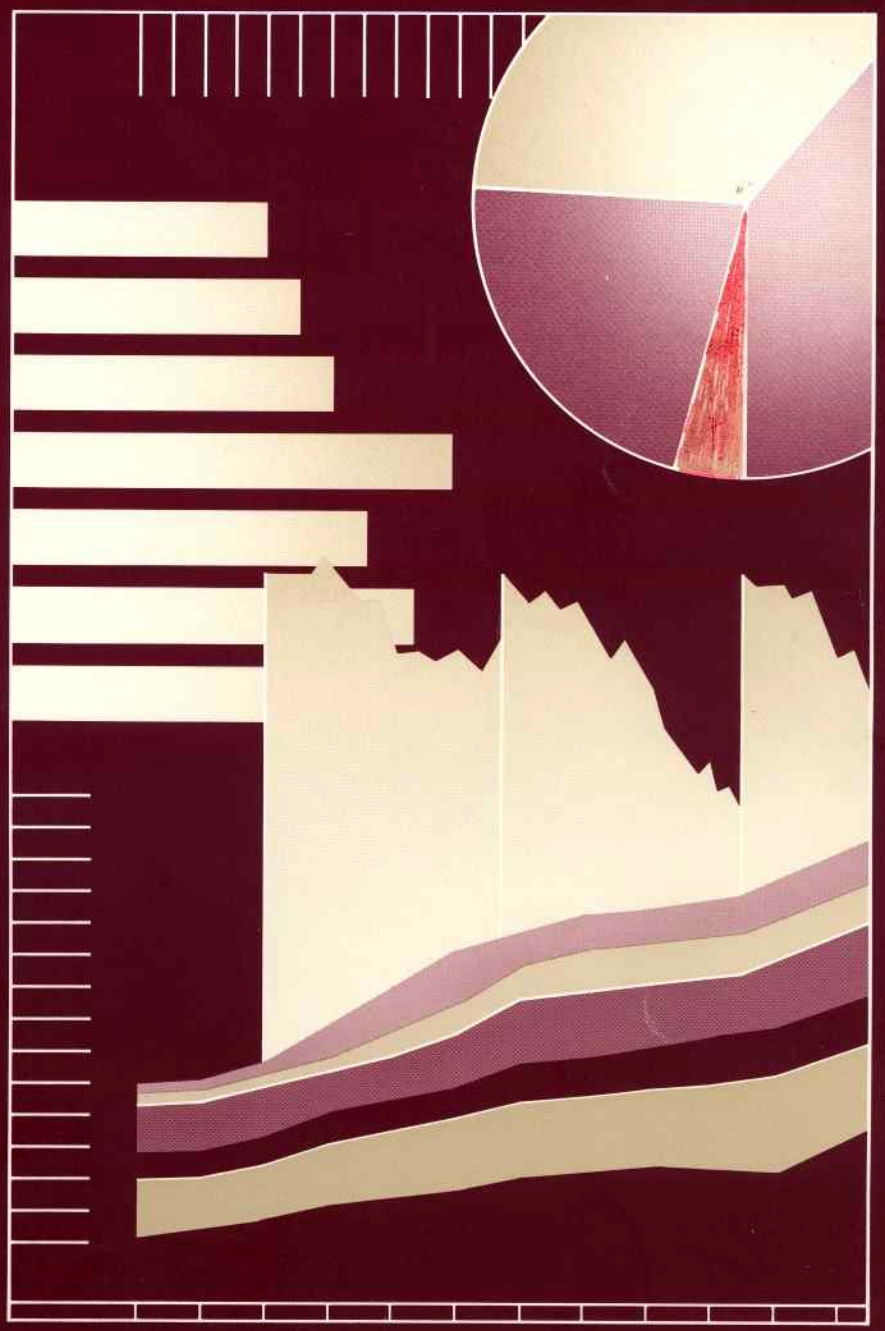
NCI

FACT BOOK

National
Cancer
Institute



1986

U.S. DEPARTMENT
OF HEALTH AND
HUMAN SERVICES

Public Health
Service

National
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Health

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For Administrative Use

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Preface

The information set forth in this publication is compiled and amended annually by the Financial Management Staff of the National Cancer Institute and is intended primarily for use by members of the Institute staff, the principal advisory groups to the Institute and others involved in the administration and management of the National Cancer Program. Questions regarding any of the information contained herein may be directed to the Financial Manager, National Cancer Institute, 9000 Rockville Pike, Bethesda, Maryland 20892.

Table of Contents

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		Direct-in Dialing
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Mr. Nicholas Olimpio	4-A-49	496-9606

**NCI Executive Committee Members*

Year 2000 Goals and Objectives

The National Cancer Institute has established a set of objectives to guide the cancer control effort of the United States through the year 2000. The objectives are based on existing knowledge of how to prevent, diagnose and treat cancer, and on the gains in treatment that are likely to occur over the next decade. If these objectives are met then as much as a fifty percent reduction in the cancer mortality rate can be achieved by the end of the year 2000. The objectives emphasize four main areas: smoking prevention and cessation, dietary modification to prevent cancer, early detection of cancer through effective screening, and widespread application of the latest achievements in treatment research.

The following is an outline of the cancer control objectives:

Control Area	Brief Rationale	Year 2000 Objective
Prevention/ Smoking	The causal relationship between smoking and cancer has been scientifically established.	— Reduce the percentage of adults who smoke from 34 percent (in 1983) to 15 percent or less. — Reduce the percentage of youths who smoke by age 20 from 36 percent (in 1983) to 15 percent or less.
Prevention/ Diet	Research indicates that high-fat and low-fiber consumption may increase the risk for various cancers. In 1983 NAS reviewed research on diet and cancer and recommended a reduction in fat; more recent studies led NCI to recommend an increase in fiber. Research is underway to verify the causal relationship and to test the impact on cancer incidence.	— Reduce average consumption of fat from 40 percent to 30 percent or less of total calories. — Increase average consumption of fiber from 8 to 12 grams per day to 20 to 30 grams per day.
Screening/ Breast	The effectiveness of breast screening in reducing mortality has been scientifically established.	— Increase the percentage of women ages 50 to 70 who have annual physical breast exam and mammography from 45 percent for physical exam alone and 25 percent for mammography to 80 percent for each.
Screening/ Cervical	The effectiveness of cervical screening in reducing mortality has been scientifically established.	— Increase the percentage of women who have a Pap smear every 3 years to 90 percent from 79 percent (ages 20 to 39) and to 80 percent from 57 percent (ages 40 to 70).
Treatment/ Transfer of Research Results to Practice	NCI review of clinical trial and SEER data indicates that, for certain cancer sites, mortality in SEER is greater than mortality experienced in clinical trials.	— Increase adoption of state-of-the-art treatment, including improved treatment of micrometastases.

Significant Initiatives in 1986

National Cancer Institute Acquired Immune Deficiency Syndrome Actual Funding

(Dollars in Thousands)

1984	1985	1986
$16,627	$26,874	$45,050

Progress in Acquired Immune Deficiency Syndrome (AIDS)

NCI activities in the past year have been unparalleled with respect to the understanding and treatment of AIDS. Significant advances have been made in unravelling the processes used by the HTLV-III virus to take over a cell. These advances include the identification of viral genes such as the "tat" gene, which enables the virus to overwhelm the cell's normal internal machinery. The understanding of these processes is important in that it may allow us to design specific therapies which can combat the virus with minimal effect on the host cell.

The drug Azidothymidine (AZT), whose anti-retroviral activity was discovered by scientists in the NCI intramural program, has been determined to be effective in the treatment of AIDS as a result of Phase I and II clinical studies conducted under NCI scientific guidance. Other anti-retroviral compounds are also being developed within this program that are expected to add substantially to the treatment of AIDS.

A coordinated effort within the NCI involving multiple laboratories has identified several ways in which "neutralizing antibodies" can be generated against the HTLV-III virus. Although these studies are in the very early stages, they hold substantive promise with regard to ultimately generating an effective vaccine against this disease.

The NCI continues to work in concert with the National Institute of Allergy and Infectious Diseases (NIAID) to establish a large scale drug development program against AIDS which will span the breadth of clinical drug development. These efforts include the acquisition, the preclinical testing, and the clinical testing of the most promising anti-AIDS compounds.

NCI is also encouraging the development of partnerships with the private sector to defeat AIDS. One such partnership is to award exclusive license to private industry for the compound 2′-3′-dideoxycytidine. This agent was developed in the NCI intramural program, and based on preclinical data, appears even more promising than AZT. This effort is reflective of a number of ongoing efforts to enlist elements from the private sector in combating the war against AIDS.

Hispanic Cancer Control Program (HCCP)

The NCI developed a Hispanic Cancer Control Program (HCCP) to address a number of issues regarding cancer in Hispanics. To address the lack of data on cancer in Hispanics, two priority areas for the HCCP are data collection and data analyses. To assist in the collection of data, the NCI Surveillance, Epidemiology and End Results (SEER) Program added the state of New Jersey to its data collection efforts. Hispanics will also be over-sampled in the Cancer Control Supplement to the 1987 National Health Interview Survey which is conducted by the National Center for Health Statistics and the Bureau of the Census. Also, a study has been commissioned by the HCCP which is examining data sources for information on cancer in Hispanics related to the Institute's cancer mortality reduction objectives. This study will identify data sources which contain information on Hispanics, both published as well as unpublished, and identify gaps of information about cancer in Hispanics insofar as such information would relate to monitoring progress to achieving the mortality reduction objectives for Hispanics.

