F. Showers
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National Cancer Institute

1972 FACT BOOK

NATIONAL CANCER PROGRAM

U. S. Department of Health, Education, and Welfare / National Institutes of Health / National Cancer Institute

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PREFACE

The information set forth in this publication is compiled and amended annually by the National Cancer Institute and is intended primarily for use by members of the Institute staff and by others involved in the administration of NCI activities. This edition does not reflect all of the changes resulting from the passage of the National Cancer Act of 1971 signed into law by the President on December 23, 1971. Questions regarding any of the information contained herein may be directed to the NCI Financial Management Office.

Revised January 1972

DIRECTORY OF PERSONNEL

NATIONAL CANCER INSTITUTE
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014
Area Code 301/656-4000

		EXTENSION
DIRECTOR FRANK J. RAUSCHER, JR. Dr. ~~Carl G. Baker~~	**BUILDING 31** 11-A-52	65615
ASSISTANT DIRECTOR Dr. Bayard H. Morrison	**BUILDING 31** 11-A-51	63308
ASSISTANT DIRECTOR Dr. Anthony M. Bruno	**BUILDING 31** 11-A-48	65218
CLINICAL DIRECTOR Dr. Alfred S. Ketcham	**BUILDING 10** 10-N-116	64164
ASSOCIATE DIRECTOR FOR PROGRAM PLANNING AND ANALYSIS Louis M. Carrese	**BUILDING 31** 11-A-49	66445
EXECUTIVE OFFICER Calvin B. Baldwin, Jr.	**BUILDING 31** 11-A-52	65737
CHIEF, RESEARCH INFORMATION BRANCH Jane E. Collins (Acting)	**BUILDING 31** 10-A-31	62241
SCIENTIFIC AND TECHNICAL INFORMATION OFFICER Dr. John H. Schneider	**BUILDING 31** 10-A-35A	65515
ADMINISTRATIVE OFFICER Thomas L. Kearns	**BUILDING 31** 11-A-33	65801
FINANCIAL MANAGER Earle L. Browning	**BUILDING 31** 11-A-18	65803
PERSONNEL OFFICER Rosemary H. Williams	**BUILDING 31** 11-A-19	65251
CHIEF, RESEARCH CONTRACTS BRANCH Carl A. Fretts	**BUILDING 31** 10-A-03	63573
SCIENTIFIC DIRECTOR FOR CHEMOTHERAPY Dr. C. Gordon Zubrod	**BUILDING 37** 6-A-17	64291
ADMINISTRATIVE OFFICER Charles E. Leasure	**BUILDING 37** 6-A-09	64525
SCIENTIFIC DIRECTOR FOR ETIOLOGY Dr. ~~Frank J. Rauscher, Jr.~~	**BUILDING 31** 11-A-03	65946
ADMINISTRATIVE OFFICER John P. Patterson	**BUILDING 31** 11-A-04	66556
ASSOCIATE DIRECTOR FOR EXTRAMURAL ACTIVITIES Dr. J. Palmer Saunders	**BUILDING 31** 10-A-03	65147
CHIEF, GRANTS ADMINISTRATION BRANCH Leo F. Buscher	**WESTWOOD BUILDING** 8-A-18	67753
HEAD, ADMINISTRATIVE MANAGEMENT SECTION Edith F. Phillips	**BUILDING 31** 10-A-10	65915
SCIENTIFIC DIRECTOR FOR GENERAL LABORATORIES AND CLINICS Dr. Nathaniel I. Berlin	**BUILDING 10** 4-B-17	64346
ADMINISTRATIVE OFFICER H. Kenneth Painter	**BUILDING 31** 10-A-30	63381

NATIONAL CANCER INSTITUTE HISTORICAL DATA

Prior to the establishment of the National Cancer Institute in August 1937, several legislative developments pertinent to dealing with the cure of cancer were introduced in Congress:

February 4, 1927. Senator M. M. Neely, West Virginia, introduced S. 5589, "To authorize a reward for the discovery of a successful cure for cancer, and to create a commission to inquire into and ascertain the success of such cure." The reward was to be $5 million.

March 7, 1928. Senator M. M. Neely introduced S. 3554, "To authorize the National Academy of Sciences to investigate the means and methods for affording Federal aid in discovering a cure for cancer and for other purposes."

April 23, 1929. Senator W. J. Harris, Georgia, introduced S. 466, "To authorize the Public Health Service and the National Academy of Sciences jointly to investigate the means and methods for affording Federal aid in discovering a cure for cancer and for other purposes."

May 29, 1929. Senator W.J. Harris introduced S. 4531, authorizing a survey in connection with the control of cancer and providing "That the Surgeon General of the Public Health Service is authorized and directed to make a general survey in connection with the control of cancer and submit a report thereon to the Congress as soon as practicable, together with his recommendations for necessary Federal legislation."

April 2, 1937. Senator Homer T. Bone of Washington introduced S. 2067, "Authorizing the Surgeon General of the Public Health Service to control and prevent the spread of the disease of cancer." It authorized an annual appropriation of $1 million.

April 12, 1937. Congressman Warren G. Magnuson of Washington introduced H.R. 6100, an identical bill to S. 2067.

April 29, 1937. Congressman Maury Maverick of Texas introduced H.R. 6767, "To promote research in the cause, prevention, and methods of diagnosis and treatment of cancer, to provide better facilities for the diagnosis and treatment of cancer, to establish a National Cancer Center in the Public Health Service, and for other purposes." It authorized an appropriation of $2,400,000 for the first year and $1 million annually thereafter. The legal office of PHS had helped draft the bill on basis of suggestions made by Dr. Dudley Jackson of San Antonio, Texas.

July 8, 1937. A joint hearing of the Senate and House committees was conducted before a Subcommittee on Cancer Research, and a revised bill was written.

July 23, 1937. The National Cancer Institute Act was passed by Congress.

August 5, 1937. The National Cancer Institute Act, Public Law 244, 75th Congress, was signed by President Franklin D. Roosevelt, "To provide for, foster, and aid in coordinating research relating to cancer; to establish the National Cancer Institute; and for other purposes." An appropriation of $700,000 for each fiscal year was authorized.

The original National Cancer Act of 1937 established the mission of the NCI as follows:

1. To conduct, assist, and foster researches, investigations, experiments, and studies relating to the cause, prevention, and methods of diagnosis and treatment of cancer;
2. To promote the coordination of researches conducted by the Institute and similar researches conducted by other agencies, organizations, and individuals;
3. To procure, use, and lend radium as hereinafter provided;
4. To provide training and instruction in technical matters relating to the diagnosis and treatment of cancer;
5. To provide fellowships in the Institute from funds appropriated or donated for such purpose;
6. To secure for the Institute consultation services and advice of cancer experts from the United States and abroad; and

7. To cooperate with State health agencies in the prevention, control, and eradication of cancer.

Subsequent to the establishment of the National Cancer Institute several prominent pieces of legislation have been introduced and/or enacted by Congress and the President to further the effort toward the prevention and cure of cancer.

March 28, 1938. House Joint Resolution 468, 75th Congress, was passed, "To dedicate the month of April in each year to a voluntary national program for the control of cancer."

July 1, 1944. The Public Health Service Act, Public Law 410, 78th Congress, provided that "The National Cancer Institute shall be a division in the National Institute of Health." The act also revised and consolidated many revisions into a single law. The limit of $700,000 annual appropriation was removed.

August 15, 1950. Public Law 692, 81st Congress, increased the term of office of National Advisory Cancer Council members from 3 to 4 years and the size of the Council from six to 12 members, exclusive of the ex officio members.

December 4, 1970. Senator Ralph Yarborough, Texas, introduced S. 4564, "A bill which would establish a National Cancer Authority for the purpose of devising and implementing a national program for the conquest of the world's most dreaded disease — cancer."

January 22, 1971. In his State of the Union Message President Nixon announced that he would ask for the appropriation of an additional $100 million to launch an intensive effort to control cancer, and that he would ask later for whatever additional funds could be effectively used. The President said: "The time has come when the same kind of concentrated effort that split the atom and took man to the moon should be turned toward conquering this dread disease. Let us make a total national commitment to achieve this goal."

In the opening weeks of the 92nd Congress many bills and resolutions were introduced, including S. 34, which incorporated the recommendations of the Yarborough Committee to create an independent cancer agency within the Executive Branch reporting directly to the President, on the model of NASA and including the present National Cancer Institute. S. 34 was introduced January 25 by Senators Kennedy (D-Mass.) and Javits (R-N.Y.) and 24 other senators.

February 18, 1971. In his Health Message the President referred to the above requests for additional funds and stated that he was directing the Secretary of HEW to establish a new Cancer Conquest Program in the Office of the Director of the NIH and would also establish a new Advisory Committee on the Conquest of Cancer.

March through November, 1971. Hearings on proposed legislation relating to cancer research expansion were held by both House and Senate subcommittees.

October 18, 1971. The President announced that the Army's Biological Defense Research Center at Fort Detrick, Maryland would be converted into a leading center for cancer research as part of the major campaign to conquer cancer.

December 7, 1971. After three conference sessions that began on November 30, the Senate-House Conference Committee agreed on S. 1828.

December 9, 1971. The House passed the bill by voice vote.

December 10, 1971. The Senate passed the bill 85-0 and sent it to the President for signature.

December 23, 1971. The President signed the National Cancer Act of 1971.

Following are some of the major highlights contained within this act:

1. Plan and develop an expanded, intensified, and coordinated cancer research program.

2. A three-member President's Cancer Panel to appraise the National Cancer Program is to be established to monitor the development and execution of that program. Any delays or blockages in rapid execution of the Program shall immediately be brought to the attention of the President.

3. Additional authorities (for example, for construction and contracting) were given to the Director of the National Cancer Institute.

4. The National Cancer Advisory Board will replace the National Advisory Cancer Council with some changes. The Board shall advise and assist the Director of the National Cancer Institute with respect to the National Cancer Program. Added to the Board are medical

representatives from the Veterans Administration and the Department of Defense. The scientific members of the Board must be experts in the cancer field.

5. A cancer control program with a separate authorization was added.

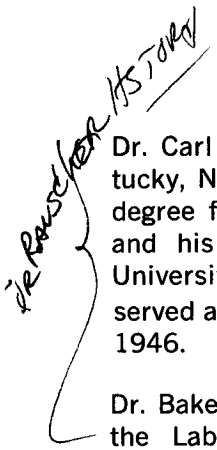
6. Authorization for the establishment of fifteen new National Cancer Research and Demonstration Centers for clinical research, training, and demonstration of advanced diagnostic and treatment methods relating to cancer was included.

7. The Director of the National Cancer Institute was given the authority to approve grants for research or training purposes up to $35,000 without National Cancer Advisory Board approval and over $35,000 with Board approval.

NATIONAL CANCER INSTITUTE DIRECTORS

Carl Voegtlin, Ph.D.	January 13, 1938 to July 31, 1943
Roscoe Roy Spencer, M.D.	August 1, 1943 to June 30, 1947
Leonard Andrew Scheele, M.D.	July 1, 1947 to April 6, 1948
John Roderick Heller, M.D.	May 15, 1948 to June 30, 1960
Kenneth Milo Endicott, M.D.	July 1, 1960 to November 9, 1969
Carl Gwin Baker, M.D.	November 10, 1969 to ~~Present~~

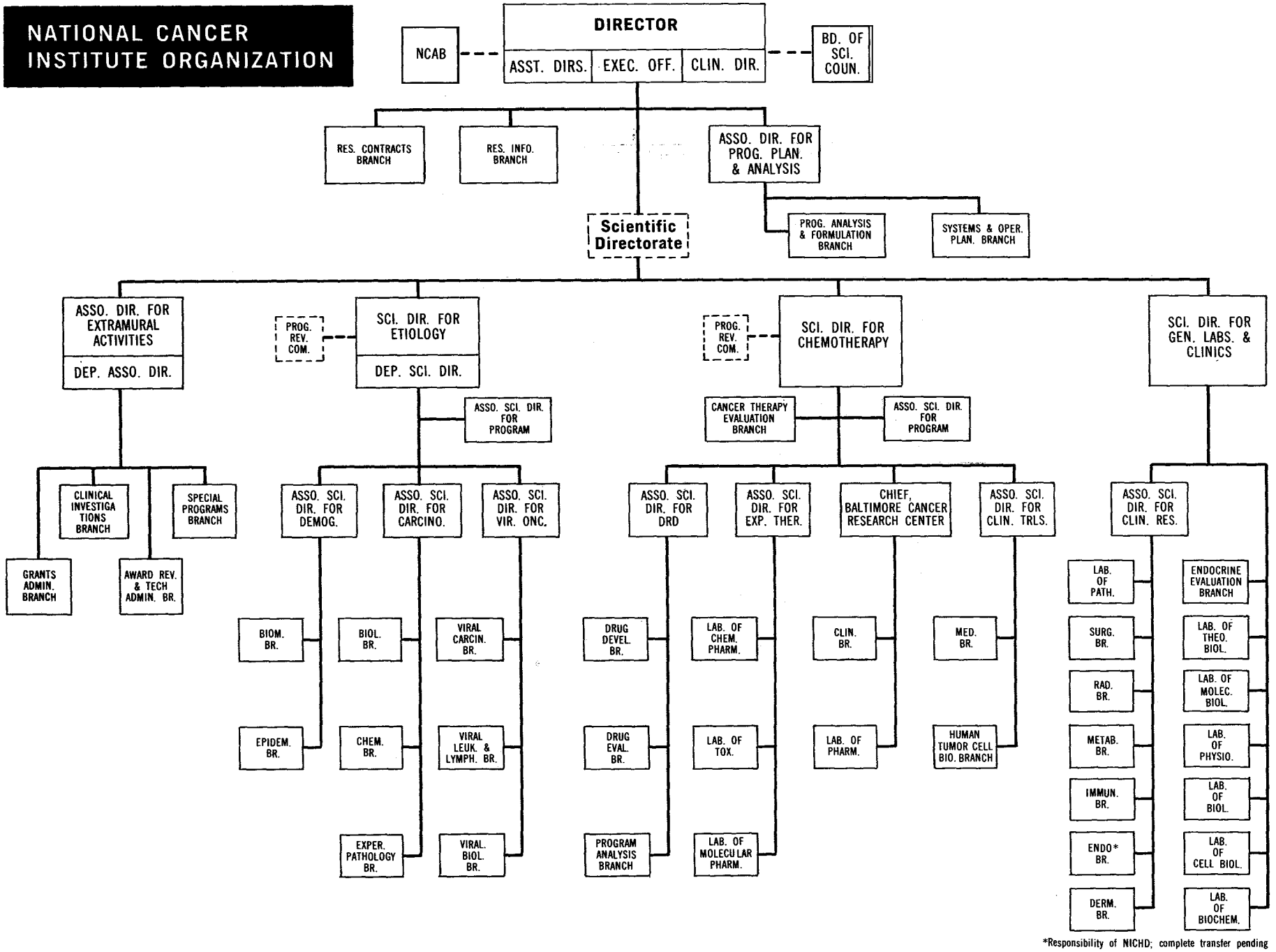
FRANK RAUSCHER, JR. MAY , 1972 TO PRESENT



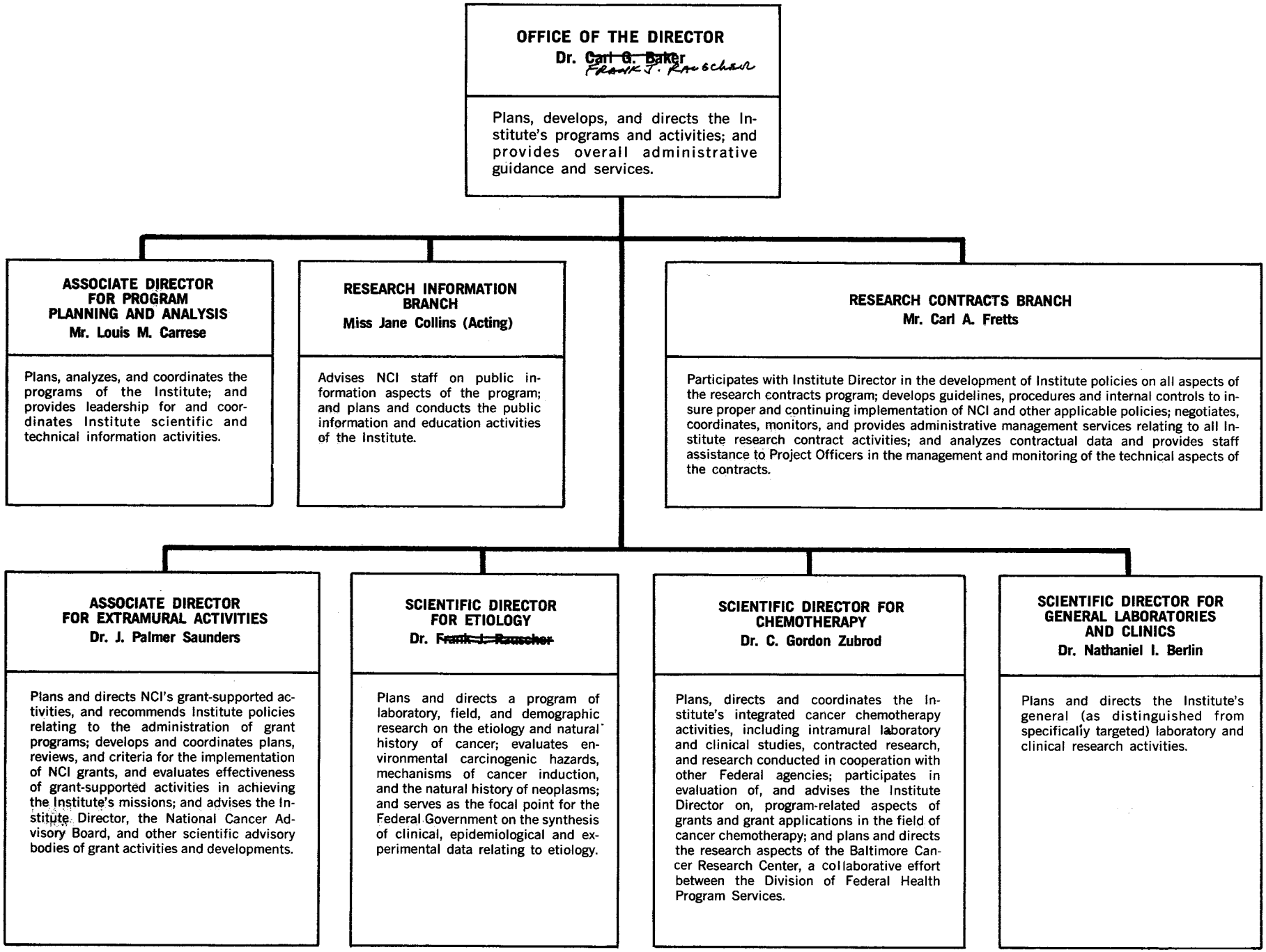
Dr. Carl Gwin Baker was born in Louisville, Kentucky, November 27, 1920, and received his M.D. degree from the University of Louisville in 1944 and his M.A. degree in biochemistry from the University of California at Berkeley in 1949. He served as a Medical Officer in the U.S. Navy, 1945-1946.

