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NCI DISAPPOINTED OVER RESPONSE TO SURVEY LEADS; CREG PROPOSALS INADEQUATE, MORE WILL BE SOUGHT

When the Third National Cancer Survey was completed and various analyses and reports based on it were prepared, NCI expected to be swamped with research proposals based on leads turned up in the survey.

NCI executives assumed that epidemiologists, other scientists, local American Cancer Society leaders, and anyone else with an interest in cancer in a geographic area would demand immediate and intensive studies on why their respective regions or population groups had higher than average incidences of particular cancers.

The fact is that the availability of a massive amount of Survey data and the breakdown of cancer incidence figures by population group and county by county throughout the U.S. have not stimulated a substantial response from the scientific community. NCI has received only a handful of grant proposals related to the Survey, and most of those have not been of high enough quality to be funded.

"Many of the proposals were not worth reviewing," Marvin Schneid-

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In Brief

CONGRESSMEN PRESS FOR MORE EXPLORATORY GRANT MONEY; MURPHY REELECTED BY UICC

TWO CONGRESSMEN, Thomas Ashley (D.-Ohio) and Charles Wilson (D.-Texas) made a pitch for more money for cancer center exploratory grants when the House was debating the HEW appropriations bill. Ashley said that 15 exploratory (planning) grant applications were approved and unfunded "due to misallocation of funds or inadequate funding levels. The Medical College of Ohio as well as institutions in California, Texas, New York, Illinois, Wisconsin, Virginia, Oklahoma, Kentucky, Pennsylvania and Indiana fell victim to this funding mismatch or gap." Wilson acknowledged that NCI has an "awesome task" in making "terribly difficult decisions" on how to spend its money, but urged that all approved exploratory grant applications be funded in fiscal 1977. . . . **GERALD MURPHY**, director of Roswell Park Memorial Institute, has been reelected secretary general of the International Union Against Cancer. . . . **CONFERENCE** on the etiology, assessment and management of bladder cancer sponsored by the National Bladder Cancer Project is scheduled for Nov. 28-Dec. 1 at Miami Beach. Write to NBCP, St. Vincent Hospital, Worcester, Mass. 01610 or phone 617-798-6295. The conference will go into current concepts and recent advances in bladder cancer research and will present a discussion of research opportunities. . . . **FDA'S ONCOLOGIC** Drugs Advisory Committee will meet Aug. 26-27 to discuss combination chemotherapy protocol design, methyl CCNU capsules, fluorouracil capsules, and to review labeling.

NCI TO SEEK MORE CREG PROPOSALS TO FOLLOW UP SURVEY RESEARCH LEADS

(Continued from page 1)

erman, director of Field Studies & Statistics for NCI, told *The Cancer Letter.* "Some in effect merely said, 'Here's my address. Send money.'"

NCI solicited proposals through the Cancer Research Emphasis Grant program rather than through contracts on the theory that this was an area where investigators should be encouraged to generate their own ideas on how to approach a problem. There was more than $2 million in the fiscal 1976 budget for those CREGs.

Schneiderman said some of the CREG proposals will be funded, but expressed disappointment over the response in general. "The review committees thought they just were not well qualified scientifically."

CREG proposals solicited by NCI to follow up Survey leads included epidemiology of cancer of the esophagus, frequency of cancer in genetic isolates, and etiology of cancer in special populations.

Schneiderman said NCI will try again with more CREG announcements. "We want people to look at their own local rates and develop epidemiological studies leading from them. We want them to look at trends in incidence—changes that could offer some clues as to causes."

The Survey compiled considerable pathological data. Schneiderman said NCI will suggest that investigators study those detailed pathology reports "and tell us what changes they see, what types they have not seen before, look into where they come from."

Variations in incidence by age groups needs further analysis, Schneiderman said. Survey data indicates there are continuing changes in incidence among some age groups, but not in others, and that the cause of some cancers in young persons may be different than the causes of the same cancer in older people.

The Survey data is available, on computer tapes and printouts, for use by any qualified investigator whether or not he is specifically following leads turned up by the survey. The statistical data tape includes 181,027 records, one for each newly diagnosed independent primary malignancy diagnosed among residents of the survey areas during 1969, 1970 and 1971. Each record includes information on the geographic region from which it came, state and local area, sex, marital status, race, birthplace, year and month of birth, age at diagnosis, year of death, recorded site, histologic type, year and month of diagnosis, method of diagnosis, diagnosis at autopsy and primary source of data—hospital record, doctor, death certificate.

