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DCCR ADVISORS OKAY NEW PROGRAMS; $300,000 YEAR DEMONSTRATIONS IN SIX COMMUNITIES SUPPORTED

Seven new programs were approved by the NCI Div. of Cancer Control & Rehabilitation Advisory Committee to start in the current fiscal year, including a major new demonstration program that would involve

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In Brief

CHANGES IN KEY SUBCOMMITTEE CHAIRMANSHIPS, BROOKE'S DEFEAT LEAVE DIRECTION IN DOUBT

ELECTION RESULTS and President Carter's anti-inflation program are almost certain to make it tougher than ever to get adequate appropriations for NCI from Congress. The defeat of Edward Brooke will deprive the Cancer Program of its most ardent and effective Republican advocate in the Senate. Brooke was the top ranking GOP member of Sen. Warren Magnuson's HEW Appropriations Subcommittee. The subcommittee's second ranking Republican, Clifford Case, also a consistent backer of the Cancer Program, was defeated in the primary. There were no comparable losses due to the election in the House, but the retirement of Paul Rogers, chairman of the Health Subcommittee, and the indictment hanging over Daniel Flood, chairman of the HEW Appropriations Subcommittee, leave the future directions of those key groups in doubt. Senior Democrat on Rogers' subcommittee is David Satterfield (Va.), but he may be too conservative for some; next in line is Richardson Preyer, considered more moderate. William Natcher (Ky.) can have Flood's chairmanship, provided Democrats remove Flood from the post (he was reelected despite the indictment on conspiracy and bribery charges). Natcher may opt to keep his chairmanship of the D.C. Appropriations Subcommittee, however; if he does, Neal Smith (Iowa), a liberal, probably would get the HEW chairmanship. Tim Lee Carter, a solid Cancer Program supporter, remains the ranking Republican member of the House Health Subcommittee. William Hathaway of Maine was a casualty on Ted Kennedy's Senate Health Subcommittee, losing to Republican William Cohen. A key Senate Republican on health issues now stands to be Richard Schweiker (Pa.), who is the senior GOP member of Kennedy's subcommittee and also is the senior surviving Republican on Magnuson's subcommittee. . . . **PLENARY SESSION** of the Clearinghouse on Environmental Carcinogens, scheduled for Nov. 30, has been canceled—"No business to discuss," said Exec Sec James Sontag. . . . **"SUCCESSES IN CANCER** Management Today" is topic of 10th Medical Symposium sponsored by the ACS Massachusetts Div. Dec. 13. Irving Selikoff, director of Environmental Sciences Laboratory at Mt. Sinai, and Bernard Fisher, who heads the National Surgical Adjuvant Breast Project, are among the speakers. Contact Mary Costanza, ACS, 247 Commonwealth Ave., Boston, 02116, phone 617-267-2650.

NEW DCCR PROGRAMS TO INCLUDE SMOKING CESSATION, EDUCATION, PATHOLOGY

(Continued from page 1)

six communities, each funded at approximately $300,000 annually for three years.

The community program would include development of means to notify persons exposed to carcinogens, along the lines of projects DCCR is supporting in Tyler, Texas (asbestos exposure), and Louisville (polyvinylchloride). NCI is not satisfied with those projects, and the new ones supported by contracts would be aimed at overcoming problems and weaknesses that have turned up there.

"We need experience in notification programs, in organizing communities to deal with it, in education programs aimed at the public and at medical people, and in setting up quality control procedures in the community in diagnosis, x-ray, cytology," said DCCR Director Diane Fink. "What it takes to prepare a community to deal with long term problems brought on by extensive exposure to one or more carcinogens—that is the goal of this program."

Education would include primary preventive measures, similar to the effort in the nationwide asbestos notification program in which the increased risk of lung cancer among asbestos exposed smokers is pointed out.

Programs will include before and after surveys to measure effectiveness of measures taken, and physician education aimed at changing medical practice habits, Fink said.