Current efforts being taken by NCI in preventing cancer in the Hispanic population include the funding of four research projects related to smoking

and Hispanics, and one research project regarding health education for can cer screening and detection of elderly Hispanic women. Besides these projects, in April, 1986, the NCI convened a workshop for identifying NCI Hispanic program priorities and directions.

Physician Data Query (PDQ-P)

The Physician Data Query (PDQ) system has been available for the past t years as a resource to provide physicians nationwide with information abou state-of-the-art cancer treatment for cancer patients. A new service of the PDQ system, called PDQ-P, is being designed as a computerized informati system to facilitate the delivery of cancer prevention and screening activiti during the course of typical primary care encounters. The PDQ-P concept has been successfully field tested among various primary care physician groups. Feedback from these groups is being used to tailor the system bett to the needs of the practicing physician. Responding physicians have also provided considerable input to NCI on effectively reaching the public with prevention and screening information.

President's Cancer Panel

Director's Biography

Vincent T. DeVita, Jr., M.D.

Vincent T. DeVita, Jr., M.D. has served as Director of the National Cancer Institute since July 9, 1980. He joined NCI initially in 1963 as a Clinical Associate in the Laboratory of Chemical Pharmacology, left in 1965 to complete advanced training in medicine at Yale-New Haven Medical Center and returned to the National Cancer Institute in 1966.

He has served NCI consecutively as a Senior Investigator in the Solid Tumor Service, Head of the Solid Tumor Service, Chief of the Medicine Branch, and Director of the Division of Cancer Treatment from 1974 until his appointment as NCI Director. In addition, he has served concurrently as NCI Clinical Director since 1975.

Dr. DeVita earned his Bachelor of Science degree from the College of William and Mary in 1957. He was awarded his M.D. degree with distinction from the George Washington University School of Medicine in 1961. He was Associate Professor of Medicine from 1971 to 1975 and has had the appointment Professor of Medicine since 1975 at the George Washington University School of Medicine.

In 1972, Dr. DeVita received the Albert and Mary Lasker Medical Research Award for his contribution to the cure of Hodgkin's disease. In 1980 he was awarded the Griffuel Prize by the Association for the Development of Research on Cancer, again for his important contributions to cancer chemotheraphy, particularly his development of curative multiple drug therapy for Hodgkin's disease and diffuse large cell lymphoma. He was awarded an Honorary Doctor of Science degree by the College of William and Mary in 1981, the Alumni Achievement Award from the George Washington University in 1963 and an Honorary Doctor of Science degree from George Washington University in 1984.

In 1985, Dr. DeVita was elected to the Institute of Medicine of the national Academy of Sciences and was presented the Pierluigi Nervi Award for Cancer Research in Italy, the Medal of Honor from the American Cancer Society, and the Barbara Bohen Pfeifer Award from the American-Italian Foundation for Cancer Research. Awards in 1986 include the Tenth Richard and Hinda Rosenthal Award (American Association for Cancer Research, Inc.) and the Stanley G. Kay Memorial Award (D.C. American Cancer Society).

He is past-president and board member of the American Society of Clinical Oncology, has served on the board of directors of the American Association for Cancer Research and as a member of the panel of consultants to the International Union Against Cancer. Dr. DeVita also serves on the editorial boards of numerous scientific journals and is the author or co-author of more than 300 scientific articles. In addition, he is one of the editors and authors of *Cancer: Principles and Practice of Oncology*, a comprehensive textbook in the field of cancer medicine.

National Cancer Advisory Board

Appointees	Expiration of Appointment
Dr. David Korn, *Chairman* *Stanford University* *Stanford, California*	1990
Mr. Richard A. Bloch *Kansas City, Missouri*	1988
Dr. Roswell K. Boutwell *University of Wisconsin* *Madison, Wisconsin*	1990
Dr. Victor Braren *Vanderbilt University School of Medicine* *Nashville, Tennessee*	1988
Mrs. Nancy G. Brinker *Susan G. Komen Foundation* *Dallas, Texas*	1992
Mrs. Helen G. Brown *Jonsson Comprehensive Cancer Center* *Los Angeles, California*	1990
Dr. Ed L. Calhoon *Beaver, Oklahoma*	1988
Dr. Tim Lee Carter *Tompkinsville, Kentucky*	1988
Dr. John R. Durant *Fox Chase Cancer Center* *Philadelphia, Pennsylvania*	1992
Dr. Gertrude B. Elion *Burroughs Wellcome Company* *Research Triangle Park, North Carolina*	1990
Dr. Bernard Fisher *University of Pittsburgh* *Pittsburgh, Pennsylvania*	1992
Dr. Phillip Frost *Key Pharmaceuticals* *Miami, Florida*	1992
Dr. Geza J. Jako *Institute for Research in Laser Surgery* *Melrose, Massachusetts*	1988
Dr. Enrico Mihich *Roswell Park Memorial Hospital* *Buffalo, New York*	1990
Mrs. Irene Sue Pollin *Psychiatric Social Worker-Private Practice* *Chevy Chase, Maryland*	1992
Mrs. Barbara I. Shook *Barbara Ingalls Shook Foundation* *Birmingham, Alabama*	1988
Dr. Louise C. Strong *M.D. Anderson Hospital and Tumor Institute* *Houston, Texas*	1990
Dr. Louis W. Sullivan *Morehouse School of Medicine* *Atlanta, Georgia*	1992

Executive Secretary

Mrs. Barbara S. Bynum
National Cancer Institute, NIH
Bethesda, Maryland

Ex Officio Members

The Honorable Otis R. Bowen, M.D.
Secretary for Health and Human Services

The Honorable William E. Brock
Secretary of Labor
Washington, DC

Vincent T. DeVita, Jr.
National Institutes of Health, PHS
Bethesda, Maryland

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Office of Science and Technology Policy
Washington, DC

Dr. John Gronvall
Veterans Administration
Washington, DC

The Honorable William E. Mayer
Department of Defense
Washington, DC

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National Institute for Occupational Safety and Health
Atlanta, Georgia

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Research Triangle Park, North Carolina

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Environmental Protection Agency
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Rockville, Maryland

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Office of Chief of Naval Operations
Washington, DC

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Consumer Product Safety Commission
Bethesda, Maryland

Dr. Ralph E. Yodaiken
Department of Labor
Washington, DC

Division Boards of Scientific Counselors

Division of Cancer Biology and Diagnosis

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Susan E. Cullen, Ph.D.	1990	Richard S. Metzgar, Ph.D.	1990
Vittorio Defendi, M.D.	1990	Robert L. Perlman, M.D., Ph.D.	1987
Barbara A. Hamkalo, Ph.D.	1987	Harold E. Varmus, M.D.	1987
Kathryn V. Holmes, Ph.D.	1990	Sandra L. White, Ph.D.	1989
Nancy E. Kleckner, Ph.D.	1987	Ray J. Wu, Ph.D.	1987

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Robert L. Goodman, M.D.	1987	Alan S. Rosenthal, M.D.	1987
Mark T. Groudine, M.D., Ph.D.	1990	Geraldine Schechter, M.D.	1989
Robert C. Jackson, Ph.D.	1988	Robert T. Schimke, M.D.	1989
John H. Kersey, M.D.	1988	H. Rodney Withers, M.D., D.Sc.	1989

Division of Cancer Etiology

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Janet S. Butel, Ph.D.	1989	Moyses Szklo, Ph.D.	1990
George W. Casarett, Ph.D.	1990	George F. Vande Woude	1989
Lawrence Fischer, Ph.D.	1990	Lee W. Wattenberg, M.D.	1987
Dietrich Hoffmann, Ph.D.	1988	Noel S. Weiss, M.D.	1989
Hilary Koprowski, M.D.	1990	Alice S. Whittemore, Ph.D.	1990
William T. London, M.D.	1989	Mimi C. Yu, Ph.D.	1988
Peter N. Magee, M.D.	1989		

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William A. Darity, Ph.D.	1990	Lewis H. Kuller, M.D., Dr.P.H.	1987
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Paul F. Engstrom, M.D.	1989	Virgil Loeb, Jr., M.D.	1987
Virginia L. Ernster, Ph.D.	1990	Robert J. McKenna, M.D.	1989
Lloyd K. Everson, M.D.	1990	Frank L. Meyskens, Jr., M.D.	1990
Donald M. Hayes, M.D.	1989	David J. Sencer, M.D.	1988
David M. Hegsted, Ph.D.	1987	John E. Ultmann, M.D.	1988
Donald C. Iverson, Ph.D.	1990	Kenneth E. Warner, Ph.D.	1989

