined at the Clinical Center. Dr. Burton has refused to engage in direct correspondence with us over the past six months. However, through interested parties, a proposed protocol has been transmitted to NCI. This protocol would provide for treatment and followup of approximately 18 patients with a variety of tumors.

"It has been our long standing policy to pursue any idea if there is the remotest possibility that it might help in the conquest of cancer, but we are bound to do this under conditions which assure an accurate measurement of response and which protect the patient from harm. In the case of the Burton therapy, we have been unable to satisfy either of these conditions.

"Dr. Burton has thus far refused to communicate directly with NCI in the development of a mutually acceptable protocol, but has placed this negotiation in the hands of lay persons. Secondly, Dr. Burton has thus far refused to provide us with IAT material for analysis and testing, a precondition for our entering into any cooperative evaluation of his therapy. We have, however, received a number of unopened vials of IAT material from patients. This material has been analyzed by NCI, and all eight vials proved to be contaminated with bacteria. Trace amounts of serum proteins were present. The vials which were alleged to contain 'tumor complement' in fact contained no detectable complement activity.

"We have other reasons to be concerned about the safety of the product. Although we have been assured by the IAT hotline that all materials 'are thoroughly tested for hepatitis and AIDS,' we have received a report of a patient in New York who has contracted hepatitis after treatment at the Burton clinic. This patient claims to to have knowledge of other cases of hepatitis. Further, we know that although HTLV I and III are present in the Caribbean, the test for the AIDS virus is not yet readily available in the U.S., let alone in the Bahamas. It is thus impossible that the IAT material could have been tested for the AIDS virus.

"We feel that the prompt scientific testing of IAT is a matter of national concern, in view of the claims of success being made by Dr. Burton and his colleagues, the lack of scientific evidence in support of his theories, and the large number of patients seeking his form of therapy. Our sense of urgency is compounded by the fact that Dr. Burton's clinic claims to have experience in treating patients with Hodgkin's disease, acute leukemia, and lymphoma, diseases which are potentially curable by standard methods of treatment.

"Despite this sense of urgency, we are forced to conclude, based on our dealings over the past year, that Dr. Burton is unwilling to allow such an impartial evaluation to take place. I would gladly provide the Board members and the public with a detailed record of our negotiations with Dr. Burton and his colleagues, and any additional materials related to the evaluation of IAT."

Chabner reported on NCI's plans to purchase a supercomputer and make it available to both intramural and extramural investigators.

The computer "will open new opportunities in biomedical research," Chabner said. The NCI Executive Committee has reviewed a proposal from the Div. of Biology & Diagnosis requesting the purchase of a supercomputer "to address the rapidly growing needs of the research community for such projects as examining DNA, RNA and protein sequences for homology with known sequences, rational design of antitumor agents, treatment modeling, analysis of x-ray crystallographic data, and various other uses.

"The computer would be housed at the Frederick Cancer Research Facility but would be available to both intramural and extramural NCI and NIH investigators on a 'play' as you go basis. Reimbursement from outside intramural NCI will be negotiated as the funding needs of the facility become clearer but initially there will be no fee for outside users. Fully two thirds of its operating time will be made available to users other than NCI intramural staff, and the facility will be considered a national biomedical resource, with access lines on the NIH campus and at selected facilities nationwide. The computer facility will be designed with the help of the NIH Div. of Computer Research & Technology, and will be directed by Dr. Jacob Maizell, who has recently joined NCI."

The computer will be purchased and installed during the 1985 fiscal year, Chabner said.

Board member Efraim Racker commented that similar computers are in use at other government facilities. "I wonder how many outside users you will have?"

Chabner said that national laboratories which have supercomputers have little or no free time, so heavy is the demand. The NCI computer will cost in the $10 million range and will not be the most powerful of those given the "super" tag. The real supercomputers cost about $40 million, and even those may be dwarfed by the new generation of machines being planned by some U.S. and Japanese firms.

Chabner reported on progress in development of surgical oncology programs.