Each of the six contracts would involve widespread exposure to a single carcinogen. Fink said she expects responses to the RFP from universities, medical schools, medical societies, "even chambers of commerce and similar organizations." Contract will provide for six months of planning, 18 months for implementation and a year for evaluation.

"These contracts will deal with specific carcinogens in specific communities," commented Richard Costlow, chief of DCCR's Detection, Diagnosis & Pretreatment Evaluation Branch. "Each project will be tailored to a specific carcinogen and community."

Fink said the Tyler and Louisville projects "are not good models. They were started just when we (the Cancer Control Program) were getting off the ground. We've learned a lot from them."

"Whenever there is an identifiable community problem, it is only reasonable to undertake an education effort," commented committee member Oliver Beahrs. His motion to approve the project's concept was approved unanimously.

The committee approved development of three new smoking cessation projects, two supported by contracts and the other by grants.

Ruby Isom, special assistant to Fink, described each project:

• Cross validation of smoking cessation programs (contract). "This will be one study, although we'll set aside funds for two if we get a proposal for another good approach. . . . Accurate success rates for formalized smoking cessation programs are not available because of serious deficiencies in the design and methodology used to evaluate these programs. The average success rate of these programs one year after completion is 22%. However, some of the more expensive approaches claim an 80% success rate over the same period of time. The National Interagency Council on Smoking & Health noted that the inconsistencies and lack of comparability in studies of these programs not only made it difficult to compare the various approaches, but also 'retarded progress in the acquisition of systematic knowledge which could advance the understanding of smoking dynamics and perhaps facilitate the cessation process for millions of smokers.'

"DCCR proposes to fund a prospective evaluation of the three or four most widely utilized smoking cessation models. The study design for this evaluation will be required to correct the scientific and methodological deficiencies of past evaluations, to provide accurate data on the success rates of these models and to identify ways to improve their effectiveness. The Guidelines for Research on the Effectiveness of Smoking Cessation Programs developed by the National Interagency Council will be appended to the RFP as suggested minimal standards for evaluation. However, the RFP will require the formation of a project advisory committee composed of experts from the fields of smoking cessation, experimental design, program evaluation, behavioral medicine and biostatistics. The committee will monitor each task required under the contract to ensure that the scientific method is followed throughout the design and operation of the project."

• Develop effective methods for modifying smoking behavior in special at-risk populations (contract).

"Within the smoking population there are certain subgroups whose risk from lung cancer is enhanced by certain social, psychological or environmental factors. Examples include workers exposed to carcinogens which interact synergistically with smoking, teenage females whose use of cigarettes has increased during the period of time when the overall trend has been one of decreased use and younger age groups who take up the use of cigarettes in the face of evidence that they clearly understand the health implications of smoking.

"It has been suggested that efforts to beneficially modify smoking behavior might be substantially more effective if these efforts were customized to deal with specific population subgroups. Therefore, the objective of this RFP is to develop, test and evaluate methods for effectively modifying the smoking behavior of specific, well-defined populations and to

document the methodology in a form which provides for effective replication in similar groups and situations.

"This RFP will be also expected to adhere to the principles of good scientific design and methodology and to work within the framework for evaluation proposed in the NICSH Guidelines."

Isom said she hoped to get "a half dozen good proposals for innovative, creative ways to reach these groups."

- Study and analysis of cancer control implications of informal self-help approaches to smoking cessation (grant).

"A majority (70-80%) of the 29 million Americans who quit smoking between 1964-1974 did so without the assistance of organized, formal smoking cessation programs. Limited data are available on certain characteristics of this population as compared to recidivists or those who have never stopped smoking, but very little information has been obtained on the processes which enabled these individuals to succeed in becoming ex-smokers. The main focus of this RFA is for a retrospective study and analysis of successful self-help approaches to smoking cessation, but the grantee will also be encouraged to identify issues related to this area of interest which may need to be resolved through prospective studies of the self-help approach."

The committee approved two other contract supported projects presented by Isom:

- Development and evaluation of cancer education protocols.