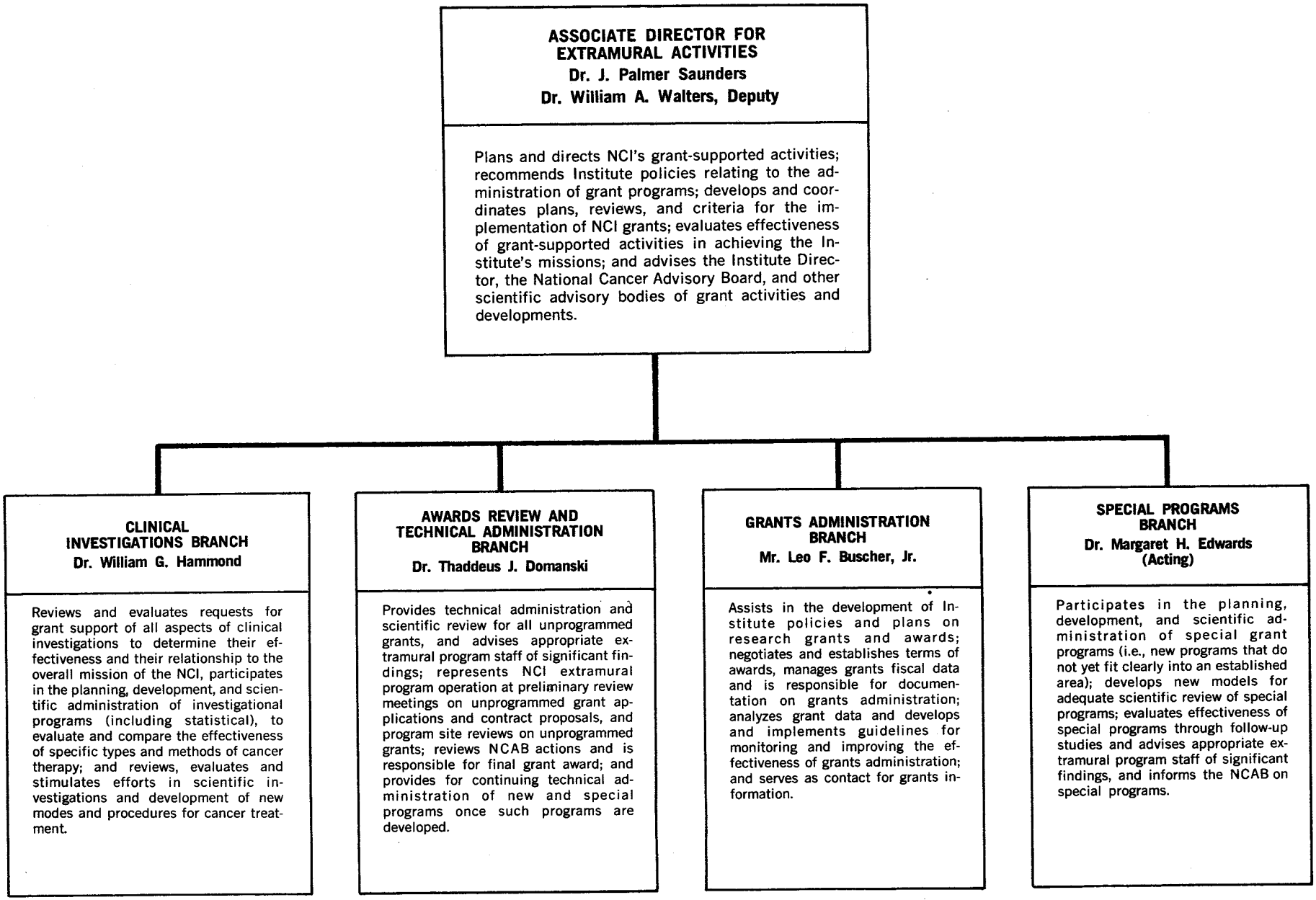
Dr. Baker entered the PHS in 1949 and served in the Laboratory of Biochemistry, the Research Grants Branch, and the Office of the Director, NCI, until 1958 when he was appointed Assistant Director, NCI. During 1957-1958 he was Assistant to the Associate Director for Intramural Research, NIH. He became Associate Director for Program, NCI, in 1961 after serving as Acting Scientific Director for Intramural Research. He was named Scientific Director for Etiology, NCI, in 1967. He became Acting Director, November 10, 1969, and was appointed Director, July 13, 1970.

NATIONAL CANCER INSTITUTE ORGANIZATION



*Responsibility of NICHD; complete transfer pending


OFFICE OF THE DIRECTOR
Dr. Carl G. Baker
Frank J. Rauscher
Plans, develops, and directs the Institute's programs and activities; and provides overall administrative guidance and services.
ASSOCIATE DIRECTOR FOR PROGRAM PLANNING AND ANALYSIS
Mr. Louis M. Carrese
Plans, analyzes, and coordinates the programs of the Institute; and provides leadership for and coordinates Institute scientific and technical information activities.
RESEARCH INFORMATION BRANCH
Miss Jane Collins (Acting)
Advises NCI staff on public information aspects of the program; and plans and conducts the public information and education activities of the Institute.
RESEARCH CONTRACTS BRANCH
Mr. Carl A. Fretts
Participates with Institute Director in the development of Institute policies on all aspects of the research contracts program; develops guidelines, procedures and internal controls to insure proper and continuing implementation of NCI and other applicable policies; negotiates, coordinates, monitors, and provides administrative management services relating to all Institute research contract activities; and analyzes contractual data and provides staff assistance to Project Officers in the management and monitoring of the technical aspects of the contracts.
ASSOCIATE DIRECTOR FOR EXTRAMURAL ACTIVITIES
Dr. J. Palmer Saunders
Plans and directs NCI's grant-supported activities, and recommends Institute policies relating to the administration of grant programs; develops and coordinates plans, reviews, and criteria for the implementation of NCI grants, and evaluates effectiveness of grant-supported activities in achieving the Institute's missions; and advises the Institute Director, the National Cancer Advisory Board, and other scientific advisory bodies of grant activities and developments.
SCIENTIFIC DIRECTOR FOR ETIOLOGY
Dr. Frank J. Rauscher
Plans and directs a program of laboratory, field, and demographic research on the etiology and natural history of cancer; evaluates environmental carcinogenic hazards, mechanisms of cancer induction, and the natural history of neoplasms; and serves as the focal point for the Federal Government on the synthesis of clinical, epidemiological and experimental data relating to etiology.
SCIENTIFIC DIRECTOR FOR CHEMOTHERAPY
Dr. C. Gordon Zubrod
Plans, directs and coordinates the Institute's integrated cancer chemotherapy activities, including intramural laboratory and clinical studies, contracted research, and research conducted in cooperation with other Federal agencies; participates in evaluation of, and advises the Institute Director on, program-related aspects of grants and grant applications in the field of cancer chemotherapy; and plans and directs the research aspects of the Baltimore Cancer Research Center, a collaborative effort between the Division of Federal Health Program Services.
SCIENTIFIC DIRECTOR FOR GENERAL LABORATORIES AND CLINICS
Dr. Nathaniel I. Berlin
Plans and directs the Institute's general (as distinguished from specifically targeted) laboratory and clinical research activities.


ASSOCIATE DIRECTOR FOR EXTRAMURAL ACTIVITIES
Dr. J. Palmer Saunders
Dr. William A. Walters, Deputy
Plans and directs NCI's grant-supported activities; recommends Institute policies relating to the administration of grant programs; develops and coordinates plans, reviews, and criteria for the implementation of NCI grants; evaluates effectiveness of grant-supported activities in achieving the Institute's missions; and advises the Institute Director, the National Cancer Advisory Board, and other scientific advisory bodies of grant activities and developments.
CLINICAL INVESTIGATIONS BRANCH
Dr. William G. Hammond
Reviews and evaluates requests for grant support of all aspects of clinical investigations to determine their effectiveness and their relationship to the overall mission of the NCI, participates in the planning, development, and scientific administration of investigational programs (including statistical), to evaluate and compare the effectiveness of specific types and methods of cancer therapy; and reviews, evaluates and stimulates efforts in scientific investigations and development of new modes and procedures for cancer treatment.
AWARDS REVIEW AND TECHNICAL ADMINISTRATION BRANCH
Dr. Thaddeus J. Domanski
Provides technical administration and scientific review for all unprogrammed grants, and advises appropriate extramural program staff of significant findings; represents NCI extramural program operation at preliminary review meetings on unprogrammed grant applications and contract proposals, and program site reviews on unprogrammed grants; reviews NCAB actions and is responsible for final grant award; and provides for continuing technical administration of new and special programs once such programs are developed.
GRANTS ADMINISTRATION BRANCH
Mr. Leo F. Buscher, Jr.
Assists in the development of Institute policies and plans on research grants and awards; negotiates and establishes terms of awards, manages grants fiscal data and is responsible for documentation on grants administration; analyzes grant data and develops and implements guidelines for monitoring and improving the effectiveness of grants administration; and serves as contact for grants information.
SPECIAL PROGRAMS BRANCH
Dr. Margaret H. Edwards (Acting)
Participates in the planning, development, and scientific administration of special grant programs (i.e., new programs that do not yet fit clearly into an established area); develops new models for adequate scientific review of special programs; evaluates effectiveness of special programs through follow-up studies and advises appropriate extramural program staff of significant findings, and informs the NCAB on special programs.

SCIENTIFIC DIRECTOR FOR ETIOLOGY
Dr. Frank J. Rauscher, Jr.
Dr. James A. Peters, Deputy

Plans and directs a program of laboratory, field, and demographic research on the etiology and natural history of cancer; evaluates environmental carcinogenic hazards, mechanisms of cancer induction, and the natural history of neoplasms; and serves as the focal point for the Federal Government on the synthesis of clinical, epidemiological and experimental data relating to etiology.

ASSOCIATE SCIENTIFIC DIRECTOR FOR PROGRAM
Dr. Gio Gori

Analyzes all etiological research activities of the Institute and participates in the planning of a coordinated etiological research program; and evaluates and determines priority for those fields of carcinogenesis in greatest need of study, in terms of public need and probability of success.

ASSOCIATE SCIENTIFIC DIRECTOR FOR DEMOGRAPHY
Dr. Marvin Schneiderman (Acting)

Plans, conducts, and evaluates demographic research activities of the NCI and provides statistical services for all NCI research programs.

ASSOCIATE SCIENTIFIC DIRECTOR FOR CARCINOGENESIS
Dr. Umberto Saffiotti

Plans and administers a program of basic and applied research in carcinogenesis leading to the identification or definition of environmental carcinogens, and to the elucidation of carcinogenesis mechanisms.

ASSOCIATE SCIENTIFIC DIRECTOR FOR VIRAL ONCOLOGY
Dr. John B. Moloney

Plans and conducts the Institute's program of research dealing with the viruses as etiological agents of cancer. Supports programmatic investigations aimed at the detection, propagation, characterization, prevention and control of tumor viruses and/or their induced diseases.

BIOMETRY BRANCH
Mr. William M. Haenszel

Plans and conducts independent and cooperative research studies in cancer, using mathematical and analytic statistics, studying the distribution of cancer among populations; analyzes the natural history of cancer in individuals and populations; evaluates therapeutic measures in patients; and designs experimental models for laboratory and clinical investigations.

EPIDEMIOLOGY BRANCH
Dr. Robert W. Miller

Plans and conducts independent and cooperative epidemiologic studies of the distribution and occurrence of human cancer, with identification of its characteristics and determinants; and provides consultation on epidemiologic aspects of cancer to physicians and scientists.

BIOLOGY BRANCH
Dr. Herbert J. Rapp

Plans, develops, and conducts a research program involving immunological and immunochemical investigation of tumor specific immunity, with emphasis on the development of methods for studies of the humoral and cellular immune response to tumors; biochemical characterization and elucidation of the structure of cell antigens (normal and malignant); studies of the immune mechanisms involved in cell damage and in the interaction of antigens, antibodies, and complement; investigation of *in vitro* cellular systems for chemical carcinogenesis; *in vitro* and *in vivo* studies on the teratogenic and mutagenic activities of environmental carcinogenic agents and their implications for carcinogenesis.

CHEMISTRY BRANCH
Dr. Harry V. Gelboin

Plans and conducts studies and experiments to elucidate the fundamental nature of the interaction of chemical agents with living systems in the induction of cancer, at the host, tissue, cellular and molecular levels; and analyzes chemical structure of potential environmental carcinogens to identify active components.

EXPERIMENTAL PATHOLOGY BRANCH
Dr. Richard Bates (Acting)

Plans, develops, and implements a coordinated research program involving: development and characterization of animal models for carcinogenesis research; development and standardization of animal bioassay systems for carcinogenesis tests; development of standards of pathology for the evaluation of carcinogenic effects; correlation of chemical and toxicological data in the selection and screening of chemical carcinogens; biochemical studies on the metabolism of chemical carcinogens in selected animal systems; and implementation of carcinogen screening and bioassay program using standardized methods.

VIRAL LEUKEMIA AND LYMPHOMA BRANCH
Dr. George J. Todaro

Plans and conducts research on virus-host relationships in leukemia and lymphoma with tumor viruses of RNA and DNA composition, with particular emphasis on molecular (subparticulate) aspects of viral oncogenesis.

VIRAL BIOLOGY BRANCH
Dr. Robert Manaker (Acting)

Plans and conducts research to determine the relationship of horizontally transmitted viruses to neoplastic diseases of man and animal. Devises and tests effective means for the prevention and control of these diseases and viruses.

VIRAL CARCINOGENESIS BRANCH
Dr. Robert J. Huebner

Plans, conducts, and manages research and development on the "virology" of animal and human neoplasms with emphasis on the natural history of tumors and their inducing agents — predominantly of the vertical type.

SCIENTIFIC DIRECTOR FOR CHEMOTHERAPY
Dr. C. Gordon Zubrod

Plans, directs and coordinates the Institute's integrated cancer chemotherapy activities, including intramural laboratory and clinical studies, contracted research, and research conducted in cooperation with other Federal agencies; participates in evaluation of, and advises the Institute Director on, program-related aspects of grants and grant applications in the field of cancer chemotherapy; and plans and directs the research aspects of the Baltimore Cancer Research Center, a collaborative effort between the Division of Hospitals and the NCI.

CANCER THERAPY AND EVALUATION BRANCH
Dr. Stephen K. Carter

Implements and monitors a comprehensive cancer therapy clinical contract program designed to provide highly specific and immediate clinical trials of anti-cancer drugs that have demonstrated high activity in animals in the preclinical phase of the cancer chemotherapy program. Reviews and evaluates the cancer therapy activities of a large clinical program performed in collaboration with the Veterans Administration and with other collaborative groups and individual physicians. Maintains continuing liaison with various advisory and consultant groups established as working committees to study the effectiveness of specific types and methods of cancer therapy. Responsible for the communication and filing of all information required by the Food and Drug Administration in connection with the drug development program of the NCI.

ASSOCIATE SCIENTIFIC DIRECTOR FOR PROGRAM
Dr. Seymour M. Perry

Analyzes the chemotherapeutic activities of the Institute; participates in the coordination and planning of the chemotherapeutic research program; evaluates and participates in the determination of priorities for those areas of cancer therapy in greatest need of study, in terms of public need and probability of success.

ASSOCIATE SCIENTIFIC DIRECTOR FOR DRUG RESEARCH AND DEVELOPMENT
Dr. Saul A. Schepartz

Plans and directs the first, or drug development and evaluation, phase of the cancer chemotherapy program, primarily conducted through research contracts and including technical information services to Drug Research and Development and other collaborative research programs.

ASSOCIATE SCIENTIFIC DIRECTOR FOR EXPERIMENTAL THERAPEUTICS
Dr. Vincent T. Oliverio (Acting)

Plans and directs studies concerning the pharmacologic and toxicologic aspects of cancer chemotherapy.

CHIEF, BALTIMORE CANCER RESEARCH CENTER
Dr. Michael D. Walker (Acting)

Conducts an integrated program of laboratory and clinical research on the therapy and management of cancer patients, including pharmacologic investigations of the mechanisms-of-action of anti-cancer drugs. This program is a collaborative endeavor between the Division of Hospitals and the NCI.

ASSOCIATE SCIENTIFIC DIRECTOR FOR CLINICAL TRIALS
Dr. Paul P. Carbone

Plans and directs the intramural clinical research aspects of the Institute's chemotherapy program.

DRUG DEVELOPMENT BRANCH
Dr. Harry B. Wood, Jr.

Develops and administers a program for obtaining substances for evaluation as anti-cancer agents; develops chemical data to establish priorities for evaluating comparative effectiveness of agents; and stimulates submission of proposals for contracts and grants for synthesis of new agents and for large-scale production of materials required for further assay or clinical trial, exercising technical supervision of contractors.

DRUG EVALUATION BRANCH
Dr. John M. Venditti

Administers an integrated program of contractual and laboratory research; evaluates drugs in experimental systems for potential anti-cancer activity and recommends new agents to be studied in man; studies toxicologic and pharmacologic effects of new agents in animals, in order to permit their safe study in man; develops new and improved laboratory methods for evaluating anti-tumor therapeutic agents; and conducts basic studies to develop new approaches to improved chemotherapy in man.

PROGRAM ANALYSIS BRANCH
Mrs. Barbara R. Murray

Plans and conducts the organization of technical information on cancer chemotherapy, including information generated by Drug Research and Development and other collaborative research programs; and analyzes and evaluates the flow of statistical data concerning chemotherapy, providing feedback to the laboratory and clinical programs.

HUMAN TUMOR CELL BIOLOGY BRANCH
Dr. Robert C. Gallo (Acting)

Develops, implements, and analyzes data obtained from studies of cellular proliferation, cytogenetics and biochemical growth characteristics of normal and malignant human cells both in vivo and in vitro. The control of cellular growth, differentiation, maturation and malignant transformation in human cells are investigated. The ultimate objective of the program is to enhance the understanding of cell regulatory mechanisms in order to permit the optimal use of antitumor agents in the therapy of cancer.

MEDICINE BRANCH
Dr. Paul P. Carbone

Plans and conducts on integrated clinically oriented research program with major emphasis on therapy, particularly chemotherapy and related pharmacologic studies of neoplastic disease; conducts studies of white blood cell and platelet formation, immunochematology, the biochemistry and physiology of normal and malignant white blood cells, and cytogenetics; studies the effects of neoplastic disease and various anti-tumor agents on immune response; and provides general medical care including admission and discharge for cancer patients in the Clinical Center.

LABORATORY OF CHEMICAL PHARMACOLOGY
Dr. Vincent T. Oliverio

Plans and conducts research in pharmacology of chemotherapeutic agents with major emphasis on evaluation and understanding of the biologic and biochemical effect, absorption, distribution, metabolism and excretion of such agents; studies the mechanism of resistance to chemotherapy; and selects new agents for clinical trial, and seeks to increase effectiveness of agents currently in use.

LABORATORY OF TOXICOLOGY
Dr. Robert L. Dixon

Plans and conducts experiments to determine relationships between dose and schedule and route of administration of anti-cancer agents and their biological effects in experimental animals; designs systems for use of laboratory animals to predict toxic and therapeutic effects of anti-cancer drugs in man and to elucidate mechanism of toxic action; and studies the practical and theoretical aspects of the joint action of drugs.