Review has been completed of the surgical oncology planning grants generated by the RFA approved by the Board in June, 1983. "We are recommending funding of six grants for a total of $408,000," Chabner said. "This represents the second

round of surgical oncology planning grants initiated by DCT in the last three years. We feel that the current grants are even more responsive to the aims of the RFA than the initial group, that is they are specifically addressed at organizing the institutional resources for the development of a cohesive plan of clinical and laboratory research in surgical oncology. "

Priority scores of the six grants, with direct costs approved for each, were: 130, $47,404; 151, $41,886; 158, $52,405; 173, $45,322; 197, $37,216; and 205, $63,660.

The Board was asked for its concurrence in funding the last two, since they exceeded the payline of 175 by more than 20 points. Board members agreed, but Robert Goodman asked for some justification for the applicant scoring 205 getting an award considerably higher than the applicant with the best score.

Samuel Wells, chairman of the Board's Surgical Oncology Committee, said the application was in compliance with the RFA. Wittes pointed out that the study section approved the budget, but agreed to take another look at the application to be certain the amount was justified.

Indirect costs amounting to 42 percent brought the total of the six awards to $408,808.

Chabner said a new round of Clinical Investigator Awards (KO-8 grants) has been reviewed and that it appears at least two additional surgical applicants will be funded, bringing the total in the first two rounds to six grants for surgeons. In a related development, the salary level for KO-8 recipients has been raised to $40,000 a year, still with an additional $10,000 a year for research expenses. "It is my belief that this award constitutes the premier training grant for young MD investigators and the Institute plans to expand its availability to approximately 20 new awards per year, for a total portfolio of 60 active awards," Chabner said.

FROZEN SERUM PANELS AVAILABLE TO EVALUATE DIAGNOSTIC ASSAYS

NCI has announced the availability of frozen serum panels and is interested in evaluating serum assays that are potentially useful in the diagnosis of cancer.

A variety of serum components (e.g., peptide hormones, viral antigens, isoenzymes, glycoproteins, antibodies, immune complexes, tumor associated antigens, carbohydrates, phospholipids, nucleosides, etc.) have been reported to be useful in cancer diagnosis and/or in monitoring cancer treatment or recurrence.

Coded panels composed of 1 ml aliquots of pretreatment frozen sera from patients with various neoplasms, from benign disease patients, and from healthy controls are available to investigators to evaluate assays in which preliminary results indicate the ability to discriminate between cancer patients and controls. Promising results may form the basis for a subsequent grant application. Preliminary data documenting a useful test must be submitted and should include a brief description of the assay, results in patients with cancer, results in patients with nonmalignant disease, results in healthy control subjects and reprints of published work, if available. Request for a coded serum panel should be sent to Diagnosis Serum Panels, Project Officer NCI Serum Bank, Diagnosis Branch, Westwood Bldg Rm 10A10, NCI, Bethesda, Md. 20205.

NCI CONTRACT AWARDS

Title: Study of the clinical pharmacokinetics of anticancer drugs
Contractor: Ohio State Univ. Research Foundation, $364,588

RFAs FOR DIETARY MARKERS, VEGETABLE OIL STUDIES OFFERED

RFA 84-ES-03
Title: Rat pancreatic exocrine lesions: biological nature and possible role of vegetable oil in formation of these lesions in gavage studies.
Application receipt date: July 25

The Toxicology Research & Testing Program of the Ntional Toxicology Program, National Institute of Environmental Health Sciences, invites cooperative agreement applications to aid in defining the relationship of dietary oil and increased incidence of pancreatic acinar cell proliferative lesions found in rats. A means to provide an accepted classification scheme of rat proliferative exocrine pancreatic lesion based on the biological nature of the lesions is also considered important. This request for applications will be utilized to assist and stimulate research in an area of importance to toxicologists evaluating oil gavage studies, nutritionists concerned about the levels of dietary oil, oncologists working in the area of pancreatic carcinogenesis and finally physiologists studying the role of pancreatic trophic hormone interactions with dietary oil.

An applicant, if funded under this RFA will be supported through the cooperative agreement mechanism in accordance with the policies of the Public Health Service and NIH.

An applicant may apply for a project period of up to five years under the RFA. The number of awards, up to three, will be dependent upon the merit of the respondents. The specific amount to be funded will depend upon the merit of the applications received and the availability of funds. It is the intent of this RFA to create or fund programs of research in locations where a critical mass of resources and qualified investigators already exist

or can be assembled by the time of the award.