"Although a significant body of knowledge is currently available on design and evaluation of health education programs, it has not been codified into program and evaluation protocols which can be readily applied to community-level health education programs. One of the major recommendations from the NIH Task Force on Preventive Medicine was for governmental action to encourage methodological research on the measurement of health education variables and the standardization of instruments to improve the comparability of findings form various studies. In order to facilitate the development of effective cancer education programs, DCCR proposes to fund educational projects which will address the deficiencies in program design and evaluation cited by the task force."

- Development of protocols for worker notification and information programs.

"The need for a more definitive and scientific study of strategies for notifying and informing workers and other relevant individuals and groups involved in preventing or reducing the risk of job-related cancers became very apparent during the recent Asbestos Alert Program for shipyard workers. The lessons being learned from that experience and from earlier studies of job-related exposures to carcinogens indicate clearly that the traditional organizational, medical and informational approaches which have evolved from community health programs for the occupational setting. The objective of this RFP is to develop effective strategies for notifying and informing workers, ex-workers and other relevant individuals, concerning their exposure to an occupationally related carcinogenic substance. For the purposes of the RFP, 'effective strategies' would be defined as those most likely to ensure that the information actually reaches the target population and persuades them to adopt appropriate risk-reducing behaviors."

Anthony Mazzocchi, vice president of the Oil, Chemical & Atomic Workers Union, is a consultant to the advisory committee. "This program should be undertaken," he said, "but you should understand the situation. Workers aren't told about carcinogens they're working with. They're known to the management, and sometimes even to the company doctor but not to workers. I know of one company doctor, when we asked why he wasn't informing workers that a substance they were handling was a carcinogen, who said he was responsible to the company which was paying him, not to the persons he was treating. We are in a major fight over the right to know what we work with."

Mazzocchi raised an objection to the behavior modification aspect of the program. "We (organized labor) think the emphasis should not be on behavior modification. It should be on removal of carcinogens from the workplace. You can't talk about smoking and alcohol without talking about occupational exposures. The occupation is part of the problem. Some people don't have control over their smoking and drinking. Their work doesn't permit it. Work was an abomination to me. I got out and became a labor bureaucrat. If I had to go back to work, I would probably start smoking and drinking again."

The smoking cessation projects were developed after consultation with the office on Smoking & Health in the Div. of Cancer Cause & Prevention, the National Institute on Child Health & Human Development, National Heart, Lung & Blood Disease Institute, and the Center for Disease Control, Isom said. Individual consultants were Bernard Fox and Bernie Ellis, NCI; Richard Evans, Univ. of Houston; and Jerry Schwartz, California State Dept. of Health.

The committee approved two new education programs in preventive medicine, one for medical students and residents and the other for physicians assistants and nurses.

Both will be supported by contracts, and several contracts will be awarded for each program, depending on the number of high quality proposals that are submitted.

"We hope to stimulate interest in preventive medicine," Fink said. They will be elective courses, to be established in the schools awarded the contracts.

There will be heavy emphasis on epidemiology and biostatistics.

Chauncey Bly, DCCR program director for pathology, obtained approval from the committee for a new pathology education program, to be supported by a contract. The emphasis will be on educating practicing pathologists on detection of early lesions, particularly breast, cervical and colon cancer.

It will be a national program, and the RFP probably will be directed to the pathology professional organizations.

The committee approved a radiation prevention project which will be a sole source contract with the National Council for Radiation Protection. The task will be to develop documents for national distribution to radiologists, to help guide them in reducing radiation exposure, starting with mammography. After that, it might be expanded to other areas of exposure.

Mazzocchi expressed support for this program and got into a sharp exchange with Beahrs.

"There is dismal knowledge about carcinogens and their presence in communities and how they got there," Mazzocchi said. "NCI education programs in that area can be of great service. People just don't know about these things. If you ask your physician about radiation danger, you're asking someone who doesn't know any more about it than you do."

"On what basis do you say that?" Beahrs asked, obviously nettled. Beahrs is chief of general surgery at the Mayo Clinic.

"On the basis of the physicians we come in contact with, in occupational health," Mazzocchi answered. "It is usually an unhappy experience."