"We feel the surface has just been scratched in utilizing this data," said John Young, head of the Demographic Section in the Biometry Branch.

Despite this, there is pressure from within NCI on the Branch to turn away from the Survey and go to the more current data being developed by the Surveillance, Epidemiology and End Results (SEER) program.

"We've resisted," Young said. "We feel that we have good data that needs further analysis. And we don't feel that the quality of SEER data is yet up to the quality of the Survey information. We hate to abandon the good, clean data in the Survey."

The SEER program is collecting data from selected cancer registries, including incidence trends, variations among population groups and geographic areas, changes in treatment practice and patient survival patterns. Ultimately, this information will provide more complete, more current and, NCI hopes, more accurate and usable data than that obtained in the Survey.

NCI has already requested CREG proposals based on SEER (*The Cancer Letter,* April 23). The announcement asked for "full-scale comprehensive CREG research proposals for analytic studies in etiology and/or prognosis for any form of cancer. Of special interest are research projects which may lead to identification of factors which can be modified to reduce the incidence and mortality of cancer."

Those proposals are still coming in, with a deadline of Oct. 1. Awards, if any, probably will be made during the first half of 1977.

The Biometry Branch has compiled a number of publications relating to the Survey, most of which are available from the NCI Office of Cancer Communications. Some are reprints of articles previously published, others are paper and handbound books. Reprints are:

—Demographic Patterns of Cancer Incidence in the U.S.; Non-Melanoma Skin Cancer Among Caucasians in Four Areas of the U.S.; Report on the Third National Cancer Survey; Trends in Cancer Incidence and Mortality in the U.S.; Incidence of Malignant Tumors in U.S. Children; Third National Cancer Survey—An Overview of Available Information; and Incidence of Cancer in U.S. Blacks.

Paperbound books are "Measurements of Ultraviolet Radiation in the U.S. and Comparisons with Skin Cancer Data," DHEW No. (NIH) 76-1029; and "Hospitalizations and Payments to Hospitals," DHEW No. 76-1094.

The hard-bound book is "Third National Cancer Survey: Incidence Data," DHEW No. (NIH) 75-787, available from the U.S. Government Printing Office, Washington, D.C. 20402, for $10.45.

MAILING MIXUP DELAYS JULY 23 ISSUE; CONTACT US IF YOU HAVEN'T RECEIVED IT

Individuals assigned to process and mail the July 23 issue of *The Cancer Letter* failed to do so properly, resulting in late delivery to some subscribers and possibly no delivery at all to others.

Those who have not received the July 23 issue should contact *The Cancer Letter*; copies will be sent immediately.

ONE-THIRD TO ONE-HALF OF ALL CANCER RELATED TO DIET, GORI TELLS SENATE

NCI's Gio Gori startled Sen. George McGovern's Select Committee on Nutrition & Human Needs last week when he told members that diet may be related to more than half of all cancers in women and at least one-third of all cancers in men.

Gori, who directs the Diet, Nutrition & Cancer Program, strongly implicated fat as a dietary connection to cancer—particularly in breast and colon cancer. Other cancers that appear to be diet-dependent are stomach, lover and prostate, Gori said.

Gori and Dave Kritchevsky of the Wistar Institute stressed the importance of animal studies in confirming the diet/cancer connection in man. Gori emphasized that it isn't that food causes cancer, but that certain imbalances in the diet (too much fat, for instance) cause metabolic imbalances which can predispose the individual to cancer. Animal studies reinforce this position, he said.

Gori pointed to the Japanese migrant epidemiological studies which show that diet is an important factor in cancer incidence which can reverse a disease pattern. When Japanese migrate to the U.S., their patterns of low colon and breast cancer and high stomach cancer incidences shift dramatically within two to three generations until they mimic those of the U.S., which are exactly the reverse. "These shifts take a few generations because dietary habits learned in the country of origin are slowly changed in the process of acculturation to the American way of life," Gori said. Specifically, the diet of Japanese migrants goes up in fat and starches when it is westernized. There is a linear increase in the incidence of breast cancer as dietary fat goes up, Gori said, and there is a correlation worldwide between colon cancer and fat consumption.

Animal studies show how diet can be manipulated to affect cancer development, Gori pointed out. Along with caloric restriction—the single most important factor in inhibiting tumor formation—the amounts of fat in the diet as well as the saturation of the fat tend to influence tumor incidence.