The awardee will have the primary responsibility for the planning and direction of the proposed research. This will involve active participation and interaction with the NTP/NIEHS staff on both administrative and scientific matters. NTP/NIEHS staff will periodically review progress to ensure conformation to the award.

The RFA and additional information are available from Gary Boorman, DVM, PhD, Head, Tumor Pathology, CPB, TRTP, NIEHS, PO Box 12233, Research Triangle Park, N.C. 27709.

RFA 84-CA-12
Title: Dietary markers for epidemiologic studies of cancer.
Application receipt date: Sept. 15

The current emphasis on nutritional factors as modulators of carcinogenesis in human populations has created an increased awareness of the need for biologic markers of present and past dietary exposures that might alter cancer risk. Experimental animal studies have indicated that the intake of specific dietary components is an important determinant of cancer risk. Attempts to apply these findings to the human situation are hindered by the difficulty of of classifying individuals into intake (or exposure) categories.

In terms of nutritional status, attempts at assessment are usually based on questionnaire or interview derived information. Problems exist in determining the extent to which such data reflect actual intake (e.g., selective recall, limited knowledge of food composition and complexity of diet), the extent to which utilization is a measure of bioavailability (e.g., absorption efficiency and the possibility that specific dietary components may be ingested in a form which renders absorption difficult or impossible) and individual variability in metabolic handling of substances after absorption.

It would clearly be advantageous to have available biochemical measures (preferably minimally invasive) which would provide unambiguous markers of the level and distribution of dietary constituents in individuals. Such methodology would facilitate the design, conduct and interpretation of epidemiologic studies focused on the relationship between diet, nutrition and cancer risk.

Because of the latency period involved in the carcinogenic process, it can be anticipated that cancer risk will have been modulated by dietary patterns which existed at some time in the past as well as those in the present. These past events are not always well defined by data on current dietary patterns for several reasons; among these, the fact that dietary patterns may vary significantly over time and because of our limited knowledge of the changing composition of foods. Markers of both present and past dietary experience are, therefore, of special interest in cancer epidemiology and some evidence from experimental studies suggests a potential for the development of markers for validation of present exposure or which reflect integrated past exposure.

Examples of markers which might provide measures of present exposure levels would include urinary 3-methylhistidine occurring in skeletal muscle as an estimate of muscle meat consumption and detection of 2,3-dihydro-2-(7'-guanyl)-3-hydroxy-alfatoxin-B1 as an indicator of exposure to aflatoxin-B1 in the diet. Examples of past exposure would include the existence of persistent DNA or protein adducts following exposure to specific materials, the accumulation of substances in the body which are excreted extremely slowly, and alterations in tissue composition which reflect past intake.

The purpose of this RFA is to encourage investigations designed to identify, characterize and validate markers of present or past dietary exposure which could be useful in the validation or the conduct of nutritionally focused studies in cancer epidemiology. Clearly, the more relevant to cancer risk and the more persistent the marker the greater its utility for this purpose. Because the methods to be developed will ultimately be utilized in epidemiological studies, it is important that consideration be given at the outset to feasibility in this context. Such factors as ease of conduct and expense as well as collection, storage and transport problems should be considered along with the accuracy and validity of the method. It is not our intent to exclude animal studies in this context where they are necessary for the development and validation of methodologies which will ultimately be applied to the human situation. The range of materials, for which markers of exposure are of interest, is extremely diverse. Included would be any foods and beverages, food groups or components, nutrients or trace elements derived from dietary sources which have been proposed to alter the risk of malignancy and for which human exposure is likely to have occurred. Documentation of interindividual variation, both in absorption and metabolic utilization and in persistence of markers, is of interest.

For further information and a copy of the RFA, contact Dr. A.R. Patel, Extramural Programs Branch, Epidemiology & Biostatistics Program, Div. of Cancer Etiology, NCI, Landow Bldg Rm 8C16, Bethesda, Md. 20205, phone 301-496-9600 or 9602 or 9603.

Announcement: NCI cooperative minority biomedical program.