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Director

Dr. Peter Fischinger
Deputy Director

Mr. Philip Amoruso
Associate Director for Administrative Management

Dr. Richard Adamson
Director, Division of Cancer Etiology

Mrs. Barbara Bynum
Director, Division of Extramural Activities

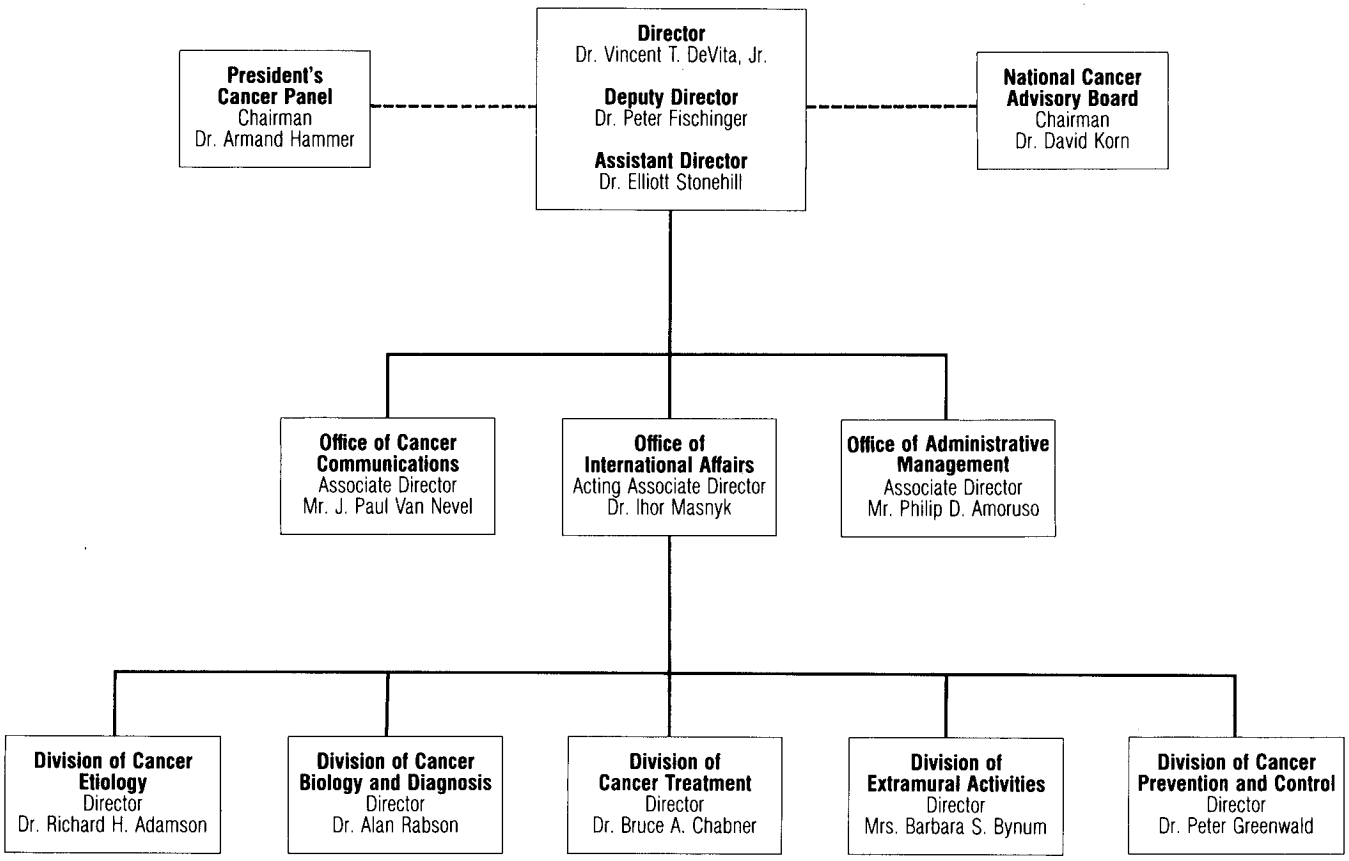
Dr. Bruce Chabner
Director, Division of Cancer Treatment

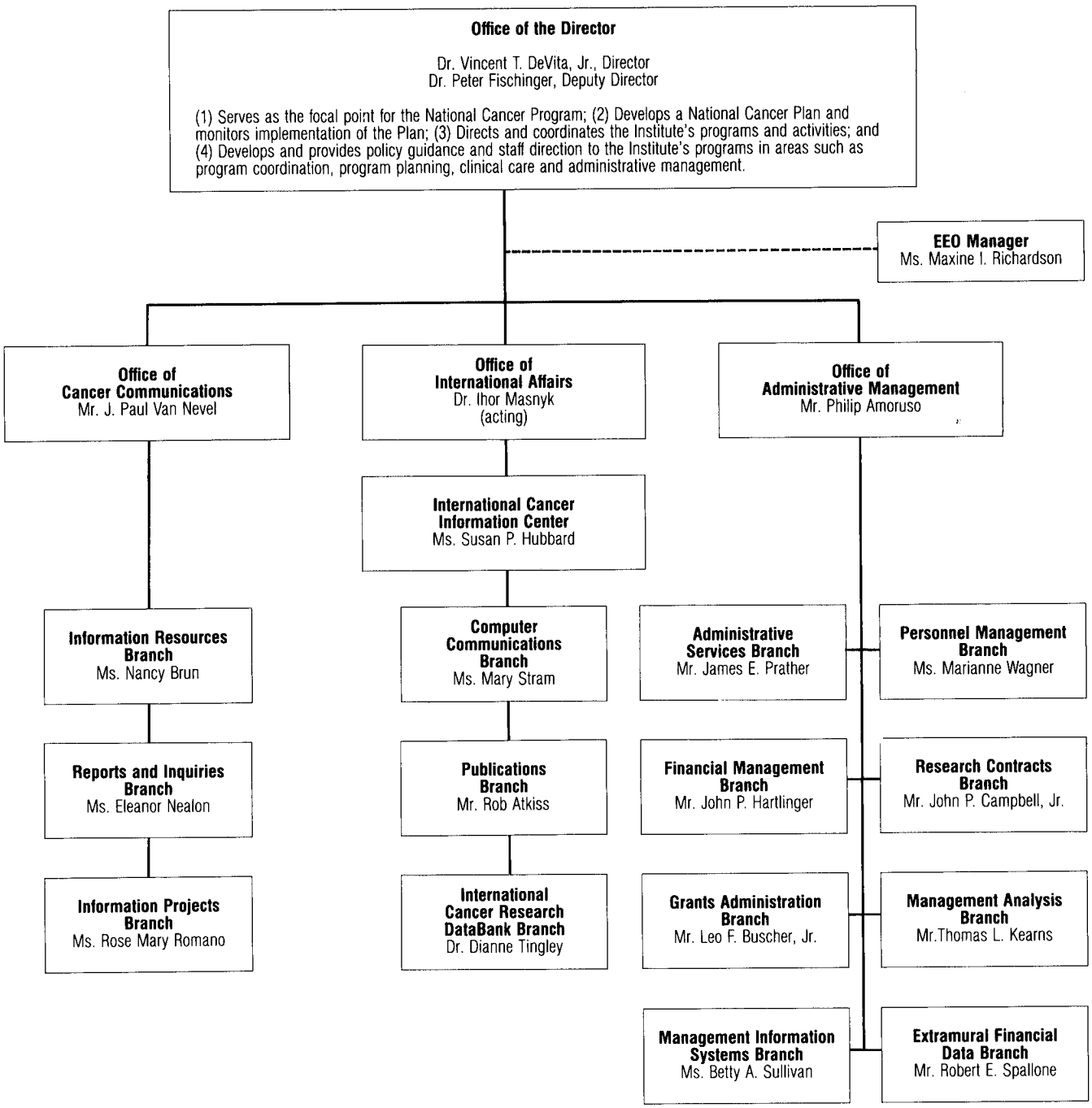
Dr. Peter Greenwald
Director, Division of Cancer Prevention and Control

Dr. Alan Rabson
Director, Division of Cancer Biology and Diagnosis

Ms. Iris Schneider
Executive Secretary

National Cancer Institute
Organization




Office of the Director
Dr. Vincent T. DeVita, Jr., Director
Dr. Peter Fischinger, Deputy Director
(1) Serves as the focal point for the National Cancer Program; (2) Develops a National Cancer Plan and monitors implementation of the Plan; (3) Directs and coordinates the Institute's programs and activities; and (4) Develops and provides policy guidance and staff direction to the Institute's programs in areas such as program coordination, program planning, clinical care and administrative management.
EEO Manager
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Office of Cancer Communications
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Dr. Ihor Masnyk
(acting)
Office of Administrative Management
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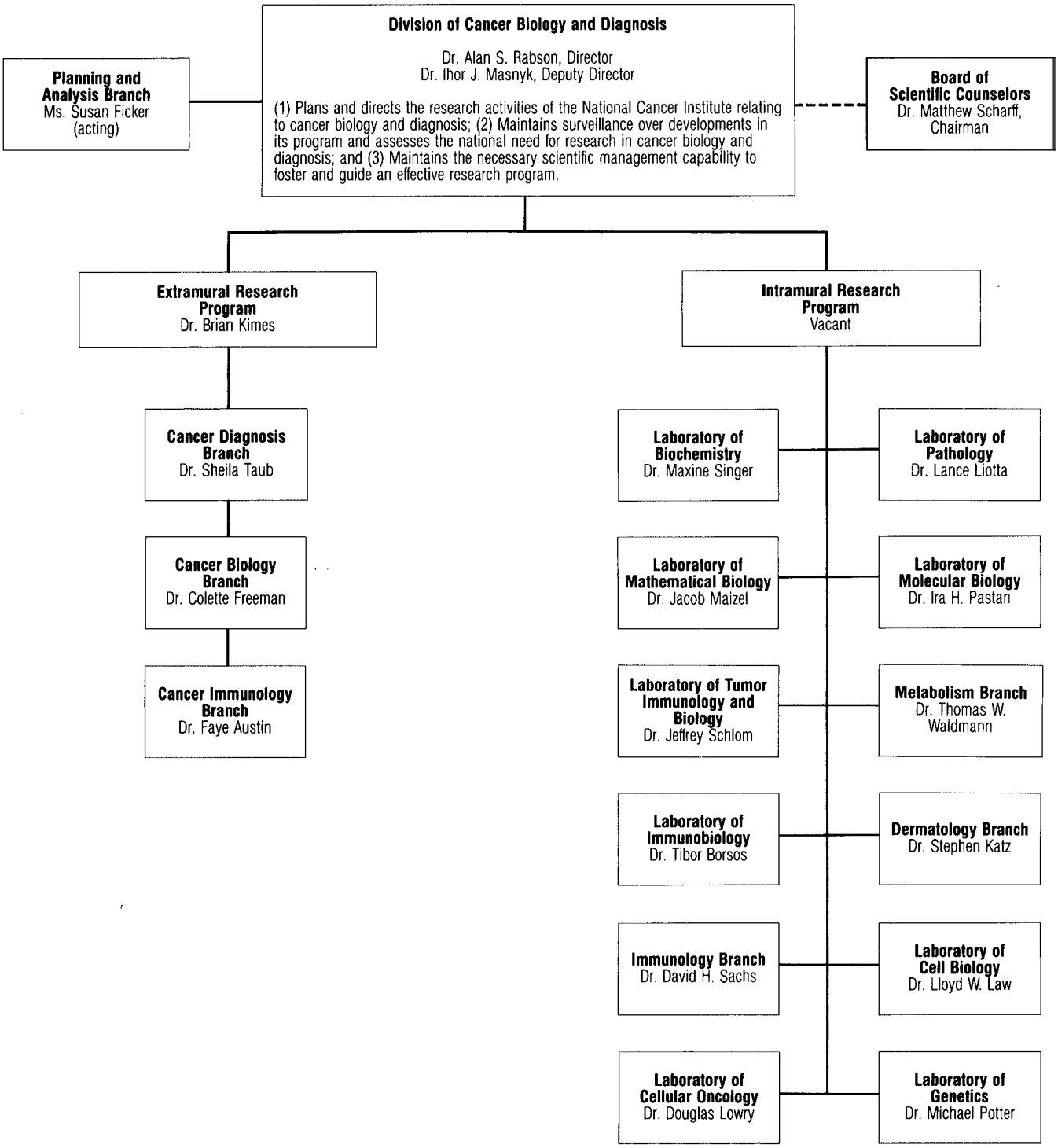
Mr. John P. Campbell, Jr.
Management Analysis Branch
Mr.Thomas L. Kearns
Extramural Financial Data Branch
Mr. Robert E. Spallone