Protein may also play a part in diet's effect on cancer. "Amino acids, the component parts of proteins, have also influenced cancer development in animals. Low levels or even deficiencies of certain amino acids seem to have a therapeutic effect on cancer," Gori said.

Gori targeted three major areas that need immediate investigation:

- Defining a "desirable dietary intake" through detailed biometric studies which can be applied to the individual, not to some mythical statistical American. "The average American does not exist," he said. "We have individual Americans."

Defining a desirable dietary intake for each individual must necessarily take into account somatic factors like body build, age, sex, and behavioral factors, Gori said.

- Developing reliable methods to assess the nutritional status of individuals simply and objectively. Gori said that it is hard for health professionals and nutrition educators to make "intelligent nutritional decisions" because "the needed scientific information is not available."
- Development of precise knowledge of the nutritive value of foods. Gori feels this target area, like the second, does not require major new scientific breakthroughs, but rather a "painstaking and skilled analysis of the American diet so that intelligent selections can be made for appropriate nutritional needs."

A fourth area cited by Gori for immediate investigation is the potential use of diet and nutrition in the treatment of patients who already have cancer. Gori said that recent experiments suggest nutrition might be used as a direct form of cancer therapy, so that in effect the host is fed and the tumor starved. He said that to confirm the "initial results" of this approach, further studies are urgently needed.

Gori stressed that nutrition's role in the therapy of cancer can be investigated rapidly because it does not require new basic knowledge. Rather, "practical payoffs, immediately applicable to the cancer patient, can be expected after a few years of intensive clinical trials." He said that by September he expects to have awarded some 33 contracts and solicited grants in the DNC program. He said the largest portion of his $5 million budget is going into clinical trials because of the fast payoffs expected. He said he expects that his program could expand rapidly over the next few years as national attention becomes focused on the diet/cancer connection.

Also speaking before the committee were Ernst Wynder of the American Health Foundation; Mark Hegsted of Harvard Univ., and Gerald Wogan of MIT. Wynder called for an interdisciplinary approach to "nutritional carcinogenesis," as he termed it. He said nutrition education must begin in schools, and must take cognizance of the fact that children learn about health from their peers, rather than from adults, as revealed by a recent NCI-supported health behavior study by the foundation.

NCI ADVISORY GROUP, OTHER CANCER MEETINGS FOR AUGUST, SEPTEMBER

President's Cancer Panel—Aug. 11, NIH Bldg 31 Room 7, 9:30 a.m., open.

Committee on Cancer Immunotherapy—Aug. 12, NIH Bldg 10 Room 4B14, open 1—1:30 p.m.

National Cancer Advisory Board Subcommittee on Centers & Construction—Aug. 13, NIH Bldg 31 Room 8, 9 a.m., open.

Cancer Control Intervention Program Review Committee—Aug. 19, NIH Bldg 31 Room 8, open 11:30 a.m.—adjournment.