LABORATORY OF MOLECULAR PHARMACOLOGY
Dr. Kurt W. Kohn

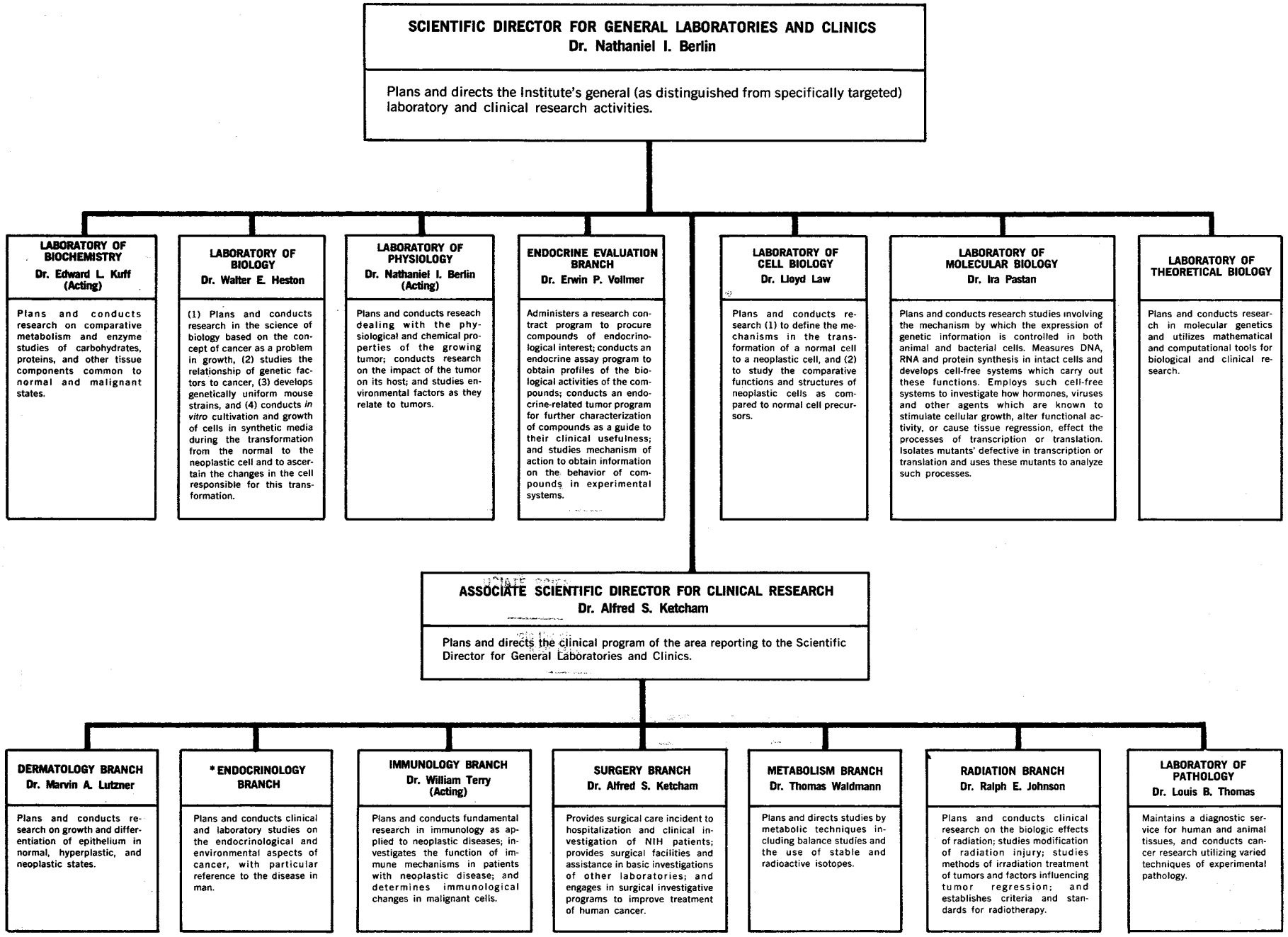
Plans, implements, and evaluates studies, at the molecular level, of the effects of chemotherapeutic agents on biological systems or constituents of such systems. The primary objective will be to contribute to the understanding of the detailed mechanism of action of clinically useful, or potentially useful, antitumor agents. In so doing, the laboratory will continue to maintain close liaison with other NCI groups interested in clinical pharmacology.

BALTIMORE LABORATORY OF PHARMACOLOGY
Dr. Carl Levy (Acting)

Studies effectiveness of varying schedules and dosages of anti-cancer agents, in an effort to design improved schedules of drug administration and more effective chemotherapeutic agents; and conducts research on analytic methods; drug metabolisms, physiological distribution and disposition, and the mechanisms of action of anti-cancer drugs.

BALTIMORE CLINICAL BRANCH
Dr. Michael D. Walker

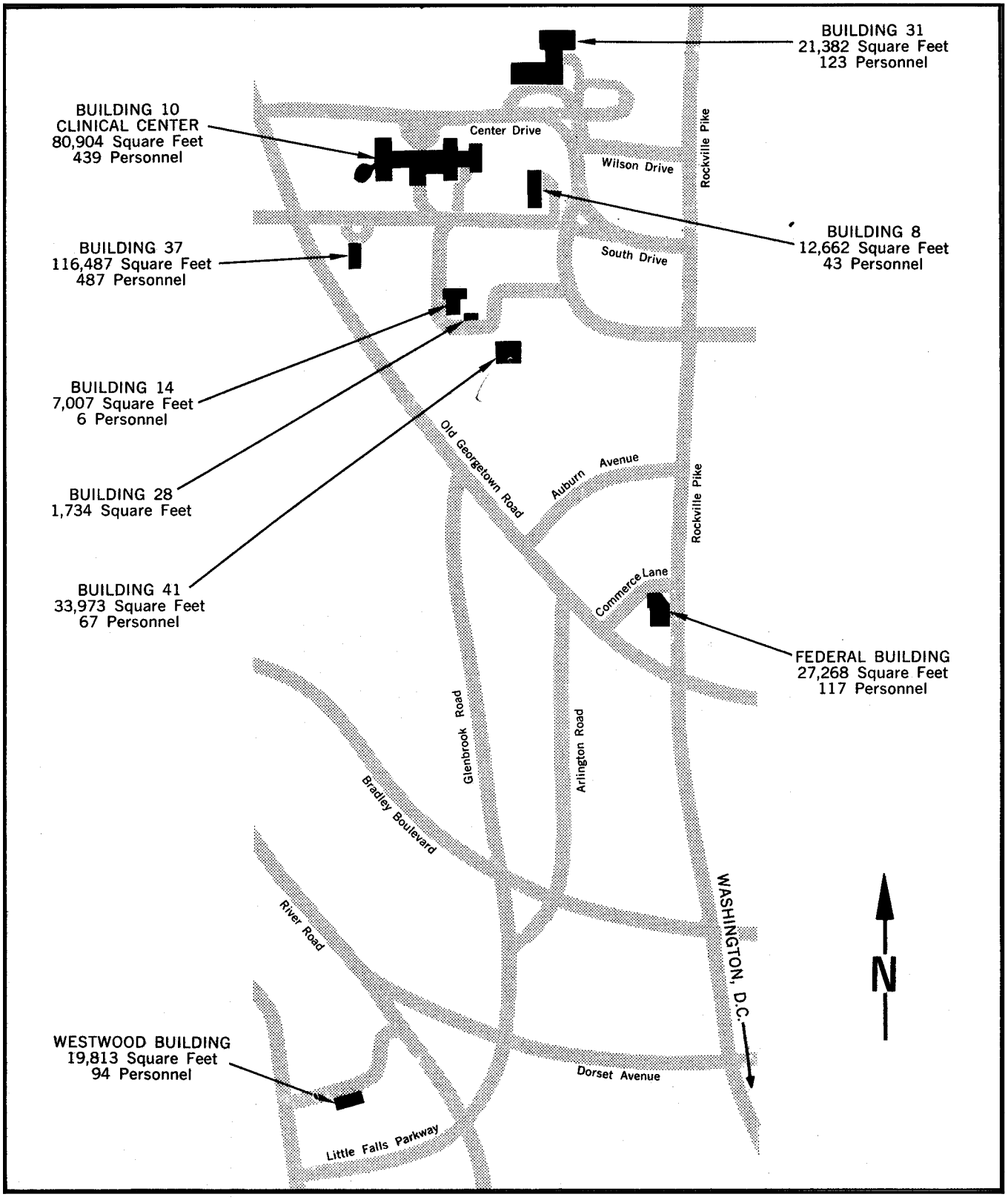
At assigned facilities of the Baltimore PHS Hospital, conducts a program of clinically oriented research in support of the cancer chemotherapy program.



*Responsibility of NICHD — complete transfer pending

BUILDING LOCATION AND SQUARE FOOTAGE OCCUPIED BY NUMBER OF NCI STAFF IN BETHESDA, MARYLAND AREA

TOTAL
Approximately 321,230 Square Feet
1,426 Personnel



DATA AS SHOWN DO NOT INCLUDE 50 POSITIONS LOCATED OUTSIDE THE BETHESDA AREA.

CANCER STATISTICS

Incidence of Cancer

More than 52 million Americans now living will eventually have cancer. Over the years, cancer will strike in 2 out of 3 American families. There will be an estimated 650,000 new cancer diagnoses in 1972.

National Cancer Death Rate

Cancer mortality is second only to heart disease in the number of lives it claims. Where heart disease seems to be leveling off, cancer is steadily increasing.

Deaths are measured in terms of an annual mortality rate per 100,000 population (See table on following page). These mortality rates were adjusted using the age distribution of the total U.S. population for 1950 as a base.

Today cancer mortality is higher in the nonwhite population than in the white, and it is higher among men than women. Cancer mortality has decreased among women over the past 20 years, while among men it has steadily increased. The principal reason for increasing cancer mortality among men is lung cancer. If lung cancer is excluded, the data indicate a small decrease in the cancer mortality rate for men.

Lung Cancer and Smoking

There is really no room to doubt that smoking cigarettes increases lung cancer. There are several agents in the tar of cigarette smoke which are carcinogenic. Some of them are created in the burning process and others, already present in the tobacco, are simply carried over as particulate matter in the smoke.

However, a number of environmental experiences are associated with increased risk of lung cancer. Tobacco represents one segment of a broad approach, and there is concern about virtually all areas that have some degree of suspicion in terms of contributing to the problem.

Survival Rate

In the 1930's, fewer than one-in-five were alive 5 years after diagnosis. Today the ratio is near two-in-five. Many experts believe present knowledge could save more than one-in-two in the optimum situation of early diagnosis followed by prompt, effective treatment.

Effective Treatment of Cancer

At the present time, surgery and radiation are the methods of treatment that cure most localized cancers. These do not always effect a cure, but often help to relieve the suffering of the patient.

Another promising method of cancer treatment is chemotherapy, or treatment with drugs. Over a 20 year period, progress in such treatment of leukemia has resulted in remission for prolonged periods of time. Drug treatment of choriocarcinoma has resulted in complete cure in the great majority of cases over the last 10 years.

New drugs, new methods of using old drugs and improved auxiliary therapy probably offer the best hope of effective treatment of cancers that have spread beyond their original sites.

At the present time there are 1,500,000 Americans who have had cancer, but are now well. The number of persons who are well 5 years after diagnosis has increased about 20 percent since the 1940's. During the past 10 years the 3-year survival rate for acute lymphocytic leukemia has increased from 2 percent to 15 percent, and the 5-year survival rate for Hodgkin's disease has risen from 44 percent to 61 percent.

Third National Cancer Survey

The National Cancer Institute is in the process of collecting data on cancer incidence and cancer prevalence through the Third National Cancer Survey. Cancer is not a reportable disease, and it has been twenty years since a nation-wide survey of the extent and impact of cancer in the United States has been undertaken. Two earlier cancer-incidence surveys, in 1937 and in 1947-48, covered ten large metropolitan areas. A survey in Iowa in 1950 helped provide knowledge of cancer incidence in rural areas. In the current survey information is being collected in seven metropolitan areas, in two states and in Puerto Rico. Data will be available on the incidence and prevalence of the various forms of cancer and on variation by geographic area, race, sex, age and socioeconomic status.

Information is being gathered from all hospitals,

clinics, laboratories, vital statistics offices, and selected individual physicians in each survey area concerning patients with cancer during the years 1969, 1970, and 1971. A preliminary report on cancer incidence rates for the calendar year 1969 was issued in 1971. The National Cancer Institute will continue to tabulate, analyze and report on the assembled data.

United States Mortality Rates *

(DEATHS PER 100,000)

	WHITE					NONWHITE				
	1945	1950	1955	1960	1965	1945	1950	1955	1960	1965
Men	142	148	157	159	164	104	138	160	174	192
Women	139	132	128	121	119	127	141	140	136	137

*These rates are 3-year averages around the base years 1945, 1950, 1955, 1960 and 1965; data have not been published for the next 3-year average centered around 1970.

MORTALITY FOR THE FIVE LEADING CANCER SITES BY AGE GROUP AND SEX — 1968

TOTAL	
MALE	**FEMALE**
Lung	**Breast**
48,831	**28,816**
Colon & Rectum	**Colon & Rectum**
21,531	**22,904**
Prostate	**Uterus**
16,848	**12,759**
Stomach	**Ovary**
10,330	**9,489**
Pancreas	**Lung**
9,917	**10,536**

UNDER 15	
MALE	FEMALE
Leukemia	Leukemia
1,002	787
Brain	Brain
505	424
Lympho-sarcoma	Kidney
235	100
Bone	Bone
86	84
Kidney	Lympho-sarcoma
93	98

15 - 34	
MALE	FEMALE
Luekemia	Breast
698	478
Hodgkin's Disease	Leukemia
503	471
Brain	Uterus
375	375
Testis	Hodgkin's Disease
350	313
Lympho-sarcoma	Brain
849	277

35 - 54	
MALE	FEMALE
Lung	Breast
8,899	8,776
Colon & Rectum	Uterus
2,451	3,398
Pancreas	Colon & Rectum
1,420	2,728
Brain	Lung
1,298	2,758
Stomach	Ovary
1,202	2,581

55 - 74	
MALE	FEMALE
Lung	Breast
31,805	13,735
Colon & Rectum	Colon & Rectum
11,733	11,119
Prostate	Uterus
7,491	6,254
Pancreas	Ovary
5,778	5,008
Stomach	Lung
5,537	5,493

75 & OVER	
MALE	FEMALE
Prostate	Colon & Rectum
9,006	7,162
Lung	Breast
7,930	5,817
Colon & Rectum	Stomach
7,162	2,814
Stomach	Uterus
3,543	2,727
Pancreas	Pancreas
2,668	2,670

Source: National Center for Health Statistics, 1968

RELATION OF CANCER TO LEADING CAUSES OF DEATH IN THE UNITED STATES — 1968

RANK	CAUSE OF DEATH	NUMBER OF DEATHS	DEATH RATE PER 100,000 POPULATION	PERCENT OF TOTAL DEATHS
	All Causes	**1,930,082**	**965.8**	**100.00**
1	Diseases of heart	744,658	372.6	38.6
2	Cancer	318,547	159.4	16.5
3	Cerebrovascular diseases	211,390	105.8	11.0
4	Accidents	114,864	57.5	6.0
	Motor vehicle accidents	(54,862)	(27.5)	(2.9)
	All other accidents	(60,002)	(30.0)	(3.1)
5	Influenza and pneumonia	73,492	36.8	3.8
6	Certain causes of mortality in early infancy	43,840	21.9	2.3
7	Diabetes mellitus	38,352	19.2	2.0
8	Arteriosclerosis	33,568	16.8	1.7
9	Bronchitis, emphysema*, and asthma	33,078	16.6	1.7
10	Cirrhosis of liver	29,183	14.6	1.5
11	Suicide	21,372	10.7	1.1
12	Congenital anomalies	16,793	8.4	0.9
13	Homicide	14,686	7.3	0.7
14	Peptic ulcer	9,460	4.7	0.5
15	Infections of kidney	9,395	4.7	0.5
16	Nephritis and nephrosis	9,311	4.7	0.5
	All other causes	208,093	104.1	10.7
	*Emphysema without mention of bronchitis	24,185	12.1	1.3

Source:
National Center for Health Statistics, 1968
Eighth Revision, *International Classification of Diseases*, Adapted, 1965

ESTIMATED CANCER DEATHS AND NEW CASES BY SEX AND SITE – 1972*

SITE	ESTIMATED DEATHS			ESTIMATED NEW CASES		
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
All Sites	345,000	187,000	158,000	650,000	339,800	310,200
Buccal Cavity & Pharynx **(Oral)**	**7,500**	**5,450**	**2,050**	**15,100**	**10,300**	**4,800**
Lip	175	150	25	1,800	1,600	200
Tongue	1,750	1,300	450	2,800	2,000	800
Salivary Gland	650	400	250			
Floor of Mouth	525	400	125	6,000	3,600	2,400
Other & Unspecified Mouth	1,100	700	400			
Pharynx	3,300	2,500	800	4,500	3,100	1,400
Digestive Organs	96,500	51,400	45,100	129,800	67,300	62,500
Esophagus	6,300	4,700	1,600	6,700	5,100	1,600
Stomach	15,100	9,000	6,100	16,800	9,900	6,900
Small Intestine	750	400	350	1,200	700	500
Large Intestine **(Colon-**	**36,500**	**16,900**	**19,600**	**55,000**	**25,000**	**30,000**
Rectum)	**10,400**	**5,800**	**4,600**	**21,000**	**11,000**	**10,000**
Liver (specified as primary)	7,000	3,100	3,900	7,100	3,200	3,900
Pancreas	18,800	10,700	8,100	19,100	11,000	8,100
Other & Unspecified Digestive	1,650	800	850	2,900	1,400	1,500
Respiratory System	73,050	59,200	13,850	85,300	69,400	15,900
Larynx	3,050	2,700	350	6,800	6,000	800
Lung	**68,800**	**55,800**	**13,000**	**76,000**	**62,000**	**14,000**
Other & Unspecified Respiratory	1,200	700	500	2,500	1,400	1,100
Bone, Tissue and Skin	8,750	5,100	3,650	125,800	82,000	43,800
Bone	1,900	1,100	800	2,000	1,100	900
Connective Tissue	1,650	900	750	5,800	2,900	2,900
Skin	**5,200**	**3,100**	**2,100**	**118,000**	**78,000**	**40,000**
Breast	**32,250**	**250**	**32,000**	**70,600**	**600**	**70,000**
Genital Organs	42,200	18,600	23,600	97,400	38,500	58,900
Cervix Uteri } **(Uterus)**	**9,000**		**9,000**			
Corpus Uteri }	**3,300**		**3,300**	**43,000**		**43,000**
Ovary	10,400		10,400	14,000		14,000
Prostate	17,600	17,600		36,000	36,000	
Testis	700	700		1,700	1,700	
Other & Unspecified Genital	1,200	300	900	2,700	800	1,900
Urinary Organs	15,900	10,400	5,500	32,100	22,000	10,100
Bladder	7,100	4,200	2,900	20,600	15,000	5,600
Kidney & Other Urinary	8,800	6,200	2,600	11,500	7,000	4,500
Eye	350	150	200	600	300	300
Brain & Central Nervous System	8,000	4,700	3,300	11,900	6,500	5,400
Endocrine Glands	1,650	650	1,000	3,300	1,000	2,300
Thyroid	1,150	350	800	2,600	600	2,000
Other Endocrine	500	300	200	700	400	300
Leukemia	15,300	8,600	6,700	19,000	11,000	8,000
Lymphomas	19,800	10,800	9,000	25,100	13,900	11,200
Lymphosarcoma & Reticulosarcoma	7,500	4,000	3,500	10,500	6,000	4,500
Hodgkin's Disease	3,700	2,200	1,500	4,900	2,700	2,200
Multiple Myeloma	4,400	2,300	2,100			
Other Lymphomas	4,200	2,300	1,900	9,700	5,200	4,500
All Other & Unspecified Sites	23,750	11,700	12,050	34,000	17,000	17,000

Note: The estimates of new cancer cases are offered as a rough guide and should not be regarded as definitive. Especially note that year to year changes may only represent improvements in the basic data. Six major sites in boldface.