Division of Cancer Biology and Diagnosis
Dr. Alan S. Rabson, Director
Dr. Ihor J. Masnyk, Deputy Director
(1) Plans and directs the research activities of the National Cancer Institute relating to cancer biology and diagnosis; (2) Maintains surveillance over developments in its program and assesses the national need for research in cancer biology and diagnosis; and (3) Maintains the necessary scientific management capability to foster and guide an effective research program.
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Intramural Research Program
Vacant
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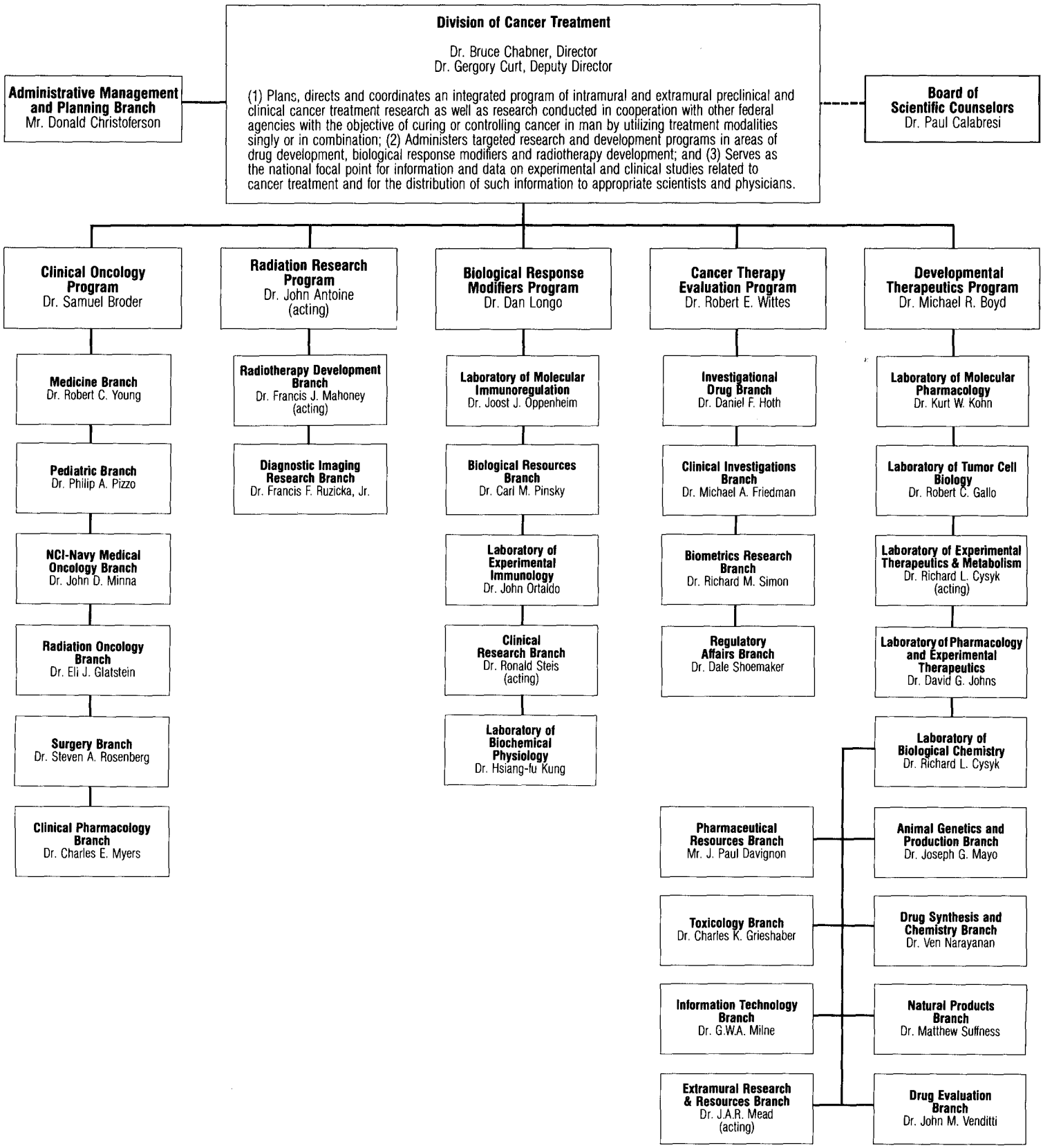
Dr. Michael Potter