Workshop for Low Incidence Populations—Aug. 19-20, Snow Bird, Utah, open 9 a.m.—5 p.m. both days.
National Prostatic Cancer Project Working Cadre—Aug. 20-21, Roswell Park, open Aug. 21, 8:30 a.m.—adjournment.
National Pancreatic Cancer Project Working Cadre—Aug. 23, New Orleans, open 8:30—9 a.m.
Cancer Control Community Activities Review Committee—Aug. 23-24, NIH Bldg 31 Room 8, open Aug. 23, 8:30—9 a.m.
National Large Bowel Cancer Project Working Cadre—Aug. 26-28, Anderson Mayfair Hotel, Houston, open Aug. 26, 1—1:30 p.m.
FDA Oncologic Drugs Advisory Committee—Aug. 26-27, Parklawn Bldg Room G, open Aug. 26, 9 a.m.—4 p.m., Aug. 27, 9—11 a.m.
5th International Congress of Histochemistry & Cytochemistry—Aug. 29—Sept 3, Bucharest.
Diet & Cancer Scientific Review Committee—Sept. 1, NIH Bldg 31 Room 4, open 8:30—9:30 a.m.
2nd Congress of the International Assn. for Maxillo-Facial Surgery—Sept. 1-3, Basel, Switzerland
Cancer & Nutrition Scientific Review Committee—Sept. 2, NIH Bldg 31 Room 7, open 8:30—9:30 a.m.
Committee on Cancer Immunodiagnosis—Sept. 2, NIH Bldg 10 Room 4B14, open 1—1:30 p.m.
1st International Congress on Cell Biology—Sept. 5-10, Boston
3rd UICC Training Course in Cancer Research—Sept. 5-18, London
2nd International Symposium on Flow-Through Cytophotometry—Sept. 6-9, Munster, Germany
President's Cancer Panel—Sept. 8, NIH Bldg 31 Room 7, 9:30 a.m., open.
Tobacco Working Group—Sept. 8, NIH Bldg 31 Room 4, 9 a.m., open.
Breast Cancer Workshop—Sept. 8, Bethesda Holiday Inn, 8:30 a.m., open.
Combined Modality Committee—Sept. 9, NIH Bldg 37 Room 6B23, open 1—1:30 p.m.
Breast Cancer Epidemiology Committee—Sept. 9, Bethesda Holiday Inn, open 9:30 a.m.—adjournment.
Breast Cancer Experimental Biology Committee—Sept. 9, Landow Bldg Room C418, open 8:30 a.m.—12:30 p.m.
Breast Cancer Treatment Committee—Sept. 9, NIH Bldg 31 Room 8, open 8:30—10:30 a.m.
Breast Cancer Diagnosis Committee—Sept. 9, Bethesda Holiday Inn, open 8:30 a.m.—12:30 p.m.
Committee on Cancer Immunobiology—Sept. 9-10, Landow Bldg Room C418, open Sept. 9, 7—7:30 p.m., Sept. 10, 8:30 a.m.—adjournment.
Epidemiology of Cancer Control—Sept. 9, Roswell Park Continuing Education in Oncology, registration required.
National Bladder Cancer Project Working Cadre—Sept. 9-10, Logan Hilton Hotel, Boston, open Sept. 9, 1—5 p.m., Sept. 10, 8:30 a.m.—adjournment.
NCAB Subcommittee on Centers & Construction—Sept. 12, NIH Bldg 31 Room 10, open 7—9:30 p.m.
NCAB Subcommittee on Diagnosis & Treatment—Sept. 12, NIH Bldg 31 Room 7, open 4—4:30 p.m.
NCAB Subcommittee on Carcinogenesis & Prevention—Sept. 12, NIH Bldg 31 Room 8, open 4—4:30 p.m.
National Cancer Advisory Board—Sept. 13-15, NIH Bldg 31 Room 6, open Sept. 13, 9 a.m.—noon, Sept. 14, 9 a.m.—5 p.m., closed for the entire Sept. 15 session.

Committee on Cancer Immunotherapy—Sept. 14-15, Landow Bldg Room C418, open Sept. 14, 10:30 a.m.—5 p.m., Sept. 15, 8:30 a.m.—adjournment.
Diagnostic Research Advisory Committee—Sept. 15, NIH Bldg 31 Room 8, open 8:30 a.m.—noon.
Temporary Review Committee for the Frederick Cancer Research Advisory Committee—Sept. 16, NIH Bldg 31 Room 8, 9 a.m., open.
Committee on Cytology Automation—Sept. 16-17, NIH Bldg 31 Room 7, open Sept. 16, 9—10 a.m.
National Conference on Cancer Research & Clinical Investigation—Sept. 20-22, Chase Park Plaza Hotel, St. Louis.
Virus Cancer Program Scientific Review Committee B—Sept. 20, Landow Bldg Room C418, open 9—9:30 a.m.
Diagnostic Radiology Committee—Sept. 22, NIH Bldg 31 Room 8, open 8:30 a.m.—noon.
Cancer Control & Rehabilitation Advisory Committee Subcommittee on Community Activities—Sept. 22, Bethesda Holiday Inn, open 7:30—9:30 p.m.
CCR Advisory Committee Subcommittee on Cost Reimbursement—Sept. 22, Blair Bldg Room 110, open 1 p.m.—adjournment.
Cancer Control & Rehabilitation Advisory Committee—Sept. 23-24, NIH Bldg 31 Room 8, 9 a.m. both days, open.
Recent Advances in Cancer Treatment—Sept. 23-24, Brussels
8th Meeting of the International Society of Pediatric Oncology—Sept. 23-25, Warsaw
Virus Cancer Program Scientific Review Committee A—Sept. 27-28, NIH Bldg 37 Room 1B04, open Sept. 27, 9—9:30 a.m.
Biometry & Epidemiology Contract Review Committee—Sept. 27-29, Landow Bldg Room C418, open Sept. 27, 7—11 p.m., Sept. 28, 8:30 a.m.—noon.
Workshop on Review of the Field of Immunology for Application to Cancer Cause & Prevention—Sept. 27, Landow Bldg, 9 a.m.—5 p.m., open.
Virus Cancer Program Advisory Committee—Sept. 30-Oct. 1, NIH Bldg 31 Room 4, open 10 a.m.—adjournment both days.
Clinical Cancer Education Committee—Sept. 30—Oct. 1, NIH Bldg 1 Wilson Hall, open Sept. 30, 8:30—9:30 a.m.