"Your contact with physicians is much less than mine, and that is not my opinion," Beahrs said.

"Most of the knowledge we've accumulated about radiation exposure has been over the dead bodies of workers," Mazzocchi said. "It's always after the fact."

"My personal opinion is that you're overstating it. That of course is my bias," Beahrs said. "Public education and professional education (on radiation exposure) needs to be continued, I agree. But overstating the problem leads to fear, and lack of use of certain facilities when that use is indicated."

Beahrs said he supported the concept, of developing approaches to the problem, and the committee supported it unanimously.

TOXICITY TESTING REORGANIZATION ANNOUNCED; RALL HEADS NEW GROUP

HEW Secretary Joseph Califano has finally, officially, announced the plan for reorganizing the government's toxicity testing efforts. It is essentially as reported by ***The Cancer Letter*** (Sept. 15):

★ Each of four agencies—NCI, Food & Drug Administration, National Institute of Environmental Health Sciences, National Institute of Occupational Safety & Health—will assign those portions of their budgets used for toxicological testing to a new National Toxicological Program. The new group will be headed by David Rall, NIEHS director. Rall will continue as director of that institute and will have day to day oversight responsibility for the new program.

★ NCI's contribution will amount to $21.8 million, which is nearly all of its budget for the Bioassay Program, headed by Richard Griesemer. Excluded from the transfer is that portion of the program considered carcinogenesis research. NIEHS will contribute $10.2 million from its budget, FDA $7 million and NIOSH $2 million.

★ The new program's $41 million budget will be subject to review by an interagency group that will include the heads of the four contributing agencies plus the heads of the Occupational Safety & Health Administration, Environmental Protection Agency and Consumer Product Safety Commission.

★ A new Science Advisory Board will be appointed by Califano to oversee protocol development and other science related matters, including selection of chemicals to be tested.

★ Griesemer and his staff will be responsible directly to Rall for program purposes but will remain administratively within NCI's Div. of Cancer Cause & Prevention. No one will be geographically moved, unless it is determined it would be of benefit to the program and is concurred with by all parties concerned.

★ The new setup will be evaluated over the next two years, after which Rall will be required to present a plan which will identify future directions—modify the program, assess need for additional resources, determine if the program should continue to be included in each agency's budget or be given an independent budget.

★ The FDA contribution will come out of the $14-15 million budget for the National Center for Toxicology Research at Pine Bluff, Ark. The testing portion of that program will go to the new group, with the developmental research staying under FDA control. The NIEHS contribution includes its mutagenesis testing and testing for toxicities other than cancer. About $7 million of NIEHS tests are done under grant, $3 million with contracts or in house. NIOSH supports relatively little testing, and its contribution is basically a token one.

★ Rall will have a small staff at NIEHS, which is located at Research Triangle Park, N.C., to help him manage the program. There are some Bioassay Program vacancies at present, and some of them may be allocated to Rall for his staff.

A number of issues remain to be decided:

—The fate of the Clearinghouse on Environmental Carcinogens, established to advise NCI on chemical selection, experimental design for chemical tests, and risk assessment and data evaluation. The Clearinghouse probably will be abolished and those functions

assigned elsewhere. Each agency will have its say on chemical selection. The existing Chemical Selection Working Group could be continued, perhaps with some modification, as an advisory body to the interagency group which reviews the program. Data evaluation will be performed by program staff. Whether or not an outside group will be established to advise on risk assessment is somewhat controversial. The Clearinghouse philosophy was that representatives of labor, industry and consumers should participate in risk assessment along with scientists. An opposing philosophy is that the test results ought to speak for themselves, with a determination on risk to humans a matter that should be left to the regulatory agencies and the courts.

DCCP is planning a research program on risk assessment and carcinogen identification. It will be both grant and contract supported, will delve into methodology related to testing and interpretation of test results.

–The fate of the prime contract, held by Tracor-Jitco, through which most of the NCI carcinogenesis testing is done. NCI Director Arthur Upton said he did not foresee any change in the prime contract; the ultimate decision will be up to Rall and his staff.