*Listed according to the 1965 Revision of the *International Classification of Diseases Adapted for Use in the United States.*

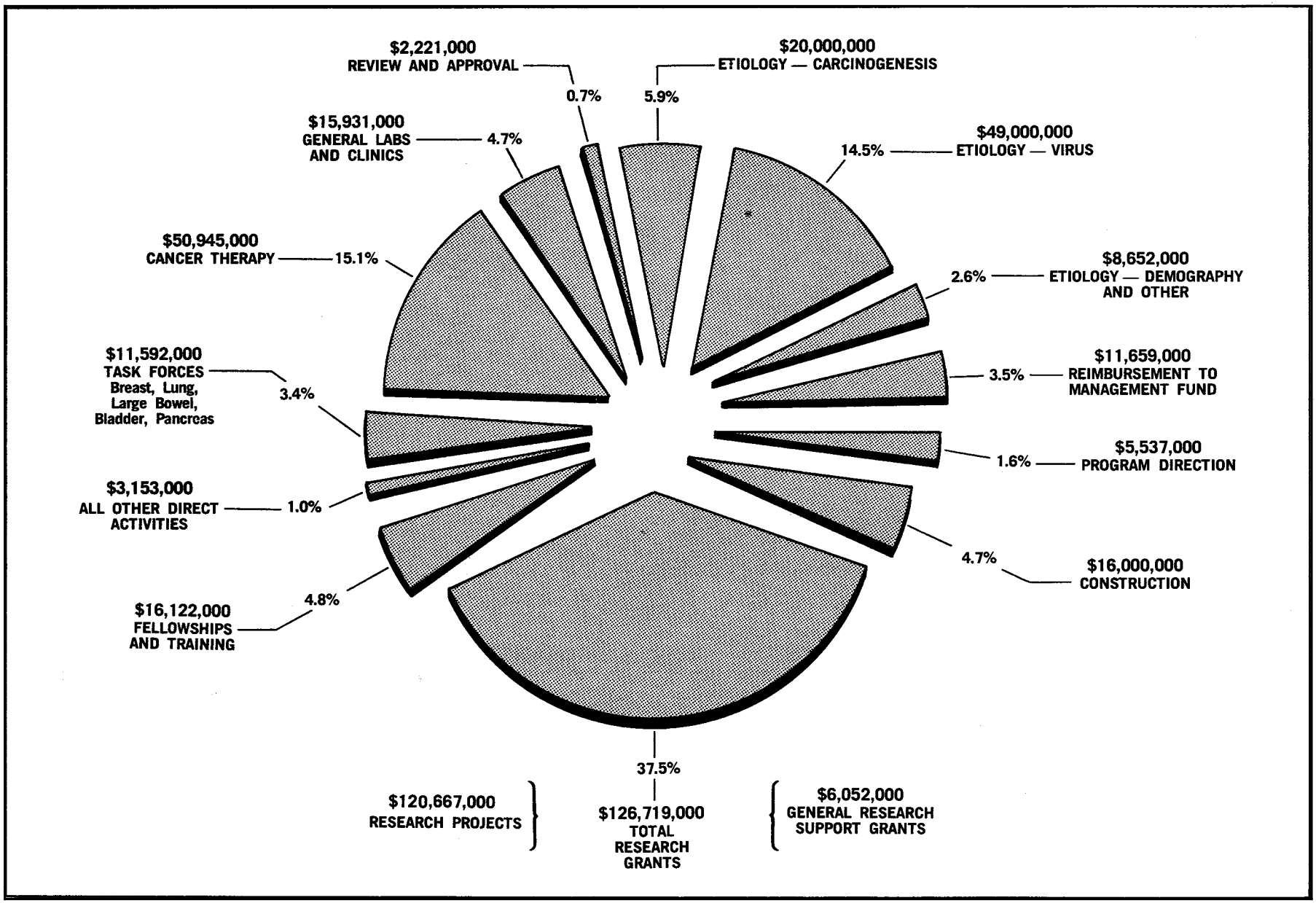
CANCER AROUND THE WORLD

AGE-ADJUSTED DEATH RATES PER 100,000 POPULATION FOR SELECTED CANCER SITES FOR 24 COUNTRIES — 1964-1965

COUNTRY	ALL SITES		ORAL		COLON & RECTUM		LUNG		BREAST	UTERUS	SKIN		STOMACH		PROSTATE	LEUKEMIA	
	Male	Female	Male	Female	Male	Female	Male	Female	Female	Female	Male	Female	Male	Female	Male	Male	Female
United States*	146.5(16)	106.3(18)	4.57(6)	1.25(7)	18.73(10)	16.06(10)	36.96(9)	5.86(8)	21.55(9)	11.84(16)	2.52(5)	1.49(8)	10.43(24)	5.13(24)	13.80(13)	7.33(3)	4.78(7)
Australia	140.3(18)	96.2(22)	3.17(11)	1.17(8)	18.20(13)	16.33(9)	34.58(13)	4.19(17)	19.08(14)	8.40(21)	4.30(2)	2.35(1)	15.48(23)	7.95(23)	14.80(7)	6.67(10)	4.32(16)
Austria	192.2(2)	130.9(3)	2.78(15)	0.85(16)	19.25(9)	14.93(13)	49.39(5)	5.70(9)	17.06(17)	17.75(2)	1.96(8)	1.57(9)	42.11(3)	23.62(3)	13.79(10)	5.50(21)	4.31(17)
Belgium	175.8(5)	119.8(7)	2.73(16)	0.67(22)	21.43(4)	18.00(6)	46.72(6)	4.41(15)	21.13(12)	11.95(10)	1.41(21)	0.95(22)	27.13(9)	15.27(9)	15.05(6)	5.80(18)	4.41(14)
Canada	141.0(17)	110.3(13)	4.06(8)	1.08(12)	20.22(8)	19.64(3)	30.83(15)	4.73(12)	23.49(5)	10.69(12)	1.87(11)	1.18(18)	17.56(21)	8.13(22)	13.17(12)	6.84(9)	4.75(8)
Chile	147.3(14)	138.8(1)	2.38(18)	0.70(21)	6.17(24)	6.91(23)	13.83(22)	4.69(13)	8.77(23)	19.93(1)	0.90(23)	0.88(23)	58.43(2)	39.02(1)	7.99(23)	3.98(23)	2.69(24)
Denmark	165.8(10)	138.8(2)	1.91(20)	0.98(14)	25.33(1)	20.46(2)	35.84(11)	6.57(5)	23.73(3)	17.61(3)	1.84(13)	1.99(4)	21.76(18)	13.39(15)	15.61(5)	8.58(1)	5.41(2)
Eng. & Wales	180.3(4)	114.7(9)	3.15(12)	1.47(3)	21.10(6)	17.33(7)	67.72(2)	9.70(2)	24.42(2)	10.20(17)	1.45(19)	1.29(15)	23.42(15)	11.46(19)	12.13(17)	5.51(20)	3.96(19)
Finland	186.8(3)	106.6(16)	2.65(17)	1.12(10)	10.83(21)	10.06(21)	60.72(3)	3.77(19)	13.50(21)	10.40(14)	1.96(9)	0.99(21)	39.66(4)	20.38(5)	11.11(20)	7.06(5)	5.16(5)
France	169.4(9)	101.0(19)	9.17(1)	0.78(18)	18.35(12)	13.89(15)	25.55(18)	3.57(20)	16.26(19)	11.30(11)	1.69(15)	1.33(14)	21.44(19)	10.63(20)	14.37(8)	6.37(12)	4.49(12)
Germany (F.R.)	172.2(6)	127.4(4)	1.76(22)	0.54(24)	18.12(14)	14.03(14)	40.38(7)	5.15(10)	17.53(16)	12.69(6)	1.88(10)	1.40(11)	37.05(5)	20.69(4)	12.70(14)	6.06(15)	4.37(15)
Ireland	139.4(20)	111.9(11)	4.38(7)	2.07(2)	20.13(7)	16.74(8)	28.88(16)	7.01(3)	21.51(11)	7.75(23)	2.72(4)	1.71(5)	23.88(14)	15.94(8)	11.40(18)	6.20(13)	4.12(18)
Israel	117.5(23)	115.6(8)	1.53(23)	0.81(17)	10.53(22)	10.06(22)	20.83(19)	6.75(4)	20.98(13)	6.18(24)	1.26(22)	1.68(6)	18.20(20)	12.58(17)	8.45(22)	7.37(4)	5.67(1)
Italy	148.9(12)	100.6(20)	5.44(4)	0.88(15)	13.40(19)	10.77(20)	27.57(17)	4.34(16)	15.73(20)	13.00(5)	1.68(16)	1.15(20)	33.61(6)	17.81(7)	9.44(21)	6.19(14)	4.54(10)
Japan	140.2(19)	94.7(23)	1.37(24)	0.66(23)	8.06(23)	6.62(24)	12.64(23)	4.46(14)	3.80(24)	13.47(4)	0.83(24)	0.57(24)	68.57(1)	35.31(2)	1.85(24)	3.72(24)	2.87(23)
Netherlands	171.8(7)	119.8(6)	1.85(21)	0.78(20)	17.65(15)	15.98(11)	51.12(4)	3.39(21)	25.59(1)	10.13(18)	1.52(17)	1.17(19)	28.26(8)	15.18(10)	14.18(9)	6.98(7)	4.98(6)
New Zealand	145.8(15)	110.8(12)	2.90(14)	1.11(11)	21.69(3)	18.98(4)	35.72(12)	4.92(11)	23.28(6)	10.29(15)	2.97(3)	2.28(2)	16.54(22)	8.33(21)	13.21(11)	6.67(11)	5.35(3)
No. Ireland	148.8(13)	109.7(15)	3.91(9)	2.36(1)	21.17(5)	18.03(5)	39.49(8)	6.30(7)	22.44(8)	7.96(22)	1.50(18)	1.36(12)	21.87(17)	13.59(14)	12.47(16)	5.98(17)	3.70(22)
Norway	127.8(21)	98.3(21)	3.03(13)	1.15(9)	13.84(18)	11.46(18)	13.89(21)	2.57(23)	16.89(18)	9.13(20)	1.99(7)	1.51(10)	26.01(11)	14.63(12)	16.47(3)	6.99(6)	4.57(9)
Portugal	110.0(24)	83.0(24)	4.57(5)	1.07(13)	11.48(20)	11.35(19)	10.09(24)	2.19(24)	12.57(22)	12.37(9)	1.45(20)	1.19(17)	32.95(7)	19.65(6)	11.15(19)	4.94(22)	3.83(21)
Scotland	201.4(1)	125.8(5)	3.59(10)	1.44(5)	25.12(2)	20.73(1)	75.55(1)	11.44(1)	23.59(4)	10.66(13)	1.82(14)	1.34(13)	25.47(12)	14.50(13)	12.67(15)	5.65(19)	3.83(20)
Sweden	127.5(22)	106.3(17)	2.27(19)	1.47(4)	16.05(16)	13.47(16)	16.44(20)	3.78(18)	18.50(15)	9.95(19)	1.85(12)	1.28(16)	22.04(16)	12.03(18)	17.80(2)	7.63(2)	5.25(4)
Switzerland	163.9(11)	109.8(14)	6.95(2)	0.78(19)	18.53(11)	12.14(17)	33.39(14)	3.28(22)	21.63(10)	12.46(8)	2.33(6)	1.62(7)	26.04(10)	14.90(11)	15.77(4)	6.01(16)	4.44(13)
Un. So. Africa	169.9(8)	112.6(10)	5.92(3)	1.23(6)	14.99(17)	15.30(12)	36.71(10)	6.52(6)	22.72(7)	12.51(7)	4.38(1)	2.03(3)	25.27(13)	13.00(16)	18.64(1)	6.96(8)	4.54(11)

Note: Bold figures in parentheses are order of rates within site and sex group. *Weighted averages of white and non-white. Source: Segi, Mitsuo et al.: Cancer Mortality for Selected Sites, No. 5

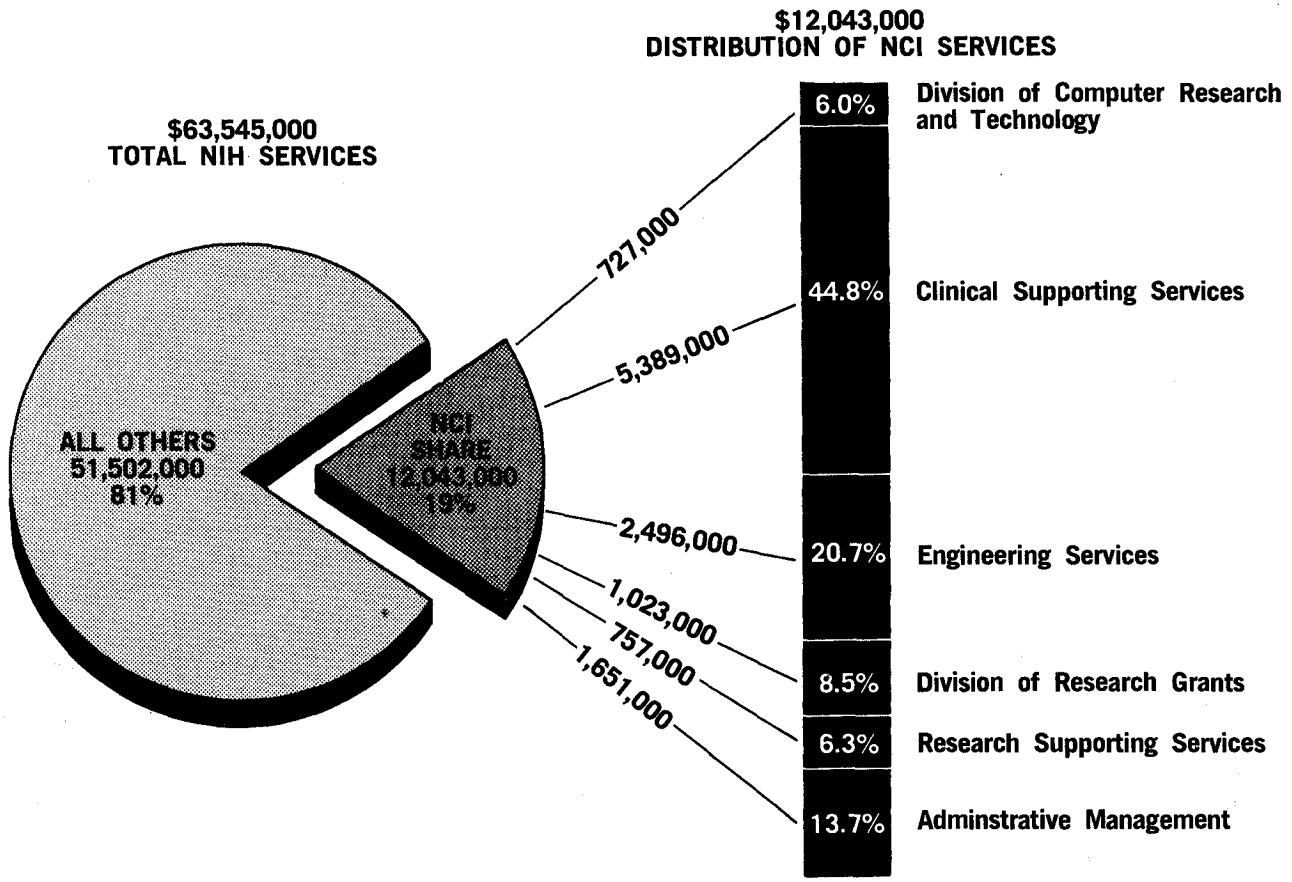
1972 APPROPRIATION BY PROGRAM — TOTAL: $337,531,000



1972 NATIONAL CANCER INSTITUTE APPROPRIATION

	AMOUNT	ACTIVITY	PERCENT OF TOTAL
GRANTS	$67,250,000	Regular Research	19.9
	49,515,000	Cancer Research Centers	14.7
	9,954,000	Special Programs	3.0
	3,548,000	Fellowships	1.0
	12,574,000	Training Grants	3.7
DIRECT OPERATIONS	23,604,000	General Laboratories and Clinics	7.0
	50,945,000	Cancer Therapy	15.1
	49,000,000	Etiology — Virus	14.5
	20,000,000	Etiology — Carcinogenesis	5.9
	8,652,000	Etiology — Demography and Other	2.6
	11,592,000	Task Forces	3.4
		Breast Cancer (6,700,000)	
		Lung Cancer (3,400,000)	
		Large Bowel (660,000)	
		Bladder (332,000)	
		Pancreas (500,000)	
	5,760,000	Other Collaborative Studies	1.8
	3,446,000	Review and Approval	1.0
	5,691,000	Program Direction	1.7
CONSTRUCTION	16,000,000	Construction	4.7
	$337,531,000	**TOTAL**	**100.0**

REIMBURSEMENT TO NIH MANAGEMENT FUND FISCAL YEAR 1972



CLINICAL SUPPORTING SERVICES

- Service Functions
- Social Work
- Professional Services
  - Consultative Services
  - Admissions and Follow-up
  - Anesthesiology
  - Diagnostic X-Ray
  - Clinical Pathology
  - Blood Bank
  - Rehabilitation Service
  - Pharmacy Service
  - Medical Records
  - TV Engineering
- Nursing Service
- Patient Nutrition Service
- Environmental Sanitation Control
- Laundry
- Radiation Safety

RESEARCH SUPPORTING SERVICES

- Laboratory Aids
  - Animal Hospital
  - Media Preparation
  - Glassware Preparation
  - Comparative Pathology
  - Germ-free Animal Production
- Biomedical Engineering and Instrumentation
- Library Services
- Medical Arts
- Environmental Services

ENGINEERING SERVICES

- Research Facilities Planning
- Plant Engineering Services
- Liaison & Inspection of Projects

DIVISION OF RESEARCH GRANTS

- Initial Scientific Review of Applications
- Assignment of Research Grant Applications Among Institutes

ADMINISTRATIVE MANAGEMENT

- Office Services
- Plant Safety
- Supply Management
- Financial Management
- Personnel Management
- Management Policy
- Management Survey and Review

DIVISION OF COMPUTER RESEARCH & TECHNOLOGY

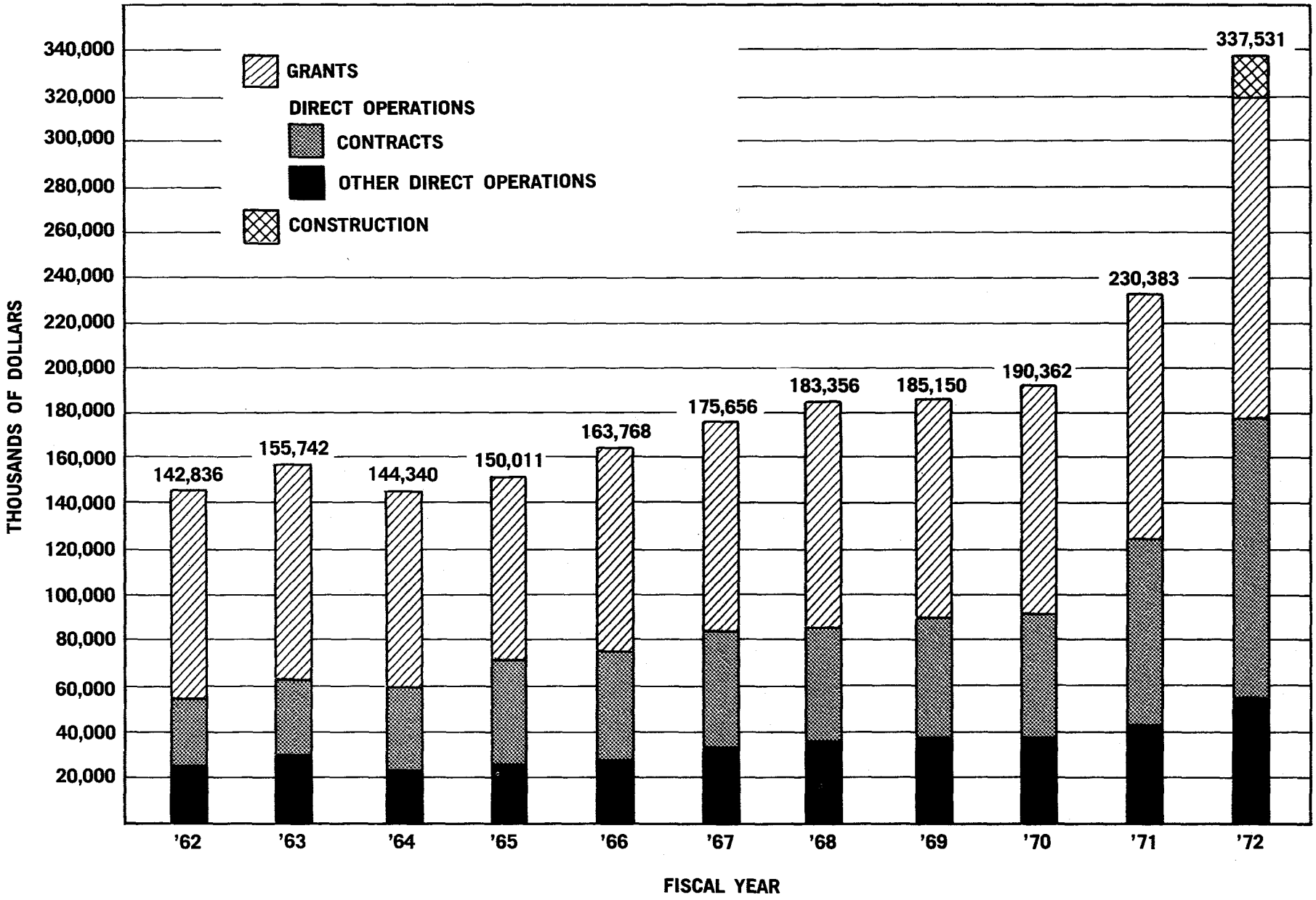
Research & Development Program in Which Concepts & Methods of Computer Science Are Applied to Biomedical Problems (Services Are Rendered to the NIH Communities on a Fee-For-Service Basis).