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 & 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 NCI-CM-67070

Title: *Large scale extraction and isolation of plant products. Preparation of chemicals derived from natural products (primarily plants)*
Deadline: *Approximately Sept. 24*

The objective of this project is the preparation, by extraction and isolation from natural sources, of quantities of bulk chemicals and drugs (1 gram to multikilograms) for use as potential anticancer agents. The major emphasis will be on the preparation of the desired material in a multikilogram scale. Methods will be available for small scale runs in some, but not all, instances. Process development for scale-up will be required. The facilities must have the capacity for performing all types of natural products isolation, including access to pilot plant equipment (minimum

of 500 gallon glass lined reactor required). All products must be completely assayed as to identity and purity.

A well instrumented analysis laboratory is essential. The principal investigator must be trained in organic chemistry, preferably at the PhD level or equivalent, from an accredited school, and have extensive experience in chemical extraction and process development. The principal investigator must be named and all technical personnel must be assigned to the project a minimum of 50% of the time, preferably 100% of the time. It is anticipated that one contract of six technical man-years per year will be awarded for a period of three years.

Contract Specialist: W.T. Harris
Cancer Treatment
301-427-7463

Contract Awards

COMMUNITY-BASED PROGRAM FINAL PLANNING REVIEW COMING UP

With the award of the two contracts for implementation of community based cancer programs, the Community Resources Development Branch of NCI's Div. of Cancer Control & Rehabilitation is concentrating on review of the nine planning contracts in the program. All nine eventually could be awarded implementation contracts, but that is not certain at this point.

The implementation contracts, two of the largest awards ever made by NCI, went to the Michigan Cancer Foundation in Detroit and the Univ. of New Mexico in Albuquerque. The Detroit contract is for $10.7 million over five years, New Mexico's $6.8 million, also five years. Each contractor is obligated to match those amounts in either "soft" (personnel, facilities, space) or "hard" money (actual cash).

The Michigan Cancer Foundation is a United Fund agency and already has put "hard" money into the project. New Mexico hopes to raise cash by getting the state legislature to approve a special tobacco tax with proceeds earmarked for cancer.

Ruby Isom, director of the Branch, said that the first of the planning contracts, that to Rochester, N.Y., will get final review Aug. 23-24. Six others will get final review Oct. 20-22—Long Island, Los Angeles, Hawaii, Pittsburgh, Seattle, and Rhode Island.

Results of those reviews, and the recommendations of staff and reviewers, will be discussed at the November meeting of the National Cancer Advisory Board. "We want to let the Board have a look at it, tell them this is where we are," Isom said.

The last two of the planning contracts may not get final review before the end of the year, those to Connecticut and Wisconsin.

Connecticut suffered a blow to its efforts when the original principal investigator, Barbara Christine, died earlier this year. She was with the State Dept. of Health. The Univ. of Connecticut now has assumed responsibility for the project, with James Walker as PI.

"Connecticut will involve a tough decision," Isom said. "We may need to give them more time. A hundred thousand dollars over 18 months (length and amount of the award) doesn't buy much. We've received back twice that amount in local support."

Other contract awards:

Title: A comparative study of xeromammography versus film mammography
Contractors: Guttman Breast Diagnostic Institute, $60,450; Duke Univ., $82,600; and M.D. Anderson, $76,000.

Title: Breast Cancer Detection demonstration project
Contractors: Emory Univ., $265,711; Medical College of Wisconsin, $378,909; Univ. of Michigan, $282,796; Univ. of Southern California, $324,391; Univ. of Kansas, $306,258; Iowa Lutheran Hospital, $261,348; Univ. of Louisville, $365,558; Univ. of Oklahoma, $315,000; Univ. of Cincinnati, $362,151; Guttman Breast Diagnostic Institute, $399,985; Univ. of Pittsburgh, $336,222; Virginia Mason Research Center, Seattle, $298,527; Mountain States Tumor Institute, $301,819.