–How review of the prime contract, and any other contracts, will be accomplished. Presumably, Rall will establish a peer review group for that purpose. If the program supports any grants, they probably would be reviewed by NIH study sections, but the grant mechanism is considered less suited for routine testing than contracts. Grants probably would be used for testing related research, and for the present, research responsibility will remain with NCI and the other agencies. That does not mean that Rall's group eventually will not support some research, however.

Upton said he was pleased that Califano had approved the new arrangement.

"It is an important step toward a more closely coordinated approach, toward a common solution to a national problem," Upton said. "It is an experiment, and we may discover as we seek to carry it out, some problems that have to be ironed out. I don't view it with any trepidation. NCI is gaining the participation of NIOSH, EPA and the others, and that is all to the good."

DCCP Director Gregory O'Conor said he expected the new arrangement "will work satisfactorily and will provide better service to the nation." He pointed out that, through Upton, he will continue to "have some input" on the program. He probably will represent Upton at most of the interagency group meetings.

Arnold Brown, chairman of the Clearinghouse, said he was "glad the secretary has come to a resolution of this problem. It should clear the air for the future of the Bioassay Program." Brown said it is "obvious the Clearinghouse will no longer be necessary from NCI's point of view, and that it will either be done away with or recast with new responsibilities. I'm happy to say that we've finished the backlog, the main job for which we were created."

The new arrangement is rather unique, at least in the federal government, in that Griesemer and his counterparts at FDA and NIOSH will be working simultaneously for two agencies. While Rall will have the last word on program decisions, Griesemer will be responsible only to O'Conor and Upton on administrative matters, including promotions, hiring, space and support staff assignment, and perhaps other considerations. The same will apply to the program staff at FDA and NIOSH; NIEHS staff assigned to the new program, of course, will report only to Rall.

In some parts of the federal bureaucracy, such division of loyalties would lead to disaster, with unending fights over prerogatives and turf. It can work here, O'Conor said, if all concerned will approach their roles "with good will."

DCT PLANNING TO DROP USE OF MONKEYS IN TOXICOLOGY TESTING OF NEW DRUGS

If NCI has its way, the use of monkeys for toxicology testing of anticancer drugs will end.

Div. of Cancer Treatment Director Vincent DeVita is considering a proposal for submission to FDA that would streamline preclinical toxicology in drug development, limit tests to mice and dogs, and trim the time required for toxicology testing from nine to four months.

DeVita told the DCT Board of Scientific Counselors that Developmental Therapeutics Program Director Vincent Oliverio and his staff agree that data obtained from monkeys do not add enough information to justify the time and expense. Monkeys cost about $600 each and are becoming increasingly difficult to obtain.

DeVita said he was considering a number of proposals. One would depend totally on rodents, another would use mice and a short test with dogs.

Board member Enrico Mihich said he agreed that most of the information obtained with monkeys replicates that from rodents. "But I think skipping dogs would be a mistake. There is clearly a difference in the information you get from rodents and dogs."

Oliverio prefers the combination of mice and dogs, and that is the plan DeVita is considering. FDA's approval is necessary, but DeVita said he did not think that agency would object. "The current toxicology arrangement was developed by NCI. We're living with our own plan. I would hope they will consider this as a modification of our own arrangements," DeVita said.

Eliminating monkeys would permit more institutions and perhaps others to perform toxicology studies than is now the case. Oliverio said the Univ. of Southern California wants to conduct tests on

some compounds it is developing, if it doesn't have to use monkeys. Sloan-Kettering is planning to conduct a test on a platinum analog. "We hope this will help decentralize drug development," Oliverio said.

The amount of money that would be saved is difficult to estimate, Oliverio said. Each test now costs about $100,000, but most of that pays for histopathological examination. Since dogs (mostly beagles) cost from $125 to $175 each and are cheaper to house and feed, there would be some cost reduction. Mice cost $1.75 each.

DeVita said he hoped to obtain FDA approval before the end of the year.