Division of Cancer Treatment
Dr. Bruce Chabner, Director
Dr. Gergory Curt, Deputy Director
(1) Plans, directs and coordinates an integrated program of intramural and extramural preclinical and clinical cancer treatment research as well as research conducted in cooperation with other federal agencies with the objective of curing or controlling cancer in man by utilizing treatment modalities singly or in combination; (2) Administers targeted research and development programs in areas of drug development, biological response modifiers and radiotherapy development; and (3) Serves as the national focal point for information and data on experimental and clinical studies related to cancer treatment and for the distribution of such information to appropriate scientists and physicians.
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Pediatric Branch
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NCI-Navy Medical Oncology Branch
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Surgery Branch
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Diagnostic Imaging Research Branch
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Biological Resources Branch
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Laboratory of Experimental Immunology
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Toxicology Branch
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Information Technology Branch
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Extramural Research & Resources Branch
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Laboratory of Molecular Pharmacology
Dr. Kurt W. Kohn
Laboratory of Tumor Cell Biology
Dr. Robert C. Gallo
Laboratory of Experimental Therapeutics & Metabolism
Dr. Richard L. Cysyk (acting)
Laboratory of Pharmacology and Experimental Therapeutics
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Laboratory of Biological Chemistry
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Animal Genetics and Production Branch
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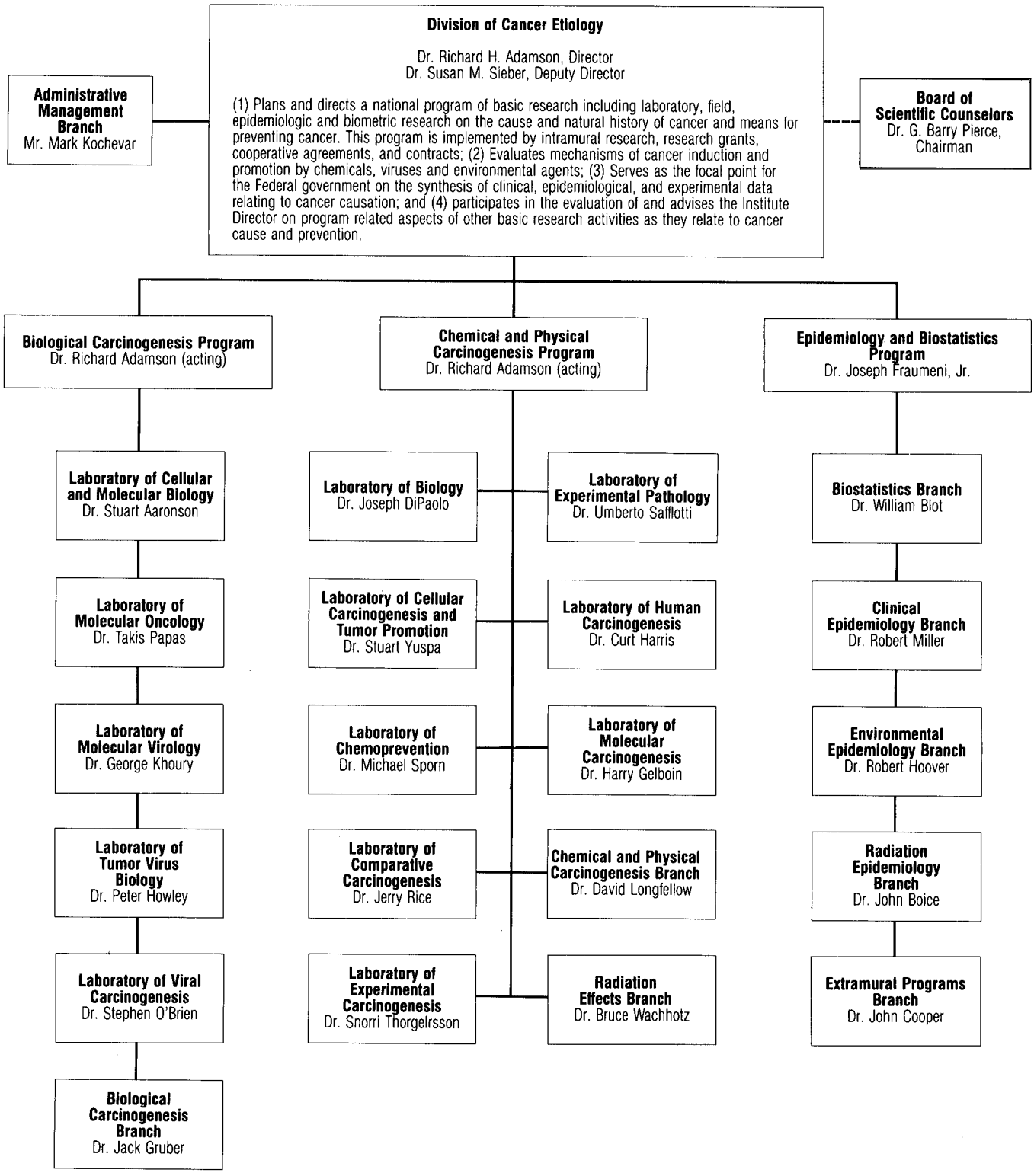
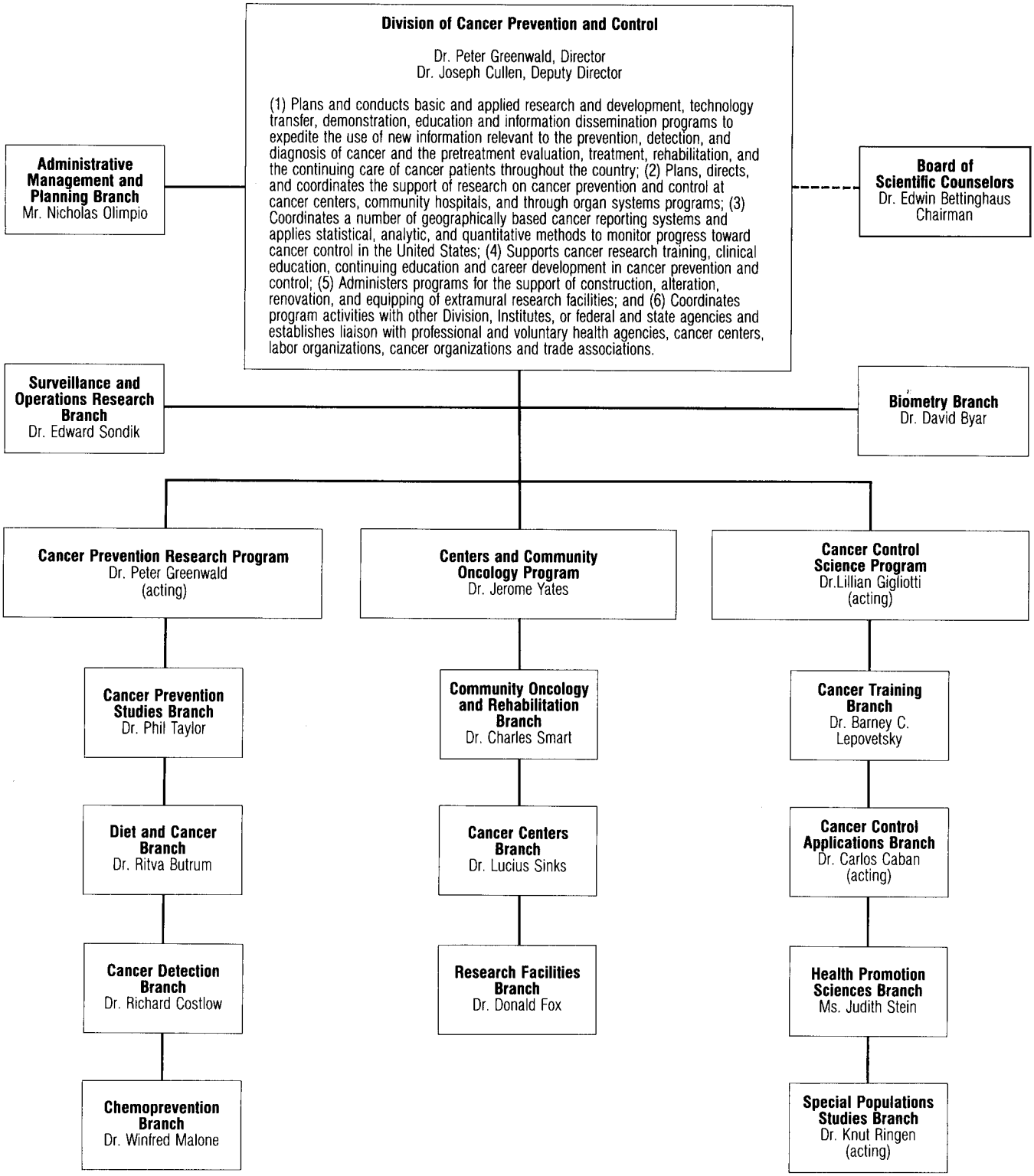
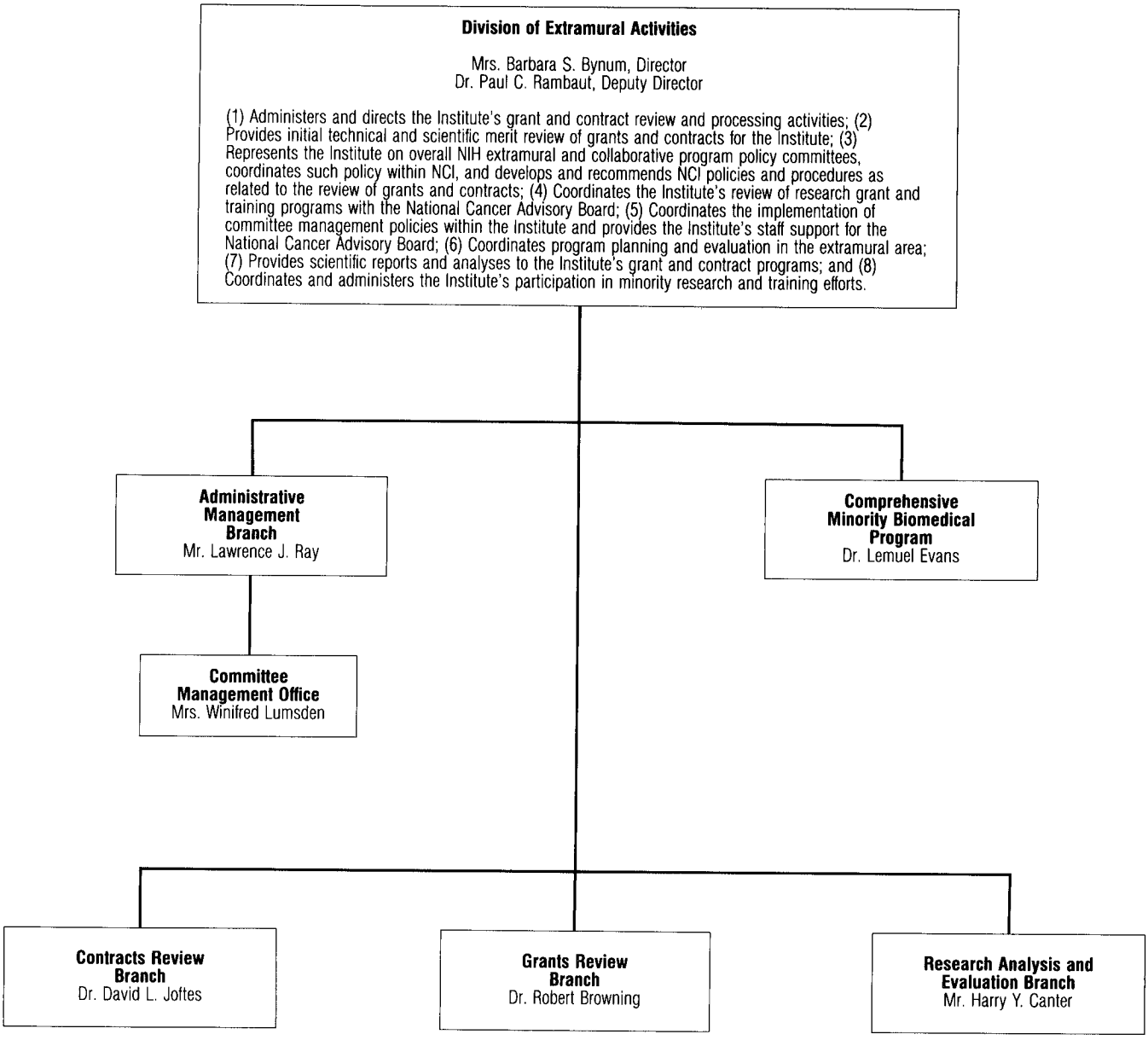
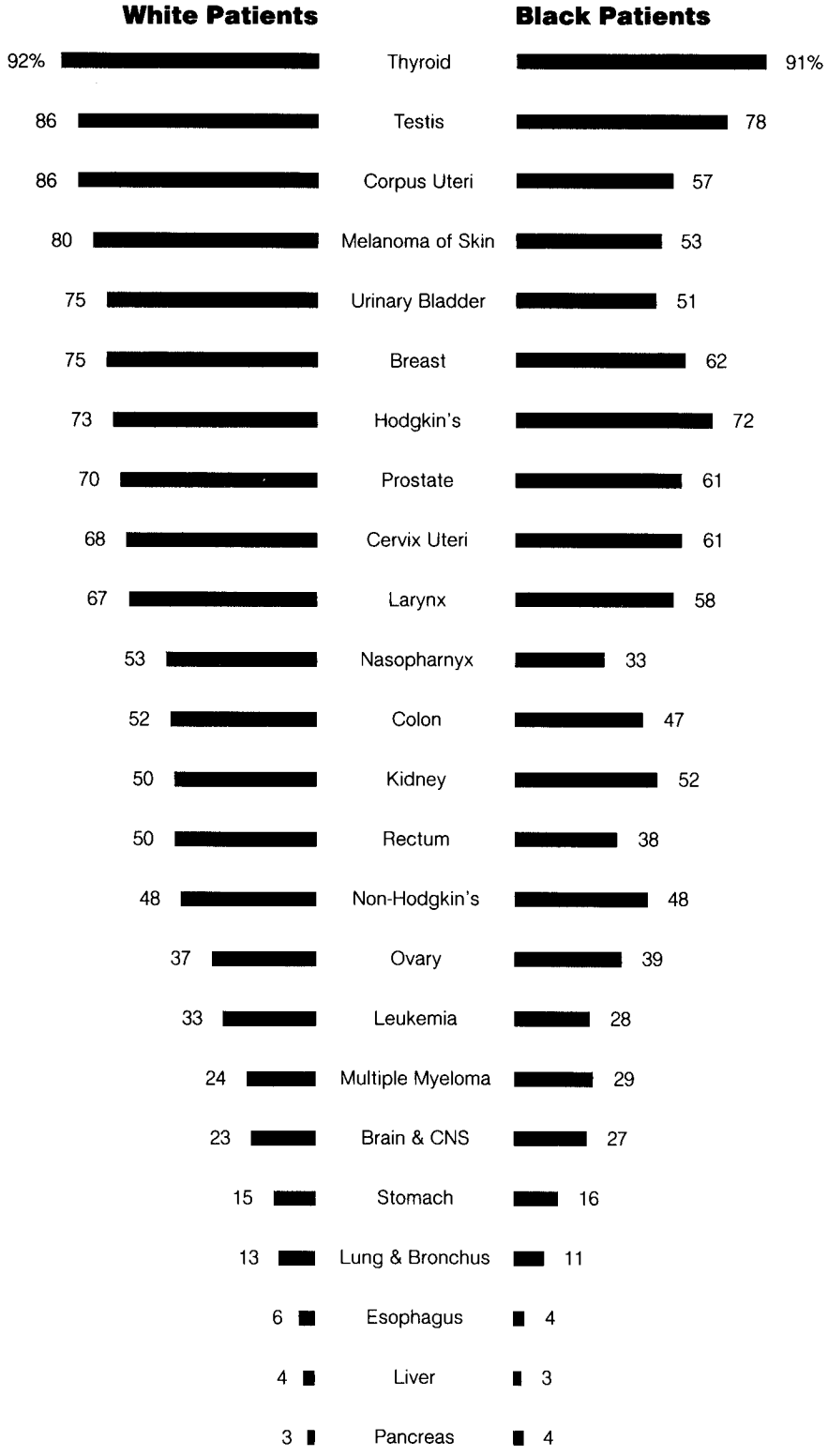
Drug Synthesis and Chemistry Branch
Dr. Ven Narayanan
Natural Products Branch
Dr. Matthew Suffness
Drug Evaluation Branch
Dr. John M. Venditti