Title: Prototype network demonstration project for breast cancer
Contractors: West Coast Cancer Foundation, $89,002; Wilmington (Del.) Medical Center, $320,604; SUNY Downstate, $357,500; New England Medical Center, $300,000; Dartmouth College, $357,459; Univ. of Louisville, $45,124; Institute for Cancer Research, Philadelphia, $289,785; Univ. of Alabama, $124,000; Oklahoma Medical Research Foundation, $343,971; Georgia Cancer Management Network, $351,677.

Title: Prototype comprehensive network demonstration projects for head and neck cancer
Contractors: Univ. of Wisconsin, $169,696; New York State Dept. of Health, $371,417; Univ. of Mississippi, $123,872; Northern California Cancer Program, $234,742; Hahnemann Medical College, $211,882; Univ. of Arkansas, $225,656.

Title: Prototype clinical chemotherapy program in cancer control
Contractors: Cornell Univ., $406,657; Children's Hospital of Los Angeles, $79,000; Dartmouth, $14,002.

Title: Cancer Information Dissemination and Analysis Center (CIDAC) for cancer virology, immunology and other cancer related biology
Contractor: Franklin Institute, $450,646.

Title: Mammography training for the early detection of breast cancer
Contractor: M.D. Anderson, $99,716.

Title: Demonstration for reimbursement in cancer control
Contractor: Blue Cross Assn., $245,726.

Title: Surgery plus systems treatment of breast cancer
Contractor: Univ. of Pittsburgh, $498,500.

Title: Diagnosis of human leukemias
Contractor: Univ. of Massachusetts, $77,330.

Title: Human tumor or organ-associated antigens diagnostic application
Contractors: Mallory Institute, $149,471; Sloan-Kettering, $84,942.

Title: Immunotherapy of herpes virus lymphomas in marmosets
Contractor: Southwest Foundation, $121,305.

Title: Characterization of antitumor drugs: Details of effects on protein synthesis
Contractor: Yeshiva Univ., $98,896.

Title: Primary and detailed in vivo screening for anticancer activity
Contractor: Hazleton Laboratories, $872,300.

Title: Glycoproteins of the mammary cell surface
Contractor: Wistar Institute, $117,500.

Title: Cancer Information Dissemination and Analysis Center—cancer therapy
Contractor: M.D. Anderson, $433,210.

Title: Cells involved in the immune response to tumors
Contractor: Harvard College, $67,000.

Title: Isolation of antineoplastic agents from marine and terrestrial invertebrates, vertebrates and insects
Contractor: Univ. of Oklahoma, $320,324.

Title: Prototype comprehensive network demonstration project in breast cancer
Contractor: Albany Medical College, $357,500.

Title: Histologic classification of laboratory animal tumors
Contractor: National Academy of Sciences, $40,000.

Title: Cells involved in the immune response to tumors
Contractors: Robert B. Brigham Hospital, Boston, $61,250; and Uppsala Univ., Sweden, $42,000.

Title: Clinical evaluation of the use of computerized transaxial tomography in the diagnosis of brain tumors
Contractors: Massachusetts General Hospital, $204,516; and Cornell Univ., $119,717.

Title: Psychological aspects of breast cancer
Contractor: Stanford Research Institute, $701,789.

Title: Collection of specimens from patients with breast cancer
Contractor: Medical Univ. of South Carolina, $70,000.

Title: Studies of Usefulness of Carcinoembryonic antigen in diagnosis of bowel carcinoma
Contractor: Mayo Foundation, $160,000.

Title: Clinical evaluation of computerized tomographic mammography
Contractor: Mayo Foundation, $134,700.

Title: Study of correlations of dietary factors to epidemiological characteristics of breast cancer
Contractor: Chaim Sheba Medical Center, Israel, $41,200.

Title: Develop and evaluate new stains and other optical markers useful for cytopathologic specimens and develop and evaluate methods for obtaining monodisperse cell preparation of gyn cytopathologic specimens on slide
Contractor: Papanicolaou Institute, $84,055.

Title: Epidemiologic characteristics of pre- and post-menopausal breast cancer
Contractor: Duke Univ., $140,950.