NATIONAL CANCER INSTITUTE 1972 BUDGET HISTORY

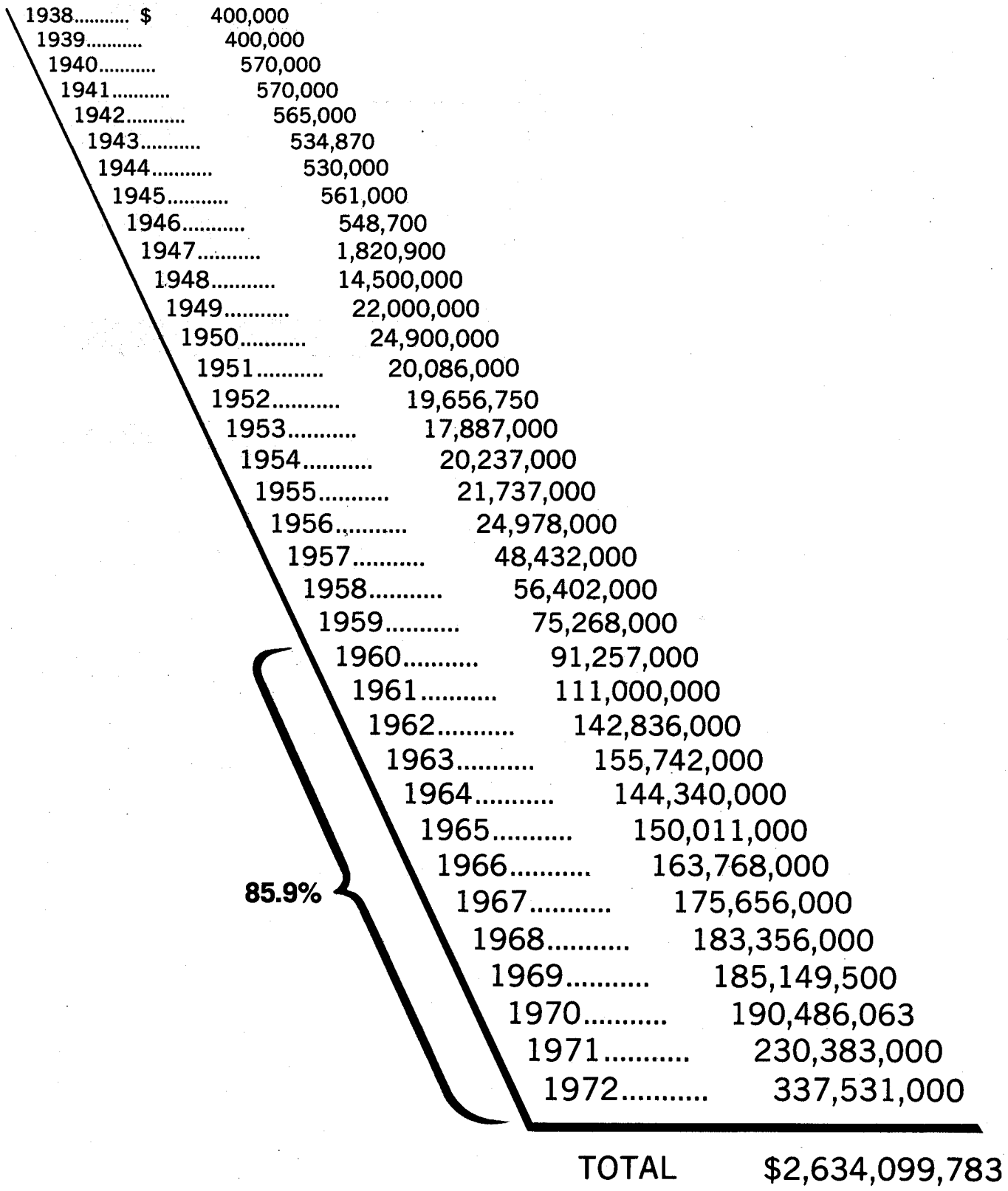
(THOUSANDS OF DOLLARS)

BUDGET ACTIVITIES	1971 ACTUAL OBLIGATIONS	1972 PRELIMINARY BUDGET ESTIMATE	1972 PRESIDENT'S BUDGET		1972 APPROPRIATIONS	1972 APPORTIONMENTS
			BASE	SUPPLEMENTAL		
GRANTS						
Research						
Regular Program	$ 54,166	$ 78,540	$ 69,123	$ 10,389	$ 79,512	$ 66,250
General Research Support	5,901	5,500	5,275		6,052	6,052
Scientific Evaluation	401	171	201		201	401
Cancer Research Centers	33,196	30,300	20,953	18,000	38,953	49,515
Leukemia Research Projects	1,651	1,901	1,851		1,851	1,651
Task Forces						1,850
Total, Research	95,315	116,412	97,403	28,389	126,569	125,719
Fellowships	3,798	4,548	3,348	200	3,548	3,548
Training	10,774	12,874	8,358	1,800	12,574	12,874
Total, Grants	109,887	133,834	109,109	30,389	142,691	142,141
DIRECT OPERATIONS						
Intramural Research						
General Labs and Clinics	13,063	13,221	13,856	1,800	15,656	15,597
Reimbursement to NIH	8,906	7,568	7,673		7,673	7,990
Total	21,969	20,789	21,529	1,800	23,329	23,587
Collaborative Studies						
Cancer Therapy	31,755	31,666	31,881	19,000	50,881	50,961
Etiology	54,911	65,654	57,581	20,000	77,581	77,667
Task Forces	4,051	5,550	4,079	10,311	14,390	11,309
Radiation Research & Development						1,000
Supporting Services	1,460	1,999	2,153	500	2,653	2,653
Other Collaborative Studies	3,000	500	500		500	500
Reimbursement to NIH	964	2,079	2,107	500	2,607	2,607
Total	96,141	107,448	98,301	50,311	148,612	146,697
Review and Approval						
Extramural	1,925	2,012	2,411	200	2,611	2,217
Reimbursement to NIH	993	1,199	1,225		1,225	1,259
Total	2,918	3,211	3,636	200	3,836	3,476
Program Direction						
Office of the Director	1,884	1,209	1,609	1,300	2,909	5,441
Reimbursement to NIH	54	154	154		154	187
Total	1,938	1,363	1,763	1,300	3,063	5,628
Total, Direct Operations	122,966	132,811	125,229	53,611	178,840	179,388
CONSTRUCTION						
Construction				16,000	16,000	16,000
Subtotal — NCI	232,853	266,645	234,338	100,000	337,531	337,529
Unobligated Balance	279					
Total — NCI	$233,132	$266,645	$234,338	$100,000	$337,531	$337,529

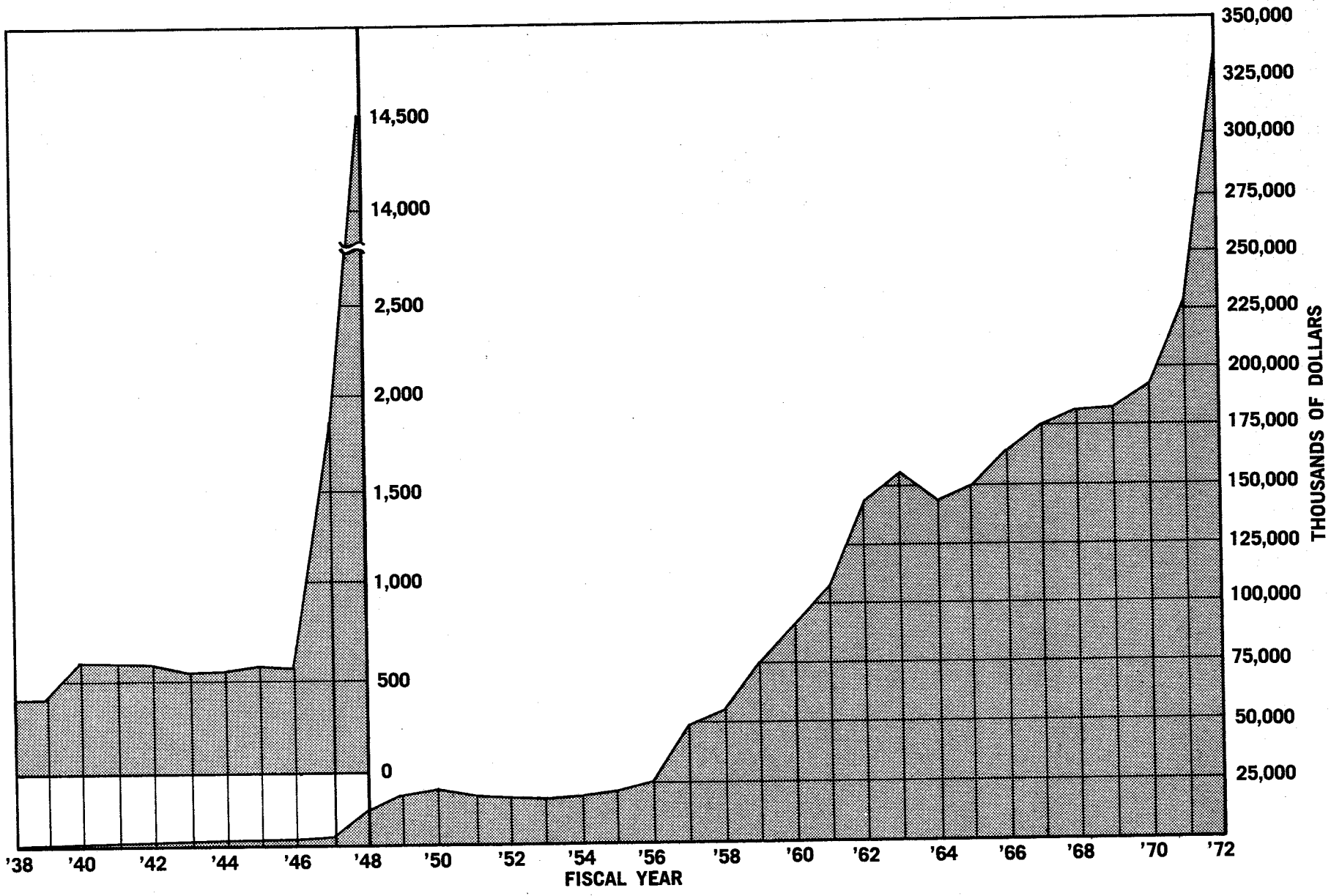
APPROPRIATIONS 1962-1972



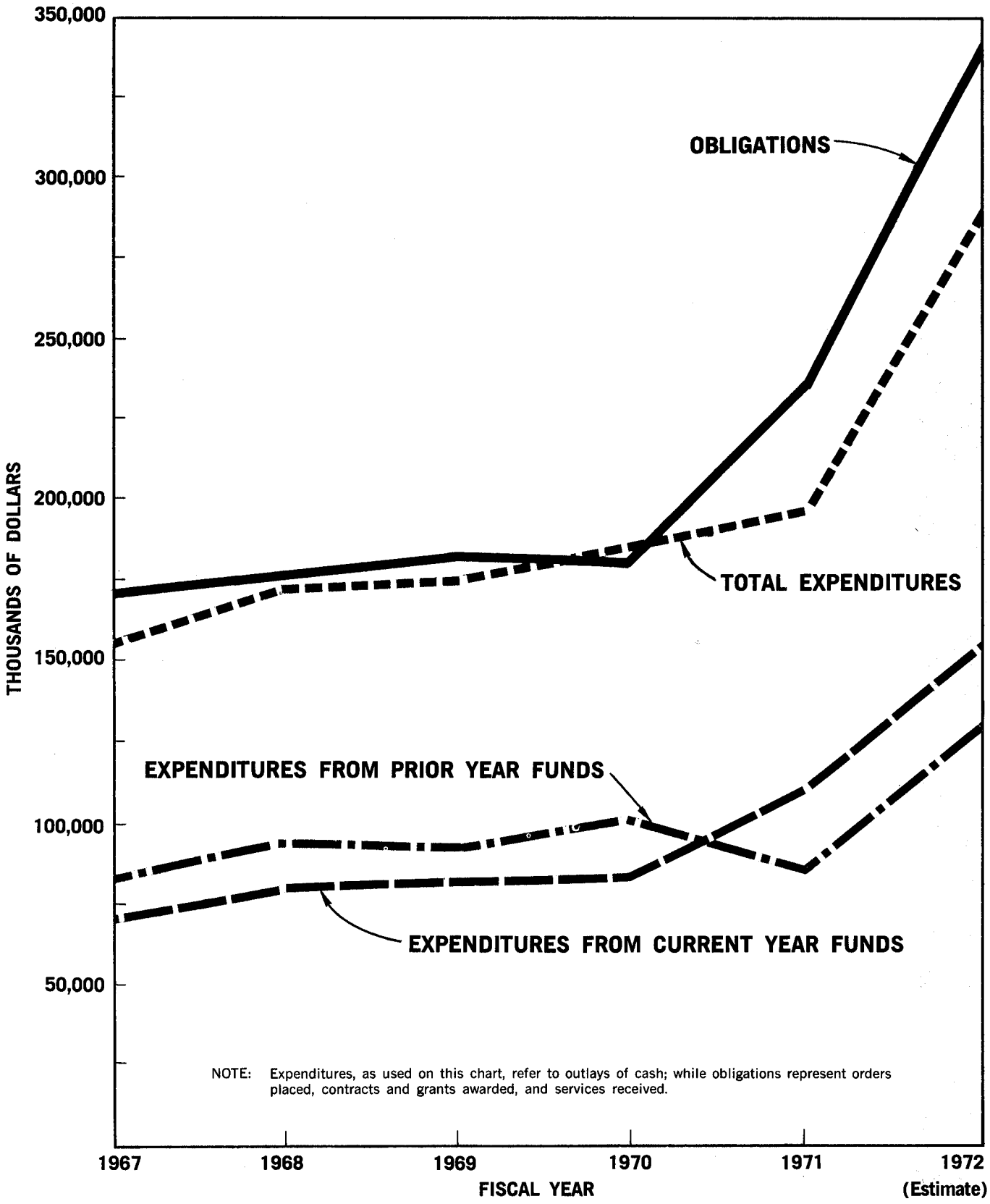
ANNUAL APPROPRIATIONS 1938-1972



NATIONAL CANCER INSTITUTE HISTORY OF APPROPRIATED FUNDS

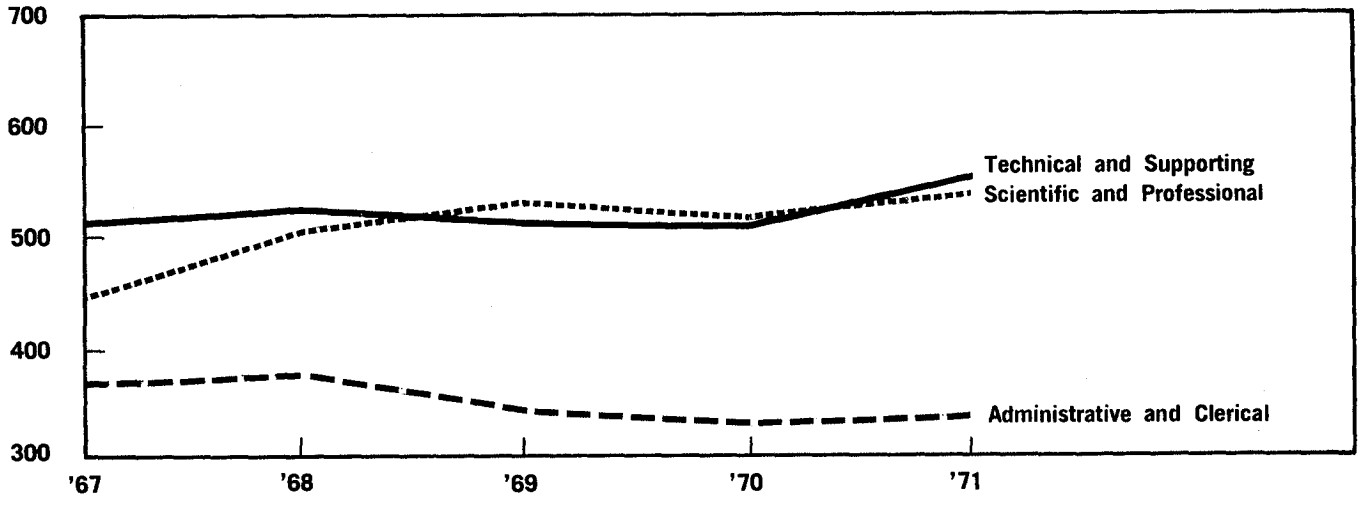


NATIONAL CANCER INSTITUTE OBLIGATIONS AND EXPENDITURES



DISTRIBUTION OF PERSONNEL BY FUNCTION

Percent of Actual Employment					
Fiscal Year	1967	1968	1969	1970	1971
Scientific and Professional	33.9%	37.5%	37.8%	38.3%	37.5%
Administrative and Clerical	27.5%	25.5%	24.4%	24.0%	23.9%
Technical and Supporting	38.6%	37.0%	37.8%	37.7%	38.6%
Total Actual Employment	1329	1453	1411	1355	1426



RESEARCH POSITIONS AT THE NATIONAL CANCER INSTITUTE[1]

The National Cancer Institute recognizes that one of the most valuable resources to be drawn upon in the fight against cancer is the wealth of scientific talent available in the U.S. and around the world. In an effort to attract and maintain the highest quality scientific staff two personnel systems are used: the U.S. Civil Service System and the PHS Commissioned Corps. In addition, the Staff Fellowship Program and the NIH Visiting Program have been designed to meet special needs. Various fellowships and special programs are also available for those who qualify.

POSITION	ELIGIBILITY	ANNUAL SALARY	MECHANISM OF ENTRY
I. CIVIL SERVICE			
A. Civil Service (tenured)	Appropriate advanced education, experience and knowledge needed by NCI to conduct its programs	Minimum starting: Ph.D. — $18,737 Physicians — $23,737 Maximum: $36,000	Civil Service Commission. Contact Scientific Director or Laboratory Chief in area of interest.
II. USPHS COMMISSIONED CORPS			
Associate Training Program including CORD residency deferment program (limited tenure, maximum 3 years)			
A. Clinical Associate	Graduates of Medical Schools including Internship	Pay and allowances of Senior Assistant Surgeon or Surgeon of PHS Commissioned Corps	[2]Apply to Clinical and Professional Education Section, Clinical Center, National Institutes of Health
B. Research Associate	Graduates of Medical Schools including Internship	Pay and allowances of Senior Assistant Surgeon of PHS Commissioned Corps.	[2]Apply to Clinical and Professional Education Section, Clinical Center, National Institutes of Health
C. Staff Associate	Graduates of medical and dental schools, or other doctoral qualifications	Pay and allowances of Senior Assistant Surgeon of PHS Commissioned Corps.	[2]Apply to Clinical and Professional Education Section, Clinical Center, National Institutes of Health
D. Senior COSTEP Program (Medical)	Senior Medical Students	Pay and Allowances of Junior Asst. Health Service Officer plus payment of tuition, fees and other necessary expenses. Candidates incur 2 year active duty obligation with PHS Commissioned Corps.	[2]Apply to Clinical and Professional Education Section, Clinical Center, National Institutes of Health
III. VISITING PROGRAM (limited tenure)[3]			
A. Visiting Fellow (maximum 3 years)	1-3 years postdoctoral education	$7,000-8,000 plus $500 per dependent	Contact Scientific Director or Laboratory Chief in area of interest.
B. Visiting Associates (1 year with renewals to end of project)	3+ years postgraduate education with appropriate knowledge needed by NCI	$11,000-15,900	Contact Scientific Director or Laboratory Chief in area of interest.

POSITION	ELIGIBILITY	ANNUAL SALARY	MECHANISM OF ENTRY
C. Visiting Scientist (duration of project)	6+ years postdoctoral education with appropriate unusual experience and knowledge needed	$15,900-36,000	Contact Scientific Director or Laboratory Chief in area of interest.