Division of Cancer Etiology
Dr. Richard H. Adamson, Director
Dr. Susan M. Sieber, Deputy Director
(1) Plans and directs a national program of basic research including laboratory, field, epidemiologic and biometric research on the cause and natural history of cancer and means for preventing cancer. This program is implemented by intramural research, research grants, cooperative agreements, and contracts; (2) Evaluates mechanisms of cancer induction and promotion by chemicals, viruses and environmental agents; (3) Serves as the focal point for the Federal government on the synthesis of clinical, epidemiological, and experimental data relating to cancer causation; and (4) participates in the evaluation of and advises the Institute Director on program related aspects of other basic research activities as they relate to cancer cause and prevention.
Administrative Management Branch
Mr. Mark Kochevar
Board of Scientific Counselors
Dr. G. Barry Pierce, Chairman
Biological Carcinogenesis Program
Dr. Richard Adamson (acting)
Chemical and Physical Carcinogenesis Program
Dr. Richard Adamson (acting)
Epidemiology and Biostatistics Program
Dr. Joseph Fraumeni, Jr.
Laboratory of Cellular and Molecular Biology
Dr. Stuart Aaronson
Laboratory of Molecular Oncology
Dr. Takis Papas
Laboratory of Molecular Virology
Dr. George Khoury
Laboratory of Tumor Virus Biology
Dr. Peter Howley
Laboratory of Viral Carcinogenesis
Dr. Stephen O'Brien
Biological Carcinogenesis Branch
Dr. Jack Gruber
Laboratory of Biology
Dr. Joseph DiPaolo
Laboratory of Cellular Carcinogenesis and Tumor Promotion
Dr. Stuart Yuspa
Laboratory of Chemoprevention
Dr. Michael Sporn
Laboratory of Comparative Carcinogenesis
Dr. Jerry Rice
Laboratory of Experimental Carcinogenesis
Dr. Snorri Thorgeirsson
Laboratory of Experimental Pathology
Dr. Umberto Saffiotti
Laboratory of Human Carcinogenesis
Dr. Curt Harris
Laboratory of Molecular Carcinogenesis
Dr. Harry Gelboin
Chemical and Physical Carcinogenesis Branch
Dr. David Longfellow
Radiation Effects Branch
Dr. Bruce Wachholz
Biostatistics Branch
Dr. William Blot
Clinical Epidemiology Branch
Dr. Robert Miller
Environmental Epidemiology Branch
Dr. Robert Hoover
Radiation Epidemiology Branch
Dr. John Boice
Extramural Programs Branch
Dr. John Cooper


Division of Cancer Prevention and Control
Dr. Peter Greenwald, Director
Dr. Joseph Cullen, Deputy Director
(1) Plans and conducts basic and applied research and development, technology transfer, demonstration, education and information dissemination programs to expedite the use of new information relevant to the prevention, detection, and diagnosis of cancer and the pretreatment evaluation, treatment, rehabilitation, and the continuing care of cancer patients throughout the country; (2) Plans, directs, and coordinates the support of research on cancer prevention and control at cancer centers, community hospitals, and through organ systems programs; (3) Coordinates a number of geographically based cancer reporting systems and applies statistical, analytic, and quantitative methods to monitor progress toward cancer control in the United States; (4) Supports cancer research training, clinical education, continuing education and career development in cancer prevention and control; (5) Administers programs for the support of construction, alteration, renovation, and equipping of extramural research facilities; and (6) Coordinates program activities with other Division, Institutes, or federal and state agencies and establishes liaison with professional and voluntary health agencies, cancer centers, labor organizations, cancer organizations and trade associations.
Administrative Management and Planning Branch
Mr. Nicholas Olimpio
Board of Scientific Counselors
Dr. Edwin Bettinghaus
Chairman
Surveillance and Operations Research Branch
Dr. Edward Sondik
Biometry Branch
Dr. David Byar
Cancer Prevention Research Program
Dr. Peter Greenwald
(acting)
Centers and Community Oncology Program
Dr. Jerome Yates
Cancer Control Science Program
Dr.Lillian Gigliotti
(acting)
Cancer Prevention Studies Branch
Dr. Phil Taylor
Diet and Cancer Branch
Dr. Ritva Butrum
Cancer Detection Branch
Dr. Richard Costlow
Chemoprevention Branch
Dr. Winfred Malone
Community Oncology and Rehabilitation Branch
Dr. Charles Smart
Cancer Centers Branch
Dr. Lucius Sinks
Research Facilities Branch
Dr. Donald Fox
Cancer Training Branch
Dr. Barney C. Lepovetsky
Cancer Control Applications Branch
Dr. Carlos Caban
(acting)
Health Promotion Sciences Branch
Ms. Judith Stein
Special Populations Studies Branch
Dr. Knut Ringen
(acting)


Division of Extramural Activities
Mrs. Barbara S. Bynum, Director
Dr. Paul C. Rambaut, Deputy Director
(1) Administers and directs the Institute's grant and contract review and processing activities; (2) Provides initial technical and scientific merit review of grants and contracts for the Institute; (3) Represents the Institute on overall NIH extramural and collaborative program policy committees, coordinates such policy within NCI, and develops and recommends NCI policies and procedures as related to the review of grants and contracts; (4) Coordinates the Institute's review of research grant and training programs with the National Cancer Advisory Board; (5) Coordinates the implementation of committee management policies within the Institute and provides the Institute's staff support for the National Cancer Advisory Board; (6) Coordinates program planning and evaluation in the extramural area; (7) Provides scientific reports and analyses to the Institute's grant and contract programs; and (8) Coordinates and administers the Institute's participation in minority research and training efforts.
Administrative Management Branch
Mr. Lawrence J. Ray
Committee Management Office
Mrs. Winifred Lumsden
Comprehensive Minority Biomedical Program
Dr. Lemuel Evans
Contracts Review Branch
Dr. David L. Joftes
Grants Review Branch
Dr. Robert Browning
Research Analysis and Evaluation Branch
Mr. Harry Y. Canter