CONSTRUCTION PROGRAM HAS $7 MILLION, $33.5 MILLION IN GRANT APPLICATIONS

NCI's construction program, which has provided a major impetus to development of cancer centers and other research facilities, will be fortunate if it can fund one third of construction grants that will be approved in the 1979 fiscal year.

The budget for the program this year is $9 million. There is a carryover grant from 1978, awarded but not paid to Cal Tech, of $1.5 million for a new basic science building. That will be paid first, leaving $7.5 million.

There are three applications approved but not funded that are being carried over to this year—from Purdue Univ., Memorial Sloan-Kettering and Univ. of Arizona. There are 13 new applications that will go to the National Cancer Advisory Board at its January and May meetings.

Total amount requested in the three carryovers and 13 new applications is $33.5 million. Amounts may be reduced in approved grants, and not all will be approved or recommended for funding.

Nearly all of the applications are seeking assistance for development of either biohazard containment or animal facilities, about half for new construction and half for renovation.

Another application was received from Thomas Jefferson Univ. for the development of a neutron therapy facility. That application will be routed to the Div. of Cancer Treatment and be considered responsive to the RFP DCT will issue for contract support of two neutron clinical facilities.

LEFFALL NEW ACS PRESIDENT, GUSBERG PRESIDENT-ELECT; SOCIETY HONORS THREE

LaSalle Leffall Jr., chairman of the Dept. of Surgery at Howard Univ., is the new president of the American Cancer Society. Saul Gusberg, chairman of the Dept of Obstetrics & Gynecology at Mount Sinai School of Medicine, was named vice president and president elect at the ACS board of directors meeting last week.

An expert on colorectal cancer, Leffall has been chairman of the ACS's National Task Force on Colon and Rectal Cancer since 1973. He is president of the Society of Surgical Oncology (founded as the James Ewing Society) 1978-79.

Gusberg was president of the New York Academy, is editor in chief of *Gynecologic Oncology*, and is a member of the NCI Div. of Cancer Control & Rehabilitation Advisory Committee.

The society's highest honor, the Annual National Award, was received by Giulio D'Angio, Children's Hospital and the Univ. of Pennsylvania; George Hitchings, scientist-emeritus and consultant of Burroughs-Wellcome Co.; and Grace Monaco, president of the Candlelighters Foundation.

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, citing the RFP number. Some listings will show the phone number of the Contract Specialist, who will respond to questions. Listings identify the respective sections of the Research Contracts Branch which are issuing the RFPs. Their addresses, all followed by NIH, Bethesda, Md. 20014, are:
Biology & Diagnosis Section — Landow Building
Viral Oncology & Field Studies Section — Landow Building
Control & Rehabilitation Section — Blair Building
Carcinogenesis Section — Blair Building
Treatment Section — Blair Building
Office of the Director Section — Blair Building
Deadline date shown for each listing is the final day for receipt of the completed proposal unless otherwise indicated.

RFP NCI-CM-82228

Title: *Recognition, evaluation and pre-clinical development of new improved anticancer therapies, associated model development*

Deadline: *Jan. 3, 1979*

The tasks to be conducted involve exploratory studies, development studies, applied studies, and testing in vivo and in vitro, performed strictly in accordance with NCI generated experimental protocols. The project will be divided into four tasks: new model development, detailed drug evaluation, screening in vivo, and screening in vitro.

Specifically, this project entails: a) Drug screening in mice bearing spontaneous and transplantable mouse tumors and human tumor xenografts grown in athymic (nude) mice. b) Screening in vitro using celllines and experimental protocols specified by NCI. c) Application of fundamental biological principles to the development of new and improved laboratory models as tools for the discovery of more effective anticancer therapies—individual drugs, drug combinations, combined treatment modalities, optimization of conditions for their use, and consultation with other NCI contractors who may be required to use the model(s). d) Detailed evaluation of drugs in development to NCI sponsored clinical trial. e) Conduct of non-routine laboratory studies in vivo and in vitro in response to NCI program needs. f) Description of biological characteristics of animal tumors and human tumor xenografts. g) Recommendation

of host-tumor systems as models for initial screening, secondary or broad spectrum screening, tertiary or specialized screening including comparative testing of "analogs", and detailed drug evaluation. h) Provision of animal therapeutic trial data relative to clinical predictive value compared with or contrasted to existing screens. i) Provision of precise and detailed laboratory protocols for screening including parameters and criteria for activity in accordance with NCI's published format (Geran et al, "Cancer Chemotherapy Reports," Part 3, Vol. 3, No. 2, Sept. 72.