IV. STAFF FELLOWSHIPS

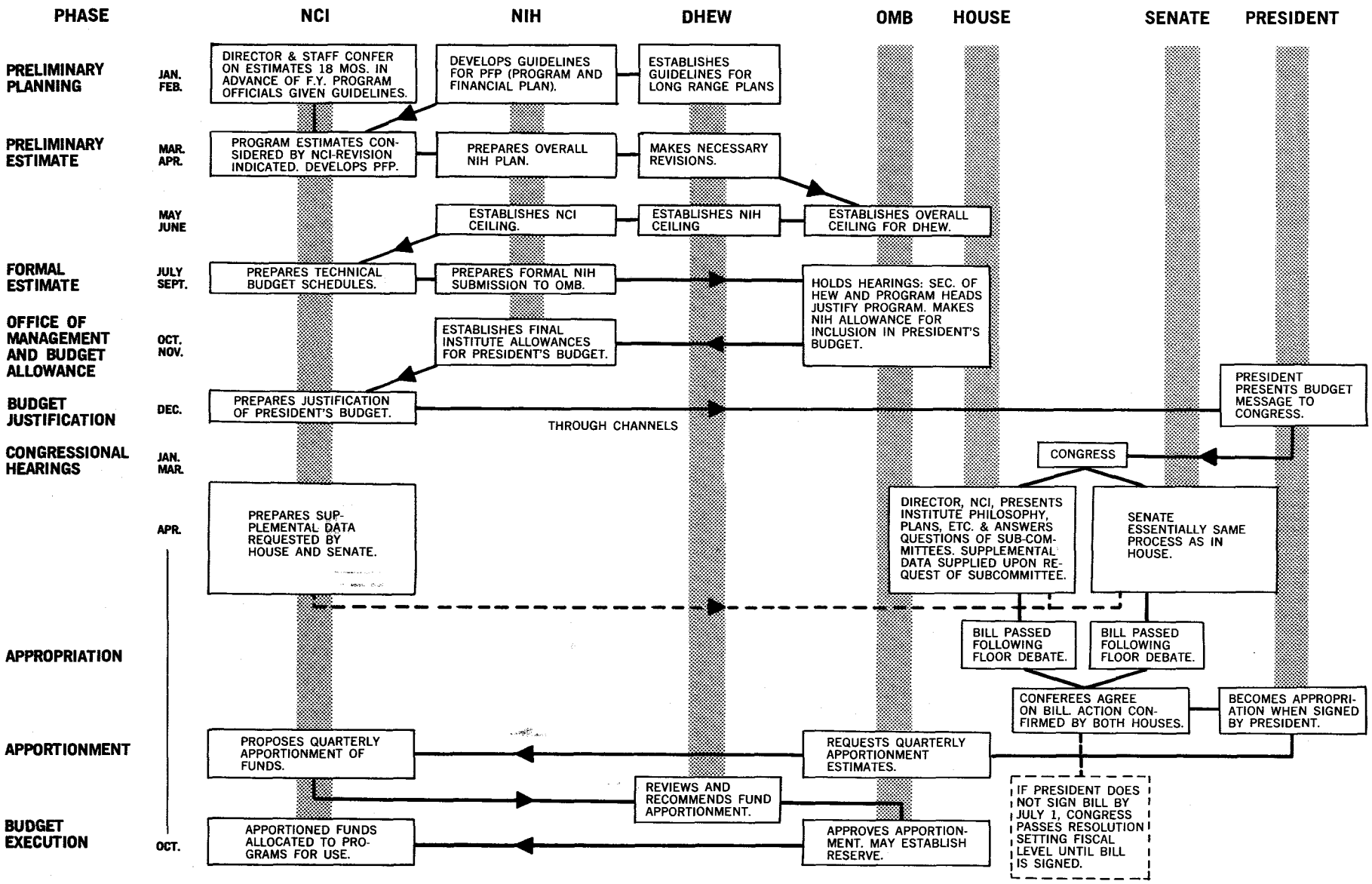
A. Staff Fellowships (maximum 6 years)	Physician or other doctoral degree equivalent awarded within last 5 years, U.S. citizen or non-citizen eligible for naturalization within 4 years.	Staff Fellows Physicians $16,500-19,500 Other Doctorates $12,500-18,000 Senior Staff Fellows Physicians $18,500-25,500 Other Doctorates $16,500-20,500	Contact Scientific Director or Laboratory Chief in area of interest.

V. FELLOWSHIPS AND SPECIAL PROGRAMS

A. PHS International Postdoctoral Research Fellows (maximum 24 months)	Nonimmigrant aliens only, doctoral degree in health field, proficiency in English, job commitment in native country upon completion of fellowship.	$6,000-7,000 plus $500 per dependent	Contact the Fogarty International Center
B. NIH Postdoctoral Research Fellowships (maximum 3 years)	U.S. citizen, non-citizen nationals, or non-citizen immigrants; doctorate or equivalent in health field	$6,000-7,000 plus $500 per dependent	Contact Scientific Director or Laboratory Chief in area of interest; then apply for fellowship through Division of Research Grants, NIH
C. NIH Special Research Fellowships (maximum 3 years)	U.S. citizen, non-citizen nationals, or non-citizen immigrants; doctorate or equivalent degree plus 3 years research or professional experience.	Determined on individual basis according to previous training and experience.	Contact Scientific Director or Laboratory Chief in area of interest; then apply for fellowship through Division of Research Grants, NIH
D. Research Fellow sponsored by organization other than NIH, PHS	Determined by sponsoring organization.	Established by sponsoring organization	Contact Scientific Director or Laboratory Chief in area of interest; also apply to sponsoring agency, e.g. American Cancer Society, Eleanor Roosevelt Cancer Foundation, Leukemia Society of America, Inc., etc.
E. COSTEP Program (operates year-round) Maximum 120 days per 12 month period	U.S. citizen with 2 years of baccalaureate program or more in health-related field. May be enrolled in doctoral program or professional school. Physical requirements of PHS Commissioned Corps. Plans to return to college.	Pay and allowance of a Commissioned Officer, Junior Asst. Grade	PHS Commissioned Corps
F. Civil Service Summer Employment Program	U.S. citizen, 18 years of age or older (16 if high school graduate)	Pay equivalent to GS-1 through GS-4 depending on education and experience	Civil Service Summer Employment Examination (waived for outstanding 3rd year college engineering or physical science students)
	College graduates, graduate students, faculty members, equivalent experience.	Pay equivalent to GS-5 through GS-12	Apply to NIH Personnel Staffing Branch.
G. Summer Aid Program	Disadvantaged youths	Prevailing minimum wage	Apply to NIH Personnel Staffing Branch
H. Fogarty International Scholars	International reputation, productivity, demonstrated ability in biomedical field	$30,000 per annum	Recommendation to Fogarty Center by Institute Director or Scientist. Contact Scientific Director in area of interest.

[1]Does not necessarily indicate that positions are currently available at the National Cancer Institute.
[2]Appointments are made upon intellectual attainment and demonstrated research interest and ability matched to NCI's needs.
[3]Under most circumstances, the various visiting programs are limited to non-citizens.

BUDGET PROCESS — NATIONAL CANCER INSTITUTE



NOTE: This chart represents the budget process prior to the passage of National Cancer Act of 1971. With the passage of this legislation the budget process for the National Cancer Institute will be modified.

CONTRACTORS RECEIVING MORE THAN $500,000 IN NCI RESEARCH CONTRACT FUNDS FISCAL YEAR 1971

(THOUSANDS OF DOLLARS)

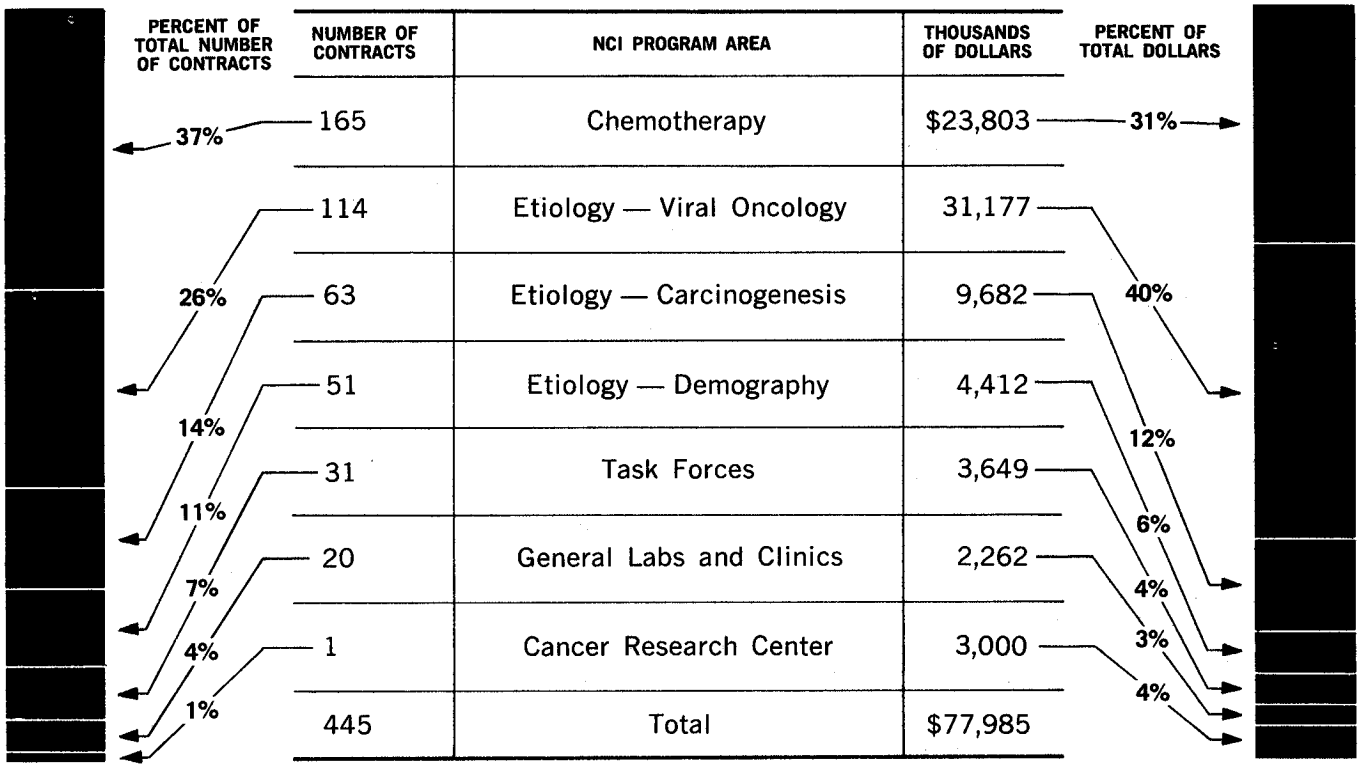
PERCENT OF TOTAL DOLLARS	NUMBER OF CONTRACTS	AMOUNT	CONTRACTOR	CITY AND STATE
1ST 10 CONTRACTORS 36%	7	$5,312	Microbiological Associates, Inc.	Bethesda, Md.
	12	3,910	Bionetics Research Laboratories	Bethesda, Md.
	1	3,000	Mary Hitchcock Memorial Center	Hanover, N.H.
	9	2,895	Southern Research Institute	Birmingham, Ala.
	5	2,860	Flow Laboratories	Rockville, Md.
	9	2,635	Atomic Energy Commission	Oak Ridge, Tenn.
	12	2,072	Hazleton Laboratories	Falls Church, Va.
	6	2,072	Meloy Laboratories	Falls Church, Va.
	13	1,748	University of California	Los Angeles, Calif.
	3	1,735	Charles Pfizer & Co., Inc.	Maywood, N.J.
1ST 20 CONTRACTORS 56%	2	1,693	A. D. Little, Inc.	Cambridge, Mass.
	6	1,671	Mason Research Institute	Worcester, Mass.
	1	1,650	St. Louis University	St. Louis, Mo.
	2	1,643	Merck and Company, Inc.	Rahway, N.J.
	3	1,625	U.S. Public Health Service	Baltimore, Md.
	3	1,605	University of Nebraska	Omaha, Nebr.
	8	1,599	University of Texas	Houston, Texas
	4	1,517	Stanford Research Institute	Menlo Park, Calif.
	2	1,146	Columbia University	New York, N.Y.
	7	1,087	Johns Hopkins University	Baltimore, Md.
1ST 30 CONTRACTORS 66%	1	1,029	Veterans Administration	Washington, D.C.
	5	1,000	Illinois Institute of Technology	Chicago, Ill.
	5	810	Battelle Memorial Institute	Columbus, Ohio
	2	805	Baylor College of Medicine	Houston, Texas
	3	803	University of Pennsylvania	Philadelphia, Pa.
	1	750	University of Southern California	Los Angeles, Calif.
	2	703	Life Sciences, Inc.	St. Petersburg, Fla
	5	665	California Dept. of Public Health	Berkeley, Calif.
	4	653	Cornell University	Ithaca, N.Y.
	2	620	Einstein College of Medicine	New York, N.Y.
1ST 37 CONTRACTORS 71%	2	609	Upjohn Company	Kalamazoo, Mich.
	4	587	ARS/Sprague Dawley	Madison, Wisc.
	2	586	American Health Foundation	New York, N.Y.
	1	575	Bristol Laboratories	Syracuse, N.Y.
	5	568	New York University	New York, N.Y.
	2	546	Presbyterian-St. Luke's Hospital	Chicago, Ill.
	5	545	University of Minnesota	Minneapolis, Minn.

166[1]	$55,329[2]	**SUBTOTAL — Contractors receiving MORE than $500,000 (listed above)**
279	22,656	**SUBTOTAL — Contractors receiving LESS than $500,000 (not listed)**
445	$77,985	**TOTAL**

[1] 166 represents 37% of the 445 contracts awarded.
[2] $55,329 represents 71% of the $77,985,000 awarded.

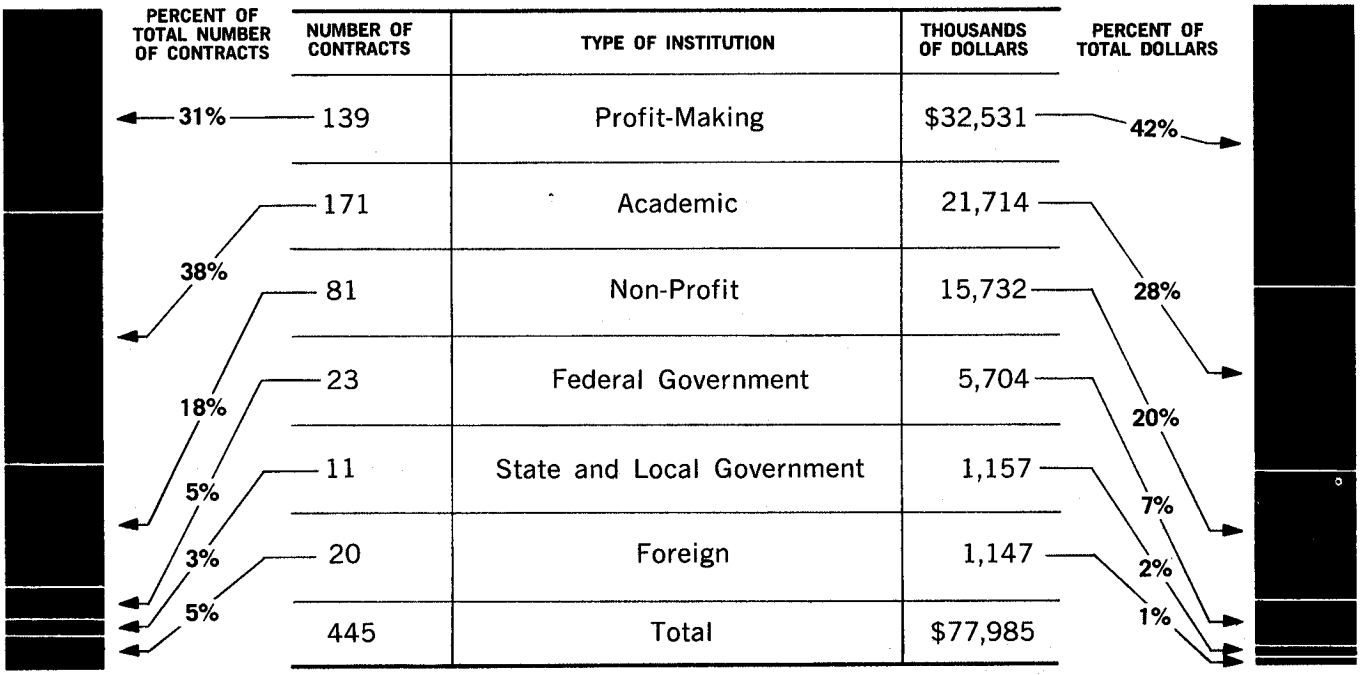
DISTRIBUTION OF RESEARCH CONTRACTS BY NCI PROGRAM AREA AND BY TYPE OF INSTITUTION — FISCAL YEAR 1971

PROGRAM



PERCENT OF TOTAL NUMBER OF CONTRACTS	NUMBER OF CONTRACTS	NCI PROGRAM AREA	THOUSANDS OF DOLLARS	PERCENT OF TOTAL DOLLARS
37%	165	Chemotherapy	$23,803	31%
26%	114	Etiology — Viral Oncology	31,177	40%
14%	63	Etiology — Carcinogenesis	9,682	12%
11%	51	Etiology — Demography	4,412	6%
7%	31	Task Forces	3,649	4%
4%	20	General Labs and Clinics	2,262	3%
1%	1	Cancer Research Center	3,000	4%
	445	Total	$77,985	

ORGANIZATION



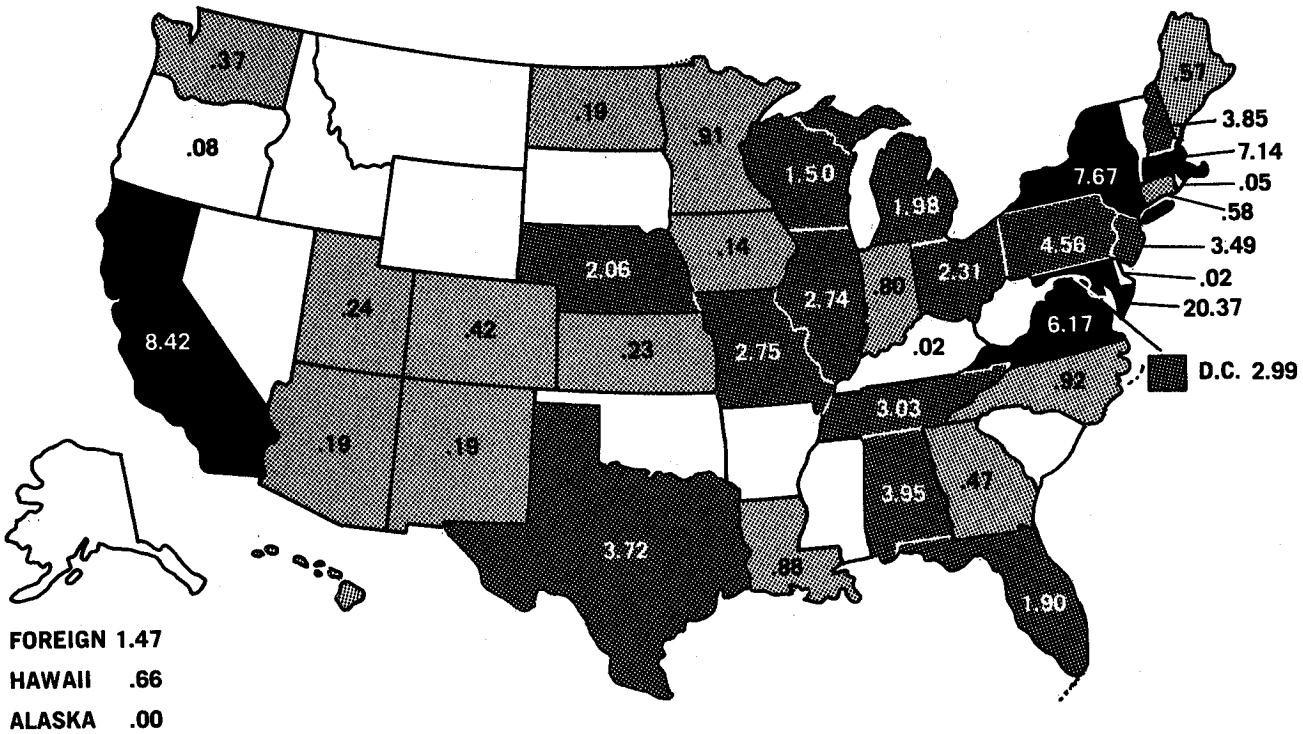
PERCENT OF TOTAL NUMBER OF CONTRACTS	NUMBER OF CONTRACTS	TYPE OF INSTITUTION	THOUSANDS OF DOLLARS	PERCENT OF TOTAL DOLLARS
31%	139	Profit-Making	$32,531	42%
38%	171	Academic	21,714	28%
18%	81	Non-Profit	15,732	20%
5%	23	Federal Government	5,704	7%
3%	11	State and Local Government	1,157	2%
5%	20	Foreign	1,147	1%
	445	Total	$77,985	