Survival Rates by Cancer Site:
White and Black Patients



Source: Five-Year Relative Survival Rates (Male and Female) (Data from SEER Program 1974-83)

Number of Deaths for the Five Leading Cancer Sites by Age Group and Sex—1983

All Ages		Under 15		15-34		35-54		55-74		75+	
Male	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Lung 80,235	Breast 37,977	Leukemia 448	Leukemia 332	Leukemia 764	Breast 676	Lung 9,159	Breast 7,770	Lung 51,619	Lung 21,725	Lung 19,296	Colon & Rectum 13,951
Colon & Rectum 27,487	Lung 34,616	Brain & CNS 253	Brain & CNS 201	Brain & CNS 449	Leukemia 473	Colon & Rectum 2,285	Lung 4,965	Colon & Rectum 14,582	Breast 19,432	Prostate 14,398	Breast 10,091
Prostate 24,954	Colon & Rectum 28,500	Endocrine 115	Endocrine 99	Non-Hodgkin's Lymphomas 373	Uterus 318	Brain & CNS 1,157	Colon & Rectum 1,931	Prostate 10,219	Colon & Rectum 12,444	Colon & Rectum 10,413	Lung 7,812
Pancreas 11,239	Pancreas 11,291	Non-Hodgkin's Lymphomas 96	Connective Tissue 48	Melanomas of Skin 301	Brain & CNS 304	Pancreas 1,153	Uterus 1,719	Pancreas 6,660	Ovary 6,235	Pancreas 3,434	Pancreas 5,028
Leukemia 9,425	Ovary 11,213	Connective Tissue 61	Bone 45	Hodgkin's Disease 284	Hodgkin's Disease 217	Leukemia 1,101	Ovary 1,693	Stomach 4,477	Pancreas 5,439	Bladder 3,366	Uterus 3,287

Source: Vital Statistics of the United States, 1983.

Relationship of Cancer to Leading Causes of Death in the United States—1983

Rank	Cause of Death	Number of Deaths	Death Rate per 100,000 Population	Percent of Total Deaths
	All CAUSES	2,019,201	862.8	100.0
1	Diseases of Heart	770,432	329.2	38.2
2	CANCER	442,986	189.3	21.9
3	Stroke	155,598	66.5	7.7
4	Accidents	92,488	39.5	4.6
5	Bronchitis,Emphysema & Asthma	66,246	28.3	3.3
6	Penumonia & Influenza	55,854	23.9	2.8
7	Diabetes Mellitus	36,246	15.5	1.8
8	Suicide	28,295	12.1	1.4
9	Cirrhosis of Liver	27,266	11.7	1.4
10	Arteriosclerosis	26,371	11.3	1.3
11	Homicide	20,191	8.6	1.0
12	Diseases of Infancy	19,310	8.3	1.0
13	Nephritis & Nephrosis	18,998	8.1	0.9
14	Septicemia & Pyemia	13,394	5.7	0.7
15	Congenital Abnormalities	13,173	5.6	0.6
	Other & Ill-defined	232,353	99.2	11.4

Source: National Center for Health Statistics, 1983.

Estimated New Cancer Cases and Deaths by Sex for All Sites—1986*

	Estimated New Cases			Estimated Deaths		
	Total	**Male**	**Female**	**Total**	**Male**	**Female**
All Sites	930,000*	465,000*	465,000*	472,000	253,500	218,500
Buccal Cavity & Pharynx **(ORAL)**	29,500	19,800	9,700	9,400	6,350	3,050
Lip	4,600	4,000	600	175	150	25
Tongue	5,300	3,300	2,000	2,100	1,400	700
Mouth	10,700	6,300	4,400	2,825	1,800	1,025
Pharynx	8,900	6,200	2,700	4,300	3,000	1,300
Digestive Organs	217,800	110,700	107,100	119,700	62,500	57,200
Esophagus	9,300	6,600	2,700	8,800	6,400	2,400
Stomach	24,700	15,000	9,700	14,300	8,400	5,900
Small Intestine	2,200	1,100	1,100	800	400	400
Large Intestine } **(COLON-RECTUM)**	98,000	45,000	53,000	51,800	24,800	27,000
Rectum }	42,000	22,000	20,000	8,200	4,300	3,900
Liver & Biliary Passages	13,600	6,800	6,800	10,600	5,300	5,300
Pancreas	25,500	13,000	12,500	24,000	12,300	11,700
Other & Unspecified Digestive	2,500	1,200	1,300	1,200	600	600
Respiratory System	164,500	112,300	52,200	135,350	93,000	42,350
Larynx	11,700	9,600	2,100	3,800	3,100	700
LUNG	149,000	100,000	49,000	130,100	89,000	41,100
Other & Unspecified Respiratory	3,800	2,700	1,100	1,450	900	550
Bone	2,000	1,100	900	1,400	800	600
Connective Tissue	5,100	2,700	2,400	2,800	1,300	1,500
SKIN	23,000**	12,000**	11,000**	7,500†	4,500	3,000
BREAST	123,900***	900***	123,000***	40,200	300	39,900
Genital Organs	169,800	96,400	73,400	49,400	27,000	22,400
Cervix, Uteri } **(UTERUS)**	14,000***	—	14,000***	6,800	—	6,800
Corpus, Endometrium }	36,000	—	36,000	2,900	—	2,900
Ovary	19,000	—	19,000	11,600	—	11,600
Other & Unspecified Genital, Female	4,400	—	4,400	1,100	—	1,100
Prostate	90,000	90,000	—	26,100	26,100	—
Testis	5,100	5,100	—	500	500	—
Other & Unspecified Genital, Male	1,300	1,300	—	400	400	—
Urinary Organs	60,500	41,700	18,800	19,800	12,800	7,000
Bladder	40,500	29,000	11,500	10,600	7,200	3,400
Kidney & Other Urinary	20,000	12,700	7,300	9,200	5,600	3,600
Eye	1,800	900	900	400	200	200
Brain & Central Nervous System	13,800	7,700	6,100	10,200	5,500	4,700
Endocrine Glands	11,700	3,500	8,200	1,750	750	1,000
Thyroid	10,600	2,900	7,700	1,100	400	700
Other Endocrine	1,100	600	500	650	350	300
Leukemias	25,600	14,000	11,600	17,400	9,600	7,800
Lymphocytic Leukemia	12,300	6,900	5,400	6,600	3,800	2,800
Granulocytic Leukemia	12,600	6,700	5,900	10,400	5,600	4,800
Monocytic Leukemia	700	400	300	400	200	200
Other Blood & Lymph Tissues	44,500	22,800	21,700	23,700	12,300	11,400
Hodgkin's Disease	6,900	3,900	3,000	1,500	900	600
Multiple Myeloma	10,400	5,200	5,200	7,600	3,900	3,700
Other Lymphomas	27,200	13,700	13,500	14,600	7,500	7,100
All Other & Unspecified Sites	36,500	18,500	18,000	33,000	16,600	16,400

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.

** Carcinoma in situ and non-melanoma skin cancers are not included in totals. Carcinoma in situ of the uterine cervix accounts for more than 45,000 new cases annually, and carcinoma in situ of the female breast accounts for more than 5,000 new cases annually. Non-melanoma skin cancer accounts for more than 400,000 new cases annually.*

*** Melanoma only.* **** Invasive cancer only.* *† Melanoma 5,600; other skin 1,900*

INCIDENCE ESTIMATES ARE BASED ON RATES FROM NCI SEER PROGRAM 1977-1981

NCI Intramural Review Process

Step 1 Scheduling and Approval	Step 2 Team Selection	Step 3 Preparation for Site Visit	Step 4 Site Visit	Step 5 Site Visit Report and Recommendations	Step 6 Implementation of Recommendations	Step 7 Follow-up Report
Board of Scientific Counselors						
BSC Approves Site Visit Schedule	Chairman, BSC Selects Site Visit Chairman Site Visit Chairman Selects Site Visit Team	BSC Site Visit Team Reviews Material Prepared by Division	BSC Site Visit Team Inspects and Reviews Laboratory	Site Visit Team Prepares Report and BSC Presents Recommendations to the Division Director		
NCI Divisions						
Division Prepares Proposed Site Visit Schedule		Division Prepares Background Material on Laboratory to be Site Visited and Sends to Site Visit Team	Site Visit Preparation by Laboratory		Division Implements Recommendations Contained in Site Visit Report	Division Prepares Report to BSC on Actions Taken