The in vivo screening tast (which will involve synthetic and natural products) will require a level of screening equivalent to 25,000 mouse leukemia L1210 tests per year. One leukemia L1210 test is defined as one group of six to 10 mice bearing L1210 treated in accordance with the published protocol for screening against L1210 in vivo (ibid.) The bulk of the in vivo screening effort utilizes the following transplantable mouse tumor models with numbers in parentheses representing an experienced-based estimate of relative effort to conduct a test in that system (for example, 1,000 melanoma B16 tests would be equivalent to 2,000 L1210 tests with respect to work effort required); leukemia L1210 (1); leukemia P388 (1); mammary carcinoma CD8F1, first generation transplant from spontaneous tumor (3); mouse colon tumor (2.5); melanoma B16 (2); and Lewis lung carcinoma (2).

The in vitro screening task will involve 700-800 compounds per year. The contractor must have experience with large scale in vivo projects. The contractor must also possess the capability to evaluate models currently in use, devise methods for reporting data, and computer program the results for models selected for use in its own and other contract laboratories.

This project is anticipated to require a level of effort of 75 man-years per year of a projected five year contract.

Contracting Officer: John Thiessen
Cancer Treatment
301-427-8125

NCI CONTRACT AWARDS

Title: Significance of mutation in carcinogenesis, continuation
Contractor: Johns Hopkins Univ., $309,124.

Title: Development of non-invasive procedures for assessment of protein coloric undernutrition in cancer patients
Contractor: Emory Univ., $385,768.

Title: Quantification of changes in body composition in cancer patients
Contractor: Univ. of Pennsylvania, $906,844.

Title: Effect of dietary protein type and level on carcinogenesis, supplemental agreement
Contractor: Univ. of Illinois, $675,365.

Title: Hematology support care project, 11 months renewal
Contractor: Microbiological Associates, $149,923.

Title: Preparation and analysis of cell surface protein fraction, continuation
Contractor: Univ. of Illinois (Chicago), $49,000.

Title: Study of innovative techniques to facilitate passage of colonoscope to the cecum, continuation
Contractor: Northwestern Univ., $157,017.

Title: Research on development of large area solid state image receptors for x-ray imaging, continuation
Contractor: Xerox Corp., Pasadena, Calif. $1,191,678.

Title: CEA and related tumor associated antigens in cancer patients
Contractor: Health Research Inc., $71,156.

Title: Ultrasonic assessment of nutritional status
Contractor: Cornell Univ., $103,174.

Title: Development and maintenance of new congenic mouse strains
Contractor: The Jackson Laboratory, $37,253.

Title: Suppressor monocytes in cancer patients
Contractor: Univ. of Minnesota, $63,530.

Title: Adoptive cellular immunotherapy for murine tumors
Contractor: Univ. of Washington, $137,920.

Title: Immunodiagnosis of leukemias, lymphomas
Contractor: Univ. of Minnesota, $123,552.

Title: Molecular studies of T-cell mediated cytotoxicity
Contractor: Duke Univ., $56,671.

Title: HLA typing on human tissue culture cell lines
Contractor: Sloan-Kettering Institute, $26,786.

Title: Selective depletion of mononuclear phagocytes in vivo
Contractor: Univ. of North Carolina, $218,246.

Title: Plasmatherapy of mouse tumors
Contractor: Sloan-Kettering, $100,300.

Title: Immunoprevention of spontaneous mammary tumors
Contractor: Institute for Medical Research, $85,432.

Title: Direct assay for lymphokine
Contractor: Stanford Univ., $137,231.

Title: Intrapleural BCG after primary surgery for lung cancer
Contractor: Albany Medical College, $110,514.