GEOGRAPHIC DISTRIBUTION OF NCI RESEARCH CONTRACTS — FISCAL YEAR 1971 (THOUSANDS OF DOLLARS)

STATE	No. OF CONTRACTS	AMOUNTS
Alabama	12	3,078
Arizona	2	144
California	43	6,565
Colorado	4	329
Connecticut	7	455
Delaware	1	19
Dist. of Col.	22	2,330
Florida	10	1,479
Georgia	6	368
Hawaii	4	514
Illinois	14	2,137
Indiana	10	626
Iowa	2	113
Kansas	2	183
Kentucky	2	15

STATE	No. OF CONTRACTS	AMOUNTS
Louisiana	8	685
Maine	2	442
Maryland	45	15,889
Massachusetts	36	5,567
Michigan	15	1,542
Minnesota	9	711
Missouri	5	2,146
Nebraska	3	1,605
New Hampshire	1	3,000
New Jersey	9	2,720
New Mexico	1	151
New York	38	5,983
North Carolina	6	717
North Dakota	1	150
Ohio	17	1,802

STATE	No. OF CONTRACTS	AMOUNTS
Oregon	3	61
Pennsylvania	19	3,555
Rhode Island	1	38
Tennessee	7	2,360
Texas	16	2,904
Utah	2	188
Virginia	27	4,810
Washington	3	286
Wisconsin	10	1,171
TOTAL U.S.	425	76,838
FOREIGN	20	1,147
TOTAL	445	77,985



STEPS LEADING TO RESEARCH CONTRACT

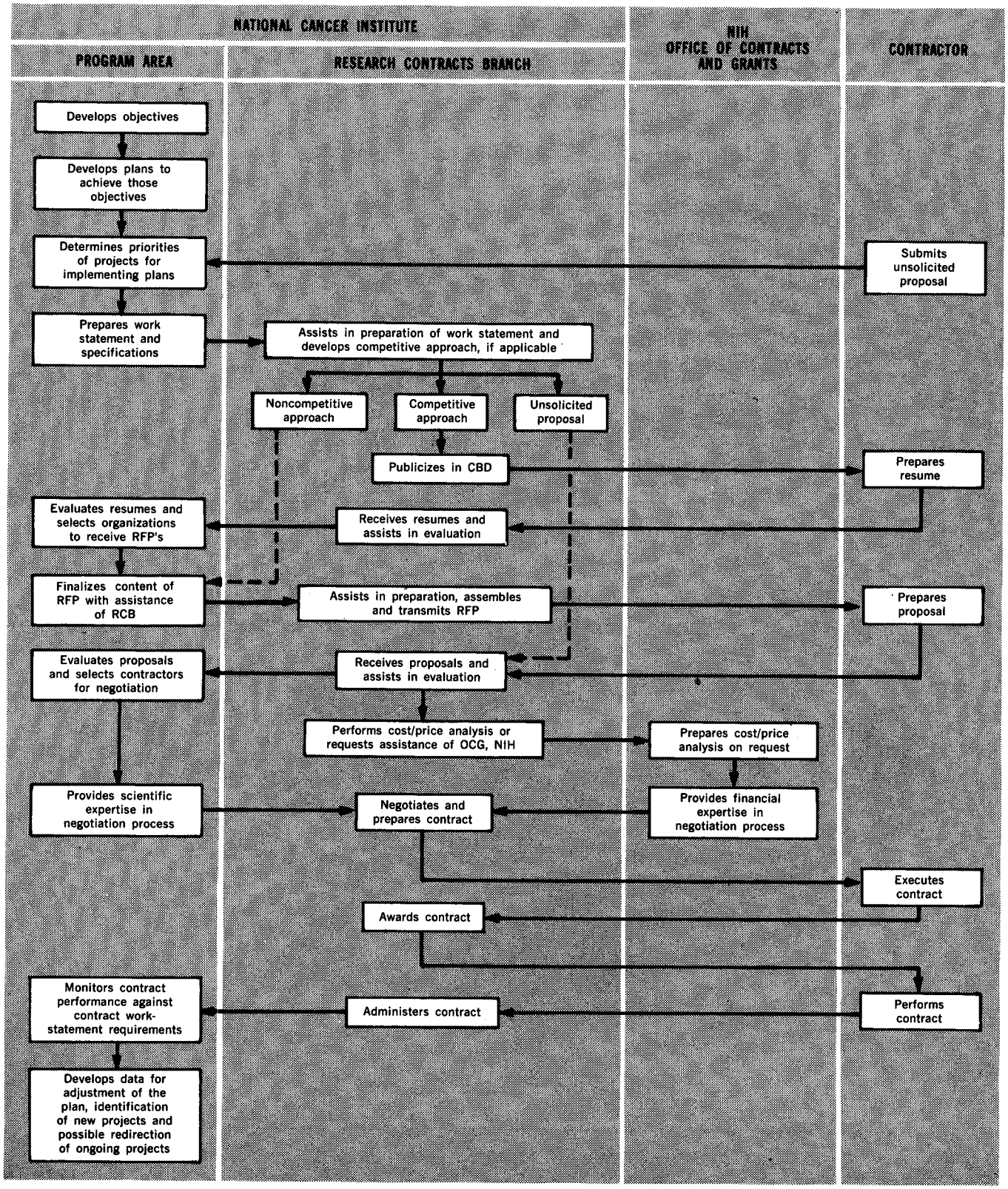


CHART DEPICTS MAJOR STEPS FROM CONCEPTION OF PROJECT TO CONTRACT EXECUTION. A POTENTIAL CONTRACT MAY, OF COURSE, BE REJECTED AT ANY OF THE APPROVAL POINTS THROUGHOUT THE PROCESS.

INSTITUTIONS RECEIVING MORE THAN $500,000 IN NCI RESEARCH GRANT FUNDS[1] FISCAL YEAR 1971

(THOUSANDS OF DOLLARS)

PERCENT OF TOTAL DOLLARS	NUMBER OF GRANTS	AMOUNT	INSTITUTION	STATE
1ST 10 INSTITUTIONS 37%	1	$5,000	Sloan Kettering Inst. for Cancer Research	New York
	73	4,624	University of California	California
	59	4,473	University of Texas	Texas
	27	3,339	University of Wisconsin, Madison	Wisconsin
	20	3,212	Institute for Cancer Research	Pennsylvania
	20	3,015	Yale University	Connecticut
	35	2,925	Roswell Park Memorial Institute	New York
	4	2,458	Childrens Cancer Research Foundation	Massachusetts
	18	2,118	Stanford University	California
	20	2,031	Temple University	Pennsylvania
1ST 20 INSTITUTIONS 54%	15	1,950	Columbia University	New York
	20	1,910	University of Washington	Washington
	14	1,620	Baylor College of Medicine	Texas
	27	1,438	State University of New York	New York
	1	1,361	Memorial Hospital of Cancer & Allied Diseases	New York
	19	1,342	Washington University	Missouri
	15	1,300	University of Rochester	New York
	16	1,279	Yeshiva University	New York
	4	1,176	St. Jude Childrens Research Hospital	Tennessee
	9	1,035	Thomas Jefferson University	Pennsylvania
1ST 30 INSTITUTIONS 64%	13	1,013	Johns Hopkins University	Maryland
	16	1,005	Massachusetts General Hospital	Massachusetts
	16	978	University of Pennsylvania	Pennsylvania
	7	938	Wistar Institute of Anatomy & Biology	Pennsylvania
	20	903	University of Chicago	Illinois
	31	882	New York University	New York
	14	837	Harvard University	Massachusetts
	1	762	Montefiore Hospital & Medical Center	New York
	17	749	Duke University	North Carolina
	19	731	University of Minnesota, Minneapolis	Minnesota
1ST 41 INSTITUTIONS 71%	8	726	Massachusetts Institute of Technology	Massachusetts
	9	675	Mt. Sinai Sch. of Med. of the City U. of N.Y.	New York
	4	652	New England Medical Center Hospitals	Massachusetts
	12	616	Cornell University	New York
	17	587	University of Pittsburgh	Pennsylvania
	5	585	Salk Institute for Biological Studies	California
	9	559	Jackson Laboratory	Maine
	12	555	University of Southern California	California
	7	525	University of Maryland	Maryland
	4	514	Mayo Foundation	Minnesota
	10	501	University of Miami	Florida
	668[2]	**$62,899[3]**	**SUBTOTAL — Institutions receiving MORE than $500,000 (listed above)**	
	579	**25,861**	**SUBTOTAL — Institutions receiving LESS than $500,000 (not listed)**	
	1,247	**$88,760**	**TOTAL**	

[1] Excludes General Research Support Grants.
[2] 668 represents 54% of the 1,247 grants awarded.
[3] $62,899 represents 71% of the $88,760,000 awarded.

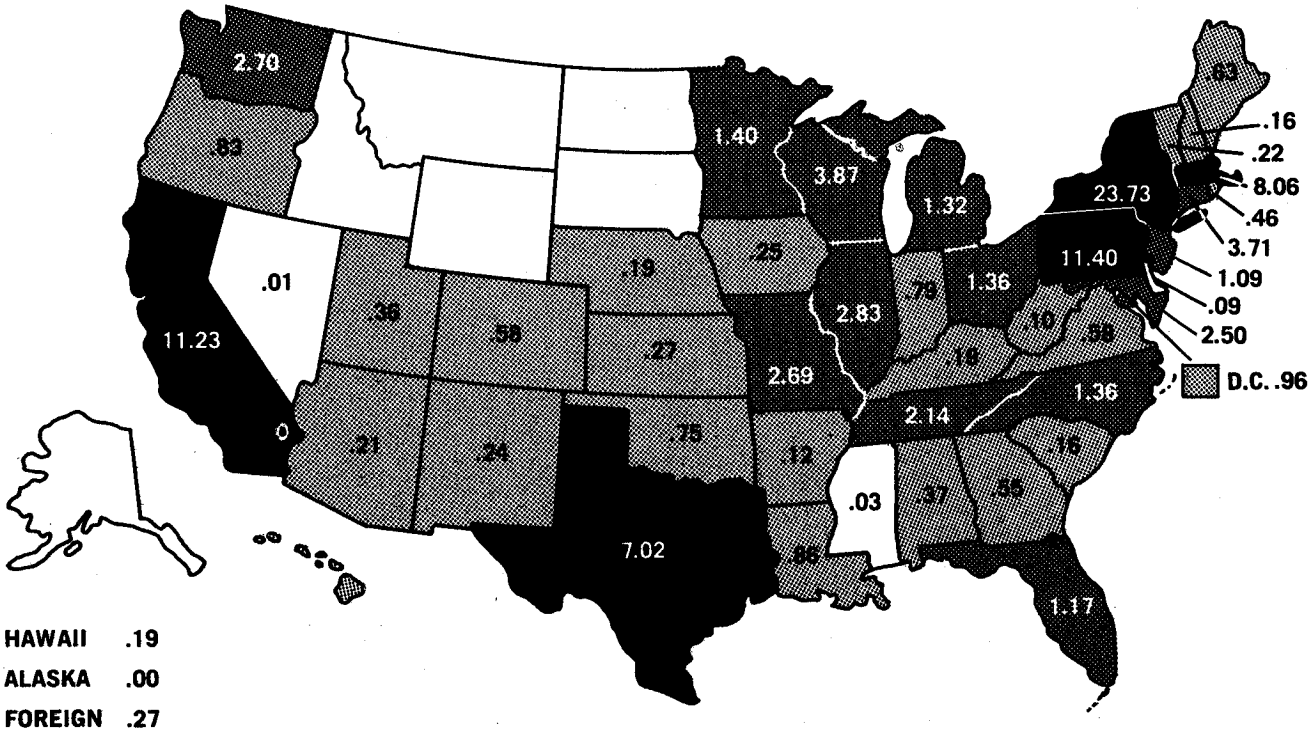
GEOGRAPHIC DISTRIBUTION OF NCI RESEARCH GRANTS — FISCAL YEAR 1971* (THOUSANDS OF DOLLARS)

STATE	No. OF GRANTS	AMOUNTS
Alabama	8	328
Arizona	7	185
Arkansas	2	110
California	144	9,966
Colorado	16	517
Connecticut	34	3,292
Delaware	2	80
Dist. of Col.	18	852
Florida	28	1,038
Georgia	11	488
Hawaii	4	168
Illinois	55	2,514
Indiana	14	698
Iowa	6	226
Kansas	11	237
Kentucky	4	173

STATE	No. OF GRANTS	AMOUNTS
Louisiana	13	766
Maine	9	559
Maryland	32	2,218
Massachusetts	72	7,160
Michigan	24	1,176
Minnesota	23	1,245
Mississippi	2	28
Missouri	34	2,384
Nebraska	7	165
Nevada	1	2
New Hampshire	5	139
New Jersey	14	966
New Mexico	6	214
New York	211	21,065
North Carolina	32	1,207
Ohio	25	1,211

STATE	No. OF GRANTS	AMOUNTS
Oklahoma	18	664
Oregon	24	734
Pennsylvania	120	10,121
Rhode Island	10	403
South Carolina	3	141
Tennessee	20	1,900
Texas	80	6,230
Utah	10	320
Vermont	5	195
Virginia	15	517
Washington	28	2,396
West Virginia	3	84
Wisconsin	32	3,437
TOTAL U.S.	1,242	88,519
FOREIGN	5	241
TOTAL	1,247	88,760

*Excludes General Research Support.



HAWAII .19
ALASKA .00
FOREIGN .27

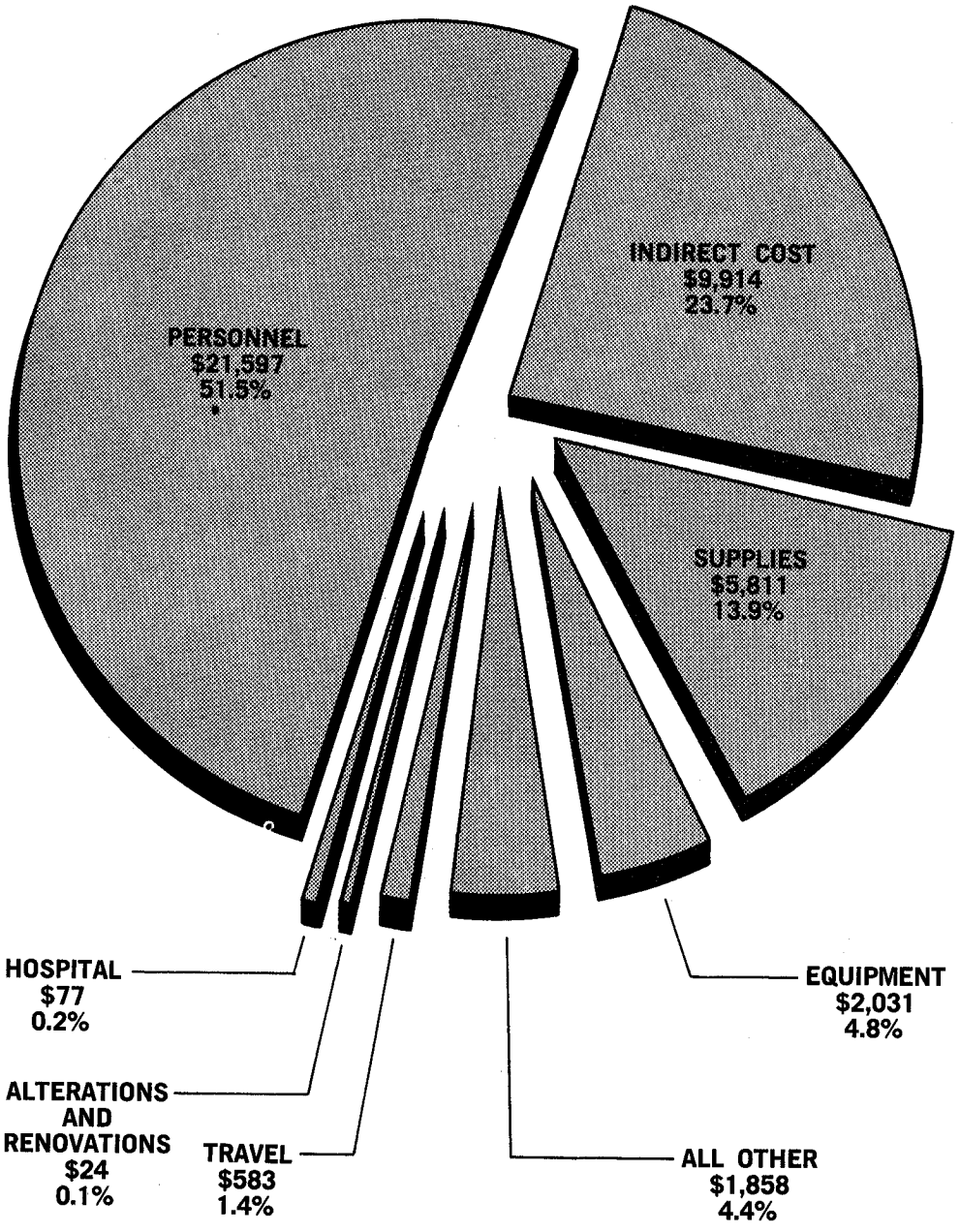
PERCENTAGE OF TOTAL DOLLARS AWARDED

0.00-0.09% | 0.10-0.99% | 1.00-4.99% | 5.00% AND OVER

TOTAL FUNDS AUTHORIZED IN FISCAL YEAR 1971 FOR TRADITIONAL RESEARCH GRANTS BY BUDGET CATEGORY

(THOUSANDS OF DOLLARS)