Title: Suppression of endocrine function by systemic agents as treatment of human breast cancer
Contractor: Pennsylvania State Univ., $220,000.

Title: Osteotropism in mammary carcinoma metastatis
Contractor: Univ. of Connecticut, $127,000.

Title: Study of glycoproteins of the mammary cell surface
Contractor: Pennsylvania State Univ., $124,000.

Title: Prolactin interactions in mammary gland cells
Contractor: Univ. of Kansas (Kansas City), $84,600.

Title: Evaluation of serum LDH isoenzumes in breast tumors
Contractor: Mercy Hospital & Medical Center, Chicago, $29,960.

Title: Periodic screening of relatives of patients with medullary carcinoma of the thyroid using calcitonin radioimmunoassay
Contractor: Duke Univ., $497,483.

Title: Ultrasound mammography
Contractor: Albert Einstein College of Medicine, $40,000.

Title: Immunotherapy in the L_2C guinea pig leukemia
Contractor: M.D. Anderson, $126,216.

Title: Develop new prognostic and therapeutic modalities based on basic studies on cell transformation and on transformed cells
Contractor: Litton Bionetics, $1,469,492.

Title: Oncology nursing programs in community hospitals
Contractor: Waterbury Hospital Medical Center, $301,748.

Title: Lung cancer control–detection and therapy–phase II
Contractor: Johns Hopkins Univ., $951,508.

Title: Study to develop a method of predicting response to adrenalectomy
Contractor: Univ. of Chicago, $110,000.

Title: Therapy of stage II and III breast cancer patients
Contractor: Evanston Hospital, Illinois, $172,200.

Title: Microcirculation/molecular transport in mammary cancer
Contractor: Univ. of Arizona, $100,900.

Title: Pathological history of the mammary gland in pseudohermaphroditic rats and mice
Contractor: City of Hope, $92,900.

Title: Epidemiology of medullary and lobular breast cancer
Contractor: Memorial Sloan-Kettering, $76,000.

Title: Algorithm for computerized transaxial nuclide reconstruction
Contractor: Massachusetts General Hospital, $72,174.

Title: Develop and evaluate new approaches to the probelm of markers applicable to gynecologic cytopathology specimens
Contractor: Pennsylvania State Univ., $247,322.

Title: Biological characterization studies of animal mammary tumors
Contractor: Mason Research Institute, $176,769.56.

Title: Design of an experiment to assess the impact of multi-screening on total cancer mortality
Contractor: Univ. of Tennessee, $107,250.

Title: Study of preneoplastic lesions of the human mammary gland
Contractor: Univ. of California (Davis), $150,000.

Title: Studies of significance of mutation in carcinogesesis
Contractor: Johns Hopkins Univ., $274,740.

Title: Development of immunodiagnostic method for the early detection of ovarian cancer in asymptomatic women
Contractor: Roswell Park, $50,257.

Title: Development of topical chemotherapeutic agents for mycosis fungoides
Contractor: Johns Hopkins Univ., $181,960.

Title: Use of screening technique for blood in the stool as a means of detecting early cancer of the bowel
Contractor: Univ. of Minnesota, $498,890.

Title: Telephone cancer information service
Contractor: M.D. Anderson, $105,793.

Title: Mammography training
Contractor: UCLA, $114,291.

Title: Implementation of cervical cancer screening program
Contractor: Arizona State Dept. of Health, $262,822.

Title: Development and implementation of at-home rehabilitation programs
Contractor: St. Francis Hospital, Honolulu, $112,188.

Title: Development of a short training course on principals and techniques for the safe handling of chemical carcinogens
Contractor: IIT Research Institute, $106,936.

Title: Data management for the breast cancer detection demonstration project
Contractor: Univ. City Science Center, Philadelphia, $795,894.

Title: Preparation of carcinogen safety monographs
Contractor: Midwest Research Institute, $300,058.

Title: Establishment and operation of the pathology quality control system for breast cancer detection demonstration projects
Contractor: Vanderbilt Univ., $54,410.

Title: Technical support for the office of cancer communications
Contractor: Mitre Corp., $49,874.

Title: Coordinating committee for the radiologic physics center
Contractor: American Assn. for Physicists in Medicine, $205,918.

Title: Drug modified tumor antigens as immunotherapy
Contractor: Univ. of Perugia, Italy, $73,500.