NCI provides support for minority researchers through the cooperative minority biomedical program. Domestic research institutions already receiving NCI grants and interested in including minority researchers in their cancer research may submit a supplemental grant application for this purpose. Approved applications will be funded as supplements to previously peer reviewed active grants. These may include but are not limited to individual project (RO1) and program project (PO1) grants.

The CMBP provides support to minority

scientists to assist in providing increased opportunities for enlarging their capabilities in cancer research and to influence more minority scientists to develop careers as cancer investigators.

The NCI program director in conjunction with the Cancer Minority Program Advisory Committee will determine the appropriateness of the supplement to the grant using the following criteria: the proposed research described in the supplemental application must fit within the scope of the approved and funded project; the curriculum vitae of the minority scientist must indicate that he/she could be expected to achieve the objectives of this project; and the length of time requested must be reasonable for achieving the objective. Initial merit review will be managed by the Div. of Extramural Activities of NCI, following which a recommendation will be made by the National Cancer Advisory Board.

Any domestic institution with an active cancer research grant is eligible to submit a supplemental application on behalf of a principal investigator for the exclusive purpose of including minority researchers in the project.

A minority investigator may be described as a U.S. citizen from an under represented ethnic American nationality (e.g., Black, Hispanic, Native American, Asian or Pacific Islander). The minority investigator is expected to provide a complete CV which includes a list of any research publications. The minority investigators may be affiliated with the applicant institutions or some other institution. The program is not intended to pay stipends for student trainees or support candidates without any research background. The investigator must be willing to devote a minimum of 30 percent of his/her time to the research project.

The proposed project for the supplement must be closely related to the currently funded research grant. It may represent an increased effort in an already approved objective of the research project or propose to enhance the effectiveness of the overall research. The nature of the research should provide the minority investigator an opportunity to contribute intellectually to the program and to broaden his/her own potential. The scope of the project will generally be comprehensive enough to require at least two years for completion and the supplemental application should include such a research plan and projected budget sheets. With appropriate justification a one year application may be acceptable. No new supplemental applications will be accepted in the final year of the current award.

Funding will be made in accordance with the usual NIH policy for supplements. Awards will be issued on an annual basis. Continuing support for the second (or subsequent) year will depend upon approval of a satisfactory annual progress report and proposed budget from the minority investigator submitted with the principal investigator's noncompeting continuation application. Funding for the supplement is always contingent on funding of the parent grant. Each minority investigator budget shall not exceed $25,000 in direct costs and may not include equipment. Supplemental awards made under this program are for the sole purpose of facilitating participation by minority investigators as described above.

The PI should submit a supplemental grant application through the institution on the standard form PHS 398, limited to the following: (1) Face page, at the top of which the applicant must designate the grant number of the active grant and specifically state "Minority Investigator Supplement"; (2) budget page (excluding equipment); (3) biographical sketch of the minority researcher; and (4) outline of the research project as it relates to the parent grant.

Applications received fewer than 90 days prior to a scheduled NCAB meeting may be reviewed at the subsequent NCAB meeting.

The original and four copies of the application should be sent to Div. of Research Grants, NIH, Westwood Bldg Rm 240, Bethesda, Md. 20205.

Send two copies to Hernon Fox, Referral Office, NCI, Westwood Bldg Rm 826, Bethesda, Md. 20205.

Announcement: Biochemistry and pharmacology program.

The Biochemistry & Pharmacology Program of the Div. of Cancer Treatment, NCI, announces the following guidelines to assist investigators preparing grant applications in the synthetic chemistry area including synthesis of natural products. These criteria set forth the objectives of the preclinical drug development program of NCI. The Institute will express interest in grant applications which include at least one of the following:

*A rationale based on biochemical, pharmacological or experimental therapeutic considerations that the target molecules are likely to be potential anticancer agents.

*Positive antitumor data in specific test systems with members of proposed structural entities or their analogs.

*Compounds needed for followup studies and which are not available in adequate quantity from commercial or natural sources.

*A confirmation from NCI or from other institutions or laboratories indicating need and interest for synthesis of proposed compounds.

For more information contact M.V. Nadkarni, PhD, Program Director for Grants, Biochemistry & Pharmacology Program, DCT, NCI, Blair Bldg Rm 401, Bethesda, Md. 20205, phone 301-427-8706.

The Cancer Letter _Editor Jerry D. Boyd

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