Title: Cytotoxic activity of syngeneic complement
Contractor: Stanford Univ., $83,531.

Title: Isolation and chemical characterization of antigen-binding T-cell receptors
Contractor: Univ. of Chicago, $78,325.

Title: Immunotherapy of murine leukemia using syngeneic hybrid cells
Contractor: Univ of Chicago, $79,128.

Title: Intratumoral BCG prior to radiation and cystectomy in patients with bladder cancer
Contractor: Sloan-Kettering, $50,525.

Title: Culture of long term tumor-specific cytotoxic lymphocytes for use in treatment of mouse leukemia
Contractor: Dartmouth College, $99,046.

Title: Detection and characterization of soluble antigen-antibody complexes in the circulation
Contractor: Univ. of Virginia, $84,911.

Title: Against human malignant lymphoma and leukemia tumor-associated antigens
Contractor: Univ. of California (San Diego), $164,812.

Title: Immune assays for enzymes and isozymes in cancer
Contractor: Johns Hopkins Univ., $59,412.

Title: Immunohistochemical studies of tumor associated antigens
Contractor: Univ. of Kentucky, $75,503.

Title: Immunoprophylaxis of bovine lymphosarcoma
Contractor: Univ. of Pennsylvania, $177,997.

Title: Immunoprevention of malignant tumors in the guinea pig
Contractor: Univ. of South Carolina, $72,816.

Title: Immunization with allogeneic tumor
Contractor: Sloan-Kettering, $116,228.

Title: Immunodiagnostic markers for breast carcinoma
Contractor: Emory Univ., $88,395.

Title: Genetic control of susceptibility to cancer
Contractor: Univ. of North Carolina, $77,319.

Title: Immune mechanisms of cattle
Contractor: Univ. of Minnesota (St. Paul), $62,559.

Title: Human melanoma: Evaluation of BCG immunotherapy of patients without detectable disease after removal of tumor containing lymph nodes
Contractor: UCLA, $135,784.

Title: Immunoprophylaxis of "cancer eye" in cattle
Contractor: Utah State Univ., $224,642.

Title: Intralesional immunotherapy prior to surgery in the treatment of canine breast carcinoma
Contractor: Univ. of Texas Health Science Center, $75,124.

Title: Cryopreservation of human monocytes for use in immunologic studies
Contractor: Univ. of Florida (Gainesville), $92,684.

Title: Collection of serial serum samples from cancer patients
Contractor: Memorial Hospital, $83,610.

Title: Maintenance of the NCI serum bank
Contractor: Mayo Foundation, $381,855.

Title: Development of new reagents for characterization of subpopulations of human cells important to immune response
Contractor: Univ. of Chicago, $75,588.

Title: BCG immunotherapy of recurrent superficial bladder carcinoma
Contractor: Sloan-Kettering Institute, $46,451.

Title: Biological studies of solubilized tumor antigens
Contractor: Litton Bionetics, $266,627.

Title: Purification of breast tumor associated antigens
Contractor: Vanderbilt Univ., $91,388.

Title: Purification of human tumor associated antigens
Contractor: Univ. of Kentucky, $91,502.

Title: Cell mediated reactivity of normal individuals to human tumor associated antigens
Contractor: Vanderbilt Univ., $60,432.

Title: Antigenicity of precancerous lesions in animal models
Contractor: Ohio State Univ., $73,079.

Title: Lung cancer control detection and therapy phase II, continuation
Contractor: Memorial Hospital, $2,431,000.

Title: Application digital image processing techniques to cytology automation, continuation
Contractor: Rush Presbyterian-St. Luke's Medical Center, $227,142.

Title: Prospective study of breast cancer in Tecumseh women
Contractor: Univ. of Michigan, $66,250.

Title: Benign and non-invasive breast lesions in populations at different risk for breast cancer
Contractor: Univ. of California (San Francisco), $45,000.

Title: Diagnostic and prognostic significance of an alkaline phosphatase in cancer patients, continuation
Contractor: Univ. of Wisconsin, $67,920.

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