Title: In vitro assays for patient immunity to sarcoma
Contractor: Univ. of Florida, $45,000.

Title: Antibody-drug conjugates in the immunotherapy
Contractor: Weizmann Institute, Israel, $92,250.

Title: Adoptive immunotherapy of murine leukemias using lymphoid cells sensitized in vitro to leukemia antigens
Contractor: Hebrew Univ., Israel, $79,182.

Title: Phase I study of mycobacterium phlei in advanced lung cancer, hypernephroma and malignant melanoma
Contractor: Univ. of Minnesota, $73,891.

Title: Evaluation of immunotherapy with tumor preparations in man (active specific immunotherapy)
Contractor: Sloan-Kettering Institute, $119,049.

Title: Immunotherapy of mouse tumors using immunoresponsive cells sensitized in vitro
Contractor: Wistar Institute, $98,835.

Title: Quantitative assays of monocyte-macrophage function
Contractor: Ohio State Univ., $80,622.

Title: Preparation and distribution of rabbit serum complement
Contractor: Jackson Laboratory, $98,961.

Title: Evaluation of C. parvum as an adjunct to chemotherapy in advanced cancer of the breast and of the lung
Contractor: UCLA, $96,135.

Title: Immunotherapy of C3H murine mammary carcinomas
Contractor: Univ. of Pittsburgh, $58,032.

Title: Thyroiditis as immunotherapy
Contractor: Columbia Univ., $77,435.

Title: Studies of immune stimulants in patients receiving radiation therapy
Contractor: Emory Univ., $200,759.

Title: Activated macrophages as immunotherapeutic agents
Contractor: Robert B. Brigham Hospital, $47,399.

Title: Subcellular fractions and immunotherapy: Effect of transfer factor on virus-induced tumors in marmoset monkey
Contractor: Rush-Presbyterian-St. Luke's Medical Center, $52,500.

Title: Adjuvant tumor specific active immunotherapy of squamous cell carcinoma of the lung
Contractor: New York State Dept. of Health, $148,211.

Title: Therapy of tumors in mice with tumor necrosis factor (TNF)
Contractor: Sloan-Kettering Institute, $78,634.

Title: Immunotherapy: New approaches to immunotherapy
Contractor: Oklahoma Medical Research Foundation, $72,469.

Title: Corynebacterium parvum immunotherapy of squamous cell carcinoma of the lung treated by resection or radiotherapy
Contractor: Thomas Jefferson Univ., $225,105.

Title: Immunotherapy of squamous cell carcinoma of the lung treated by resection or radiotherapy
Contractor: Long Island Jewish-Hillside Medical Center, $96,009.

Title: Inelastic laser light scattering studies on nucleic acids, nucleo-proteins and viruses
Contractor: Michigan Cancer Foundation, $34,850.

Title: Maintenance and monitoring of a colony of nursery reared, sero-negative, HSV-free squirrel monkeys
Contractor: Tulane Univ., $60,545.

Title: Maintenance of a cancer incidence reporting system
Contractor: Fred Hutchinson Cancer Center, $580,100.

Title: Studies of oncogenic herpes-viruses in primates
Contractor: Harvard Univ., $92,000.

Title: Studies on immunology of murine leukemia virus infection
Contractor: New England Medical Center, $62,488.

Title: Maintenance of population based cancer registry
Contractor: Commonwealth of Puerto Rico, $77,238.

Title: Studies of latent virus infection and transmission
Contractor: Southwest Foundation, $370,245.

Title: Studies of the viral involvement in canine mammary carcinoma
Contractor: Pfizer, Inc., $150,000.

Title: Research on Hodgkins disease and other malignant lymphomas
Contractor: Stanford Univ., $375,000.

Title: Studies to determine a viral involvement of feline mammary carcinoma
Contractor: Sloan-Kettering Institute, $150,000.

Title: Studies on polycyclic hydrocarbon metabolism in the respiratory tract
Contractor: Univ. of Texas Southwestern Medical School, $161,222.

Title: Support for conference on aquatic pollutants and biological effects with emphasis on neoplasia
Contractor: New York Academy of Sciences, $38,000.

Title: Levamisole in the treatment of squamous cell carcinoma of the lung
Contractor: Univ. of Buenos Aires, Argentina, $78,495.

Title: Establishment of a continued development of a tissue culture transformation system
Contractor: Columbia Univ., $483,727.

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