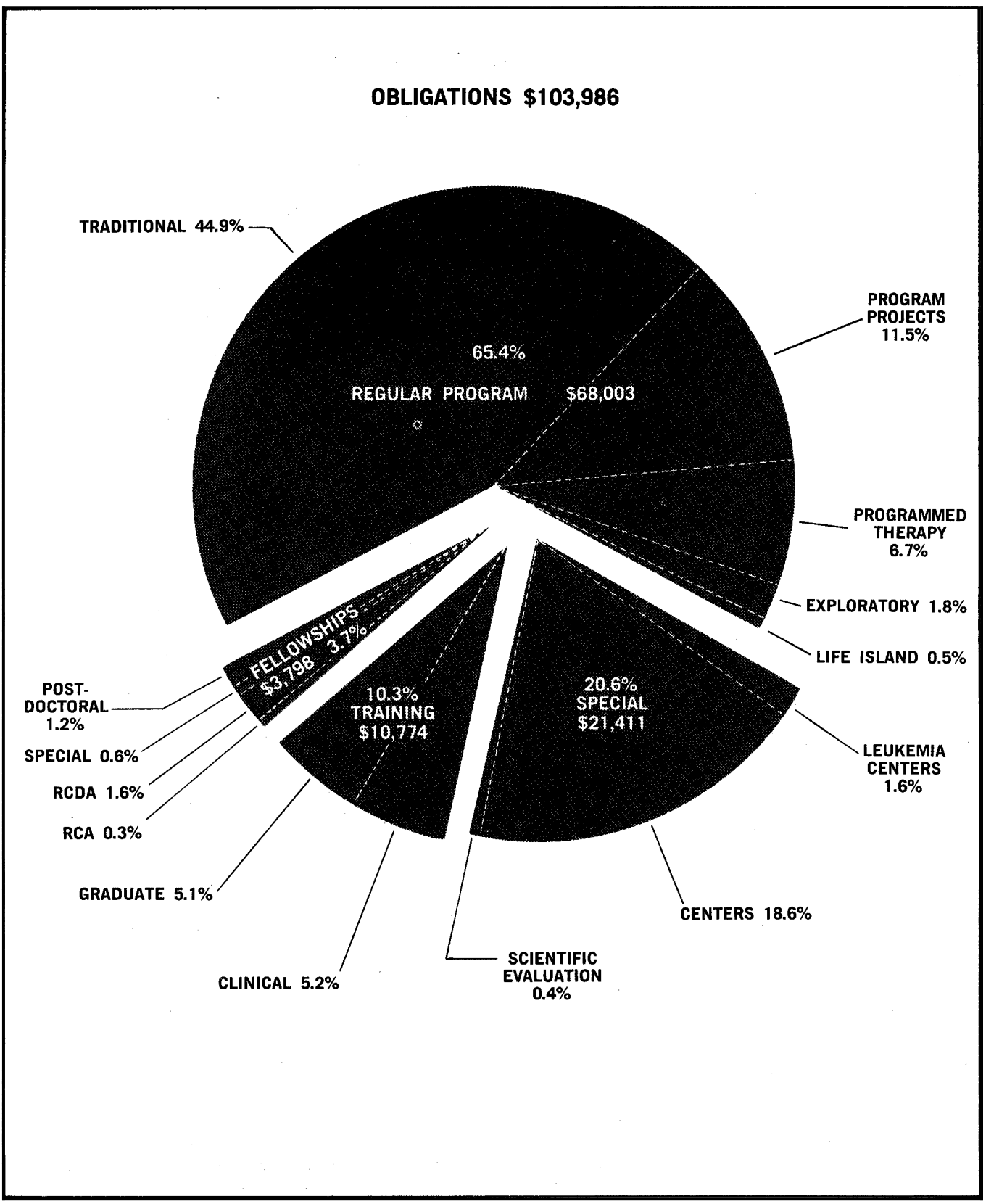
TOTAL AUTHORIZATION: $41,895



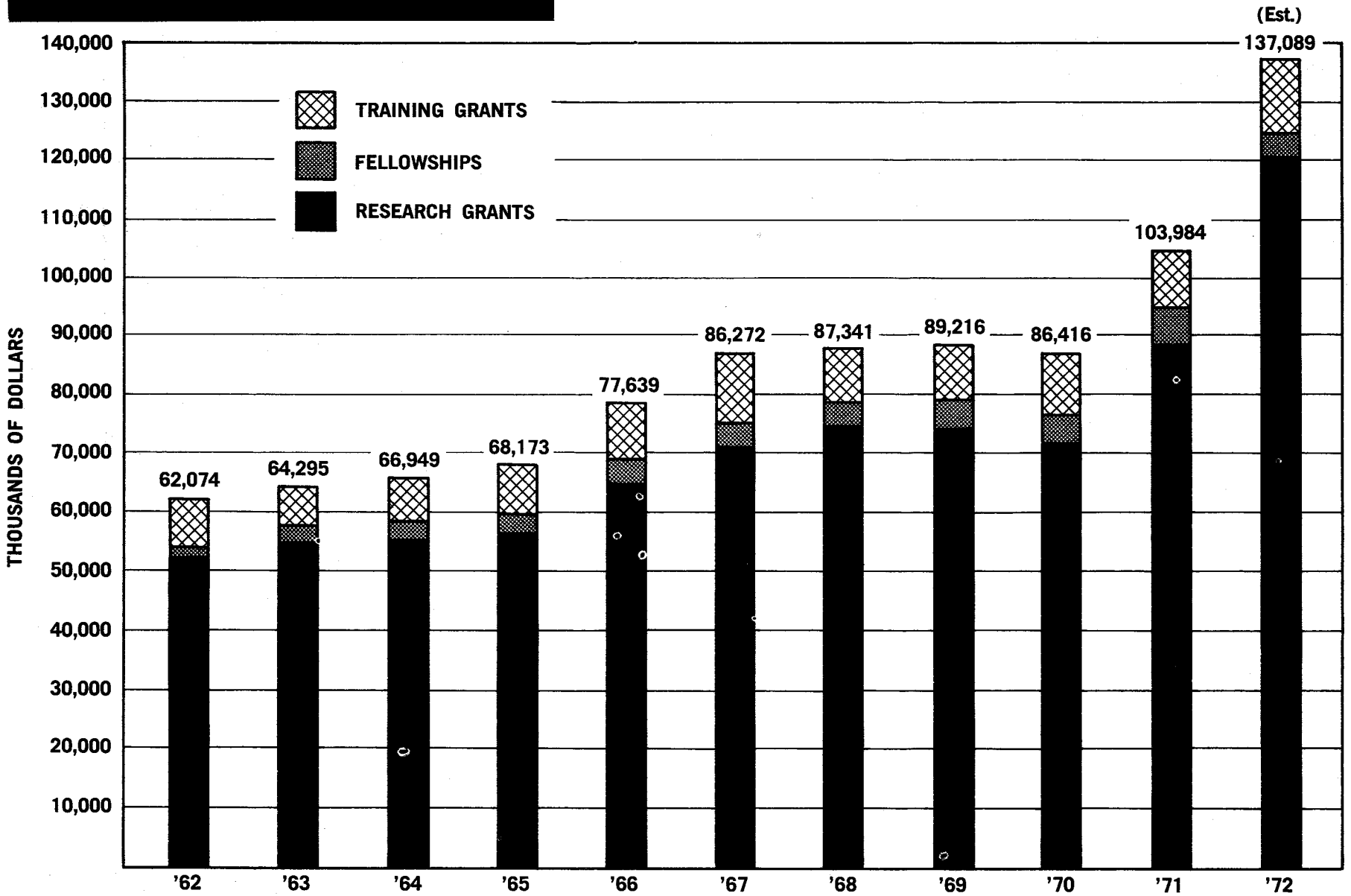
NOTE: These are regular research grants, with the exception of program projects, programmed therapy, exploratory and life island grants.

FISCAL YEAR 1971 GRANT OBLIGATIONS BY BUDGET ACTIVITY

(THOUSANDS OF DOLLARS)



NCI RESEARCH AND TRAINING GRANTS AND FELLOWSHIP AWARDS 1962-1972

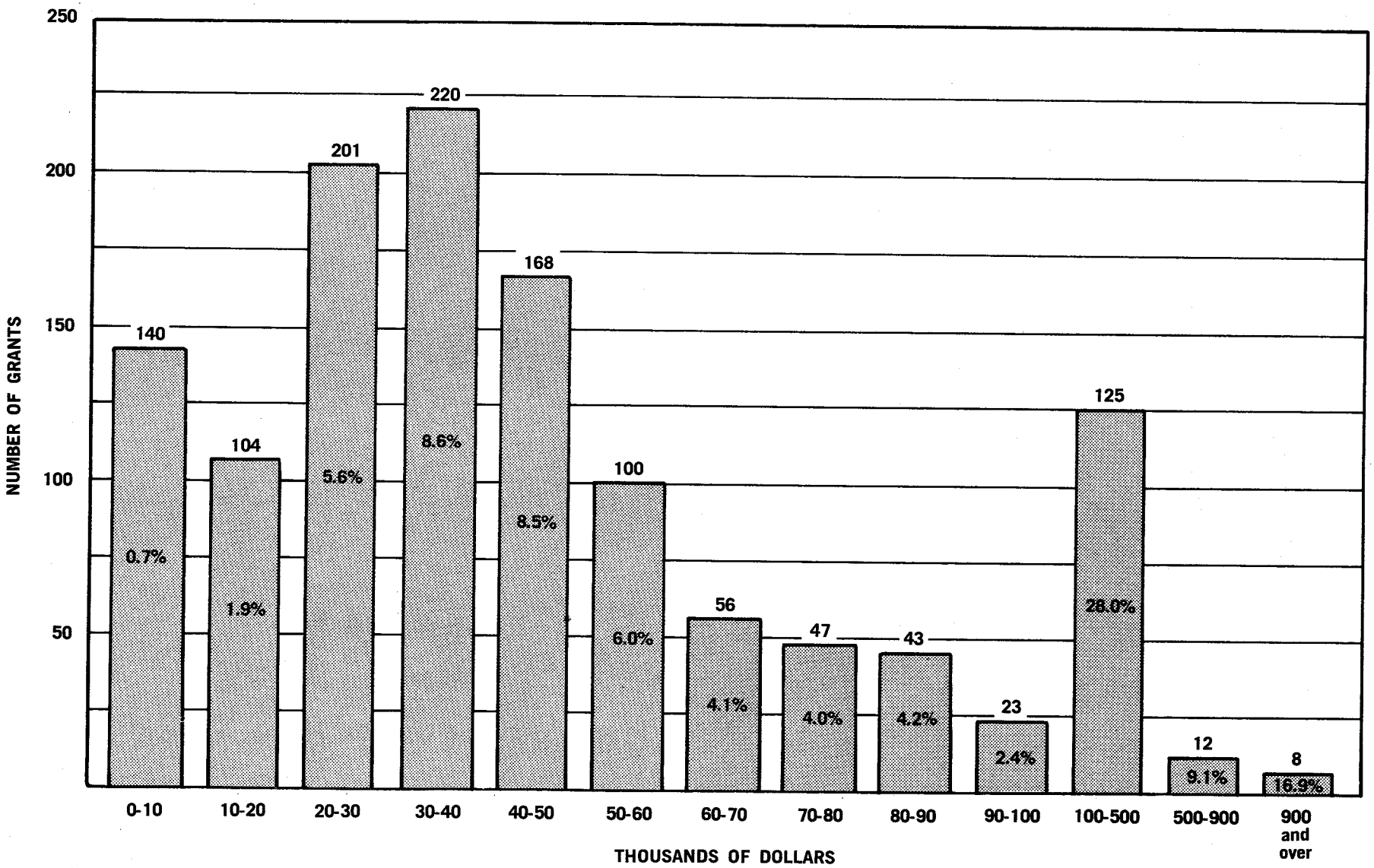


NOTE: The 1972 estimate does not include the $11,000,000 allocated for construction that will be awarded under the Grants Activity.

FISCAL YEAR 1971 DISTRIBUTION OF ALL RESEARCH GRANTS° BY THE AMOUNT AWARDED

TOTAL DOLLAR AMOUNT: $88,760,000

TOTAL NUMBER OF GRANTS: 1,247



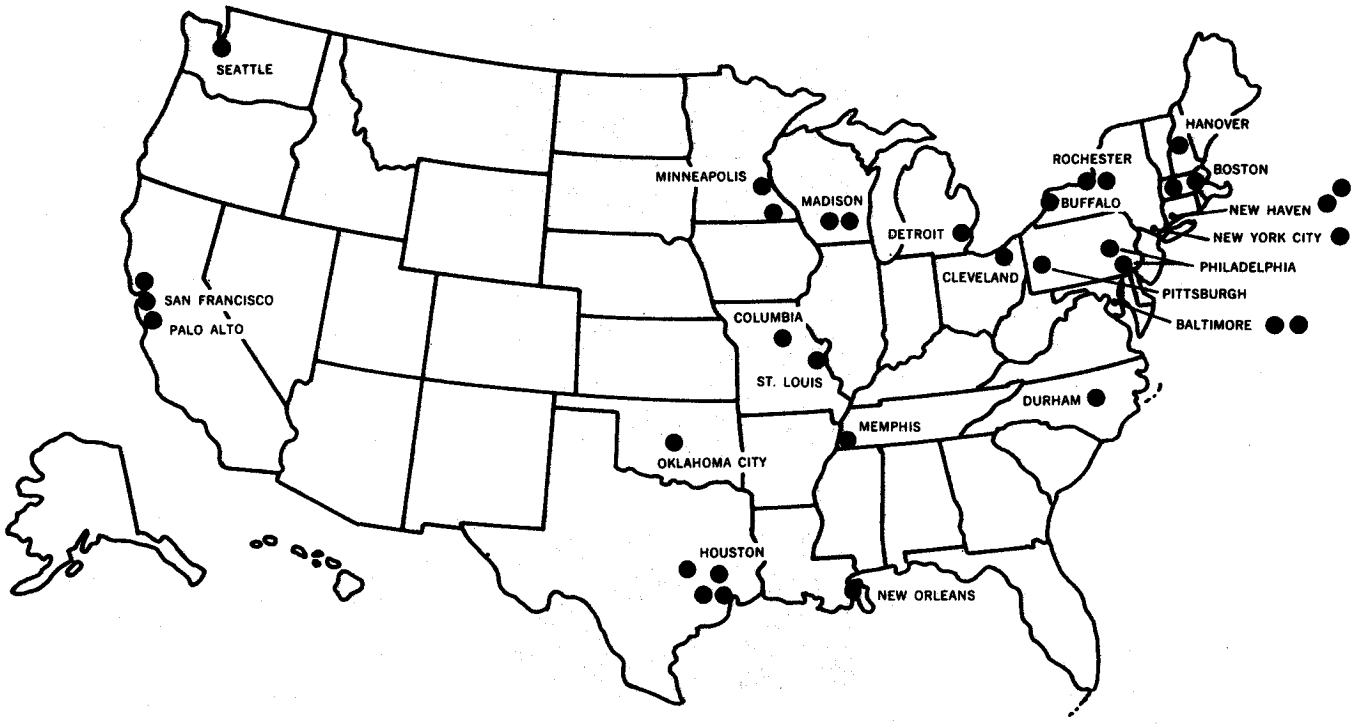
NOTES: Figures within columns indicate percentages of TOTAL dollar amount awarded.

Total number of grants includes supplements and the Single Instrument of Support as well as Cancer Research Centers. .

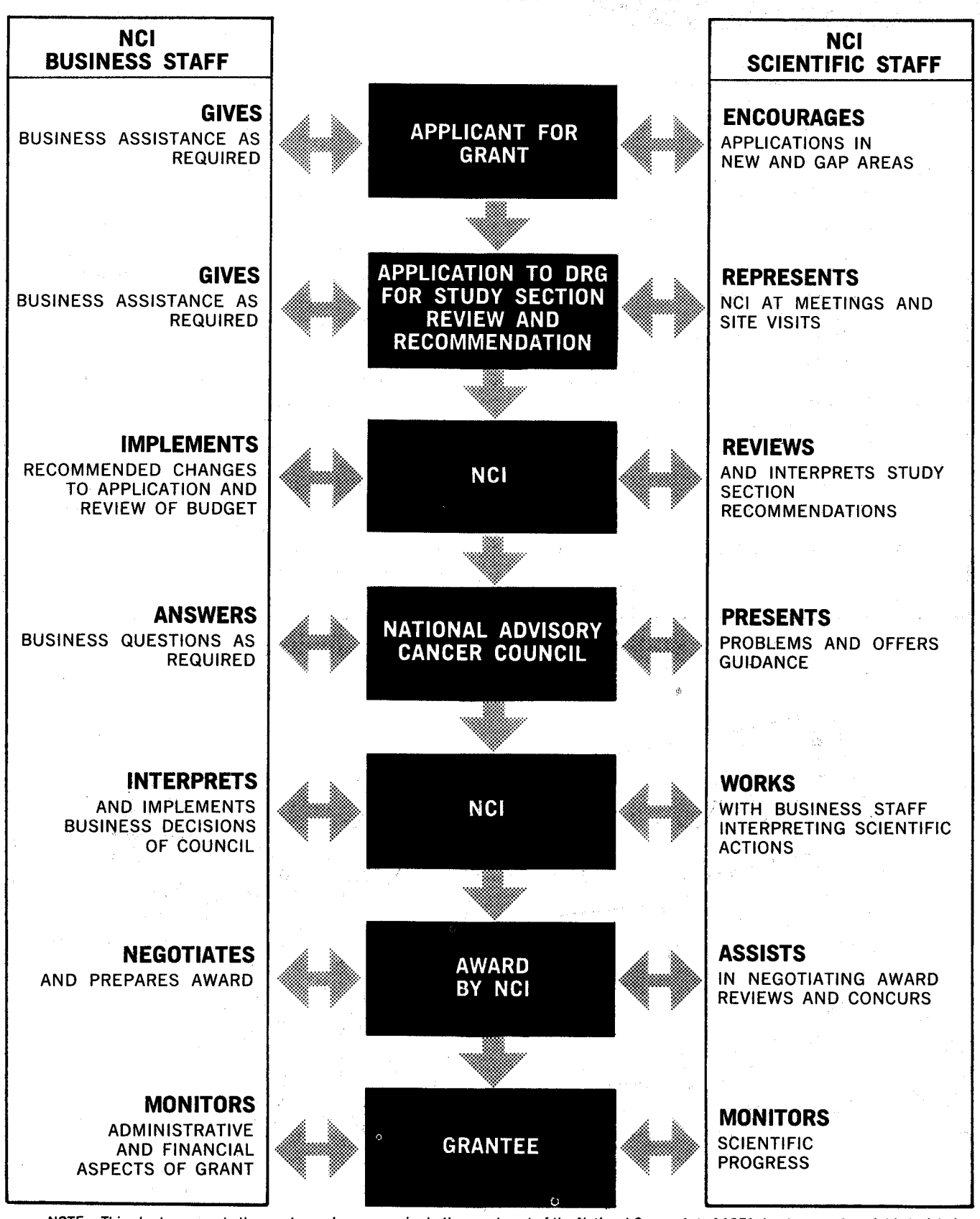
CANCER CLINICAL CENTERS ACTIVE AS OF JULY 1971

STATE	INSTITUTION	TYPE
Calif.	Mt. Zion Hospital	Radiation
	Stanford University	Radiation
	University of California	Multi-Disc.
Conn.	Yale University	Radiation
	Yale University	Multi-Disc.
La.	Tulane University	Multi-Disc.
Md.	Johns Hopkins University	Multi-Disc.
	University of Maryland	Radiation
Mass.	Childrens Cancer Research Foundation	Multi-Disc.
	Tufts University	Radiation
Mich.	Michigan Cancer Foundation	Multi-Disc.
Minn.	Mayo Foundation	Multi-Disc.
	University of Minnesota	Multi-Disc.
Mo.	Cancer Research Center	Multi-Disc.
	Washington University	Radiation
N. H.	Mary Hitchcock Memorial Cancer Center	Multi-Disc.
N. Y.	Health Research, Inc.	Multi-Disc.
	Memorial Hospital	Multi-Disc.

STATE	INSTITUTION	TYPE
N. Y.	University of Rochester	Multi-Disc.
	University of Rochester	Radiation
N. C.	Duke University Medical Center	Multi-Disc.
Ohio	Case-Western Reserve	Radiation
Okla.	Oklahoma Medical Research Foundation	Multi-Disc.
Penn.	Allegheny General Hospital	Radiation
	Institute for Cancer Research	Immunology
	Thomas Jefferson University	Radiation
Tenn.	St. Jude Childrens Research Hospital	Multi-Disc.
Texas	Baylor University	Carcinogenesis
	M. D. Anderson	Multi-Disc.
	M. D. Anderson	Radiation
	M. D. Anderson	Radiation
Wash.	University of Washington	Multi-Disc.
Wisc.	University of Wisconsin	Radiation
	University of Wisconsin	Multi-Disc.



FLOW CHART FOR RESEARCH GRANT APPLICATION



NOTE: This chart represents the grant-award process prior to the enactment of the National Cancer Act of 1971. Implementation of this legislation may require modification of the grant process of the National Cancer Institute.

FOREIGN RESEARCH GRANTS AND CONTRACTS — FISCAL YEAR 1971

(THOUSANDS OF DOLLARS)

COUNTRY	NUMBER OF GRANTS	NUMBER OF CONTRACTS	TOTAL AMOUNT	PERCENT OF TOTAL AMOUNT AWARDED
Belgium	1	—	$ 22	1.6
Canada	—	2	45	3.2
Colombia	—	1	39	2.8
Costa Rica	—	1	11	0.8
England	1	—	15	1.1
France	—	1	248	17.9
Germany	—	1	25	1.8
Israel	—	5	266	19.2
Italy	—	2	43	3.1
Japan	—	2	99	7.1
Netherlands	—	1	6	0.4
Norway	—	1	37	2.7
Puerto Rico	1	1	151	10.9
South Africa	1	—	3	0.2
Sweden	—	1	80	5.8
Switzerland	1	—	60	4.3
Uganda	—	1	238	17.1
TOTALS	**5**	**20**	**$1,388**	**100.0**