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. Other special programs are 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.—$37,599 Physicians—$50,822 Maximum: $68,700	Office of Personnel Management, Contact Director or Laboratory Chief in area of interest or the NCI Personnel Office.
II. Special Appointment of Experts and Consultants			
A. Special Appointment of Experts and Consultants (non-tenured appointment which can be extended up to 4 years).	Applicants shall possess outstanding experience and ability as to justify recognition as authorities in their particular fields of activity.	Equivalent to the salary range of GS-13 and above—Maximum $68,700	Recommendation by Division Directors. Final approval rests with the Director, NCI.
III. Medical Staff Fellows			
A. Medical Staff Fellows	Appointment for 2 or 3 years with an additional 1-year extension for an initial 2-year appointment. Graduate of accredited medical or osteopathic school and completion of internship. Completion of 2 or 3 years of clinical training beyond the M.D. degree and demonstrated outstanding ability to conduct successfully, preestablished programs in both clinical and laboratory research.	$30,000-$34,000	Apply to the Medical Staff Fellowship Program Office, National Institutes of Health, Clinical Center, Building 10, Room 2N226, Bethesda, MD 20892
B. Medical Staff Fellows in Pharmacology (PRAT Fellows). For physicians committed to research careers in pharmacological sciences, or clinical pharmacology.	Appointment for 2 or 3 years with an additional 1-year extension for an initial 2-year appointment. Graduate of accredited medical or osteopathic school and completion of internship. Completion of 2 or 3 years of clinical training beyond the M.D. degree and demonstrated outstanding ability to conduct successfully, preestablished programs in both clinical and laboratory research.	$30,000-$34,000	Apply to the Medical Staff Fellowship Program Office, National Institutes of Health, Clinical Center, Building 10, Room 2N226, Bethesda, MD 20892
IV. Visiting Program (limited tenure)[2]			
A. Visiting Fellow (maximum 3 years)	1-3 years postdoctoral experience or training.	Entrance stipend $16,000-18,000	Contact Director or Laboratory Chief in area of interest.
B. Visiting Associate (1 year with renewals to end of project)	3+ years postdoctoral experience or training with appropriate knowledge needed by NCI.	$21,804-$41,105	Contact Director or Laboratory Chief in area of interest.
C. Visiting Scientist (duration of project)	6+ years postdoctoral experience with appropriate unusual experience and knowledge needed.	$31,619-$68,700	Contact Director or Laboratory Chief in area of interest.
B. Biotechnology Fellow	Physicians with little or no experience or training in fundamental research, but with an interest in biotechnology including its application to prevention and new treatment and diagnostic techniques, would be eligible.	First year Ph.D.—$18,000 to $28,000 Physicians—$26,000 to $32,000	Contact Division Director or Laboratory Chief in area of interest.

(continued on next page)

[1]*Does not necessarily indicate that positions are currently available at the National Cancer Institute.*
[2]*Under most circumstances, the various visiting programs are limited to non-citizens.*

Position	Eligibility	Annual Salary	Mechanism of Entry
IV. Visiting Program (limited tenure)[2]			
(continued)	Ph.D. scientists with little or no experience or training in clinically related programs, but with an interest in clinical applications of fundamental research methodology related to biotechnology would also be eligible. Typically, these candidates will have less than three years post-doctoral experience. The Biotechnology Training Program is established for United States citizens, or resident aliens who will be eligible for U.S. citizenship within four years.		
C. Nurse Trainee	Applications will be accepted from graduates of NLN accredited baccalaureate nursing programs. Each candidate must submit academic transcripts demonstrating a minimum of a "B" average in undergraduate work, three references regarding their academic and clinical capability, a letter describing their interest in the program, and a Personal Qualification Statement, SF-171. The program is also available to all new graduate applicants to the Cancer Nursing Service; some may not be aware of the program prior to their contact with Clinical Center.	Stipends for the program will be $1,300 per month.	Contact the Division of Cancer Treatment.
D. Summer Training Program	The review and selection of candidates, as well as the day-to-day administration of the fellowships, will be the responsibility of each Division's Administrative Office. Must be bona-fide high school, college, medical school, or graduate students. Must be 16 years of age, must have a cumulative GPA of 2.75 or above, must be either a U.S. Citizen or resident alien.	Stipends will be paid at the rate of $1,000 per month ($2,000 total) for a period of 2 months.	Contact Division Director or Laboratory Chief in area of interest.
E. Special Volunteer Program	Volunteer service may be accepted for direct patient care, clerical assignments, technical assistance, or any other activities necessary to carry out the authorized functions of the NCI. Applicants must be at least 16 years of age.	N/A	Contact the NCI Personnel Office.
V. Staff Fellowships			
A. Staff Fellowship	Physician or other doctoral degree equivalent awarded within last 5 years and who has less than 7 years of relevant research experience, U.S. citizen or non-citizen eligible for naturalization within 4 years. Maximum 7 year appointment.	Staff Fellows Physicians $20,688-$34,312 Other Doctorates $17,000-$36,889 Senior Staff Fellows Physicians $23,439-$47,788 Other Doctorates $20,688-$41,358	Contact Director or Laboratory Chief in area of interest or the NCI Personnel Office.
VI. Civil Service Summer Employment Programs			
A. Summer Clerical Program	Must be 18 years of age or older (16 if high school graduate).	GS-1 through GS-4 Grade is based on education and/or experience.	Apply to NIH on or before March 15.
B. Summer Undergraduate Program	Students majoring in biological and/or physical sciences or related field, or applicants with appropriate experience.	GS-1 through GS-4 Grade is based on education and/or experience.	Apply to NIH by March 15.

Position	Eligibility	Annual Salary	Mechanism of Entry
C. Summer Graduate Program	College graduate, graduate student, planning to attend graduate school, faculty member, or equivalent experience and/or education.	GS-5 through GS-12 For some occupations superior scholastic work may qualify for a higher grade level.	Apply to NIH by March 15.
D. Summer Employment for Needy Youth	Educationally and economically disadvantaged youths in their formative years (must have reached 16th birthday).	Federal minimum wage.	Register with the local office of the State Employment service and apply to NIH.
E. Stay-in-School Program	Economically disadvantaged students who are attending accredited schools on a full-time or substantially full-time basis, and are in good academic standing. (Must have reached 16th birthday)	Salary is commensurate with duties assigned and student's education and/or experience.	Apply to NIH. No deadline required for applying. However, no new appointments are made between May 1 to August 30.
F. The Federal Junior Fellowship Program	Graduating high school senior in a public or private school in the Metro. Wash., D.C. area. Must be in upper 10% of graduating class, have applied for admission to an accredited college or university and need financial assistance to attend school.	GS-1 through GS-4	Nominations are submitted directly to the Office of Personnel Management by high school principals or counselors.
VII. Special Programs			
A. Guest Researcher sponsored by organization other than NIH, PHS.	Determined by sponsoring organization.	Established by sponsoring organization.	Contact 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.
B. COSTEP Program (operates year-round) Maximum 120 days per 12-month period.	U.S. Citizen. Must have completed one year of study in a medical, dental or veterinary school; or a minimum of two years of baccalaureate program in a health-related field such as engineering, nursing, pharmacy, etc. May be enrolled in a master's or doctoral program in a health-related field (designated by the Assistant Secretary for Health). Physical requirements of PHS Commissioned Corps. Plans to return to college.	Pay and allowance of a Junior Assistant Health Service Officer.	Apply to COSTEP, Commissioned Personnel Operations Division, Parklawn Building, 5600 Fishers Lane, Rockville, MD 20857
C. Fogarty International Scholars in Residence Program.	International reputation, productivity, demonstrated ability in biomedical field.	$60,000 for 1 year.	Recommendation to Fogarty Center by Institute Director or any senior tenured member of the NIH scientific staff.
VIII. Other Training Programs			
A. Cancer Control Science Associates (Three-year non-tenured Civil Service Position)	1) M.D./D.O., or accredited doctoral degree in an allied or public health profession, biomedical behavioral, or social science, or equivalent; 2) academic professional excellence supported by official transcripts; and four letters of reference; and 3) United States citizenship or meet one of the provisions which allow for the hiring of non-U.S. citizens. Information regarding the hiring of non-citizens may be obtained by calling the NCI Personnel Office.	First year for an M.D./D.O. or Ph.D. —$31,044 or $26,381 per annum respectively.	Program Coordinator, CCSAP NIH/NCI/DCPC/CCAB, Blair Building, Room 4A01, Bethesda, Maryland 20892.

Special Training Mechanisms: Fiscal Year 1985

Biotechnology Training Program

Why Needed:

- To provide training in fundamental sciences and clinical disciplines for physicians and Ph.D. scientists.
- To enhance cancer clinical programs through the rapid transfer and application of new techniques and fundamental knowledge leading to state-of-the-art prevention, diagnosis and treatment of cancer.
- To maintain a significant level of support for training in those disciplines related to biotechnology.

Program Provisions:

- Training assignments in modern biotechnology will emphasize the application of recombinant DNA and hybridoma technology to cancer clinical programs; emphasis also is in the areas of nutrition, clinical pharmacology, viral oncology, and biochemical and clinical epidemiology as clinical disciplines.
- The program is supervised by the Senior Scientific Coordinating Committee (the Executive Committee is currently serving in this role).
- Each candidate will have a training plan. Candidates and training plans will be approved by the Division Director and SSCC.
- Fellowships are from six months to two years, with the potential for an extension of up to a maximum of three years.
- Fellowships are not subject to employment ceilings and there are no service/payback provisions.
- The program is limited to citizens or resident aliens eligible for citizenship.
- Candidates may apply to the NCI laboratory or branch that offers a program that best meets their training needs.

Cancer Prevention Fellowship Program

Why Needed:

- To increase the number of scientists highly qualified to conduct cancer prevention and control intervention research in order to fully realize the potential for major reductions in cancer rates. This in keeping with NCI's year 2000 goal.

Program Provisions:

- Allows for doctoral level scientists from a variety of academic disciplines to be exposed to a number of educational experiences in cancer prevention and control.
- Fellows spend the first four months of their three-year program in an academic course that covers all aspects of cancer prevention and control. For the next 20 months participants are assigned to one of the Division's operational branches where they engage in specific research projects and also receive exposure to the daily management and administration of federal research programs. For the last 12 months, Fellows are assigned to a field research project at either a cancer center, major NCI research grantee/contractor, or a public health department.
- Interested candidates may apply to Ms. Nancy Gardner, Division of Cancer Prevention and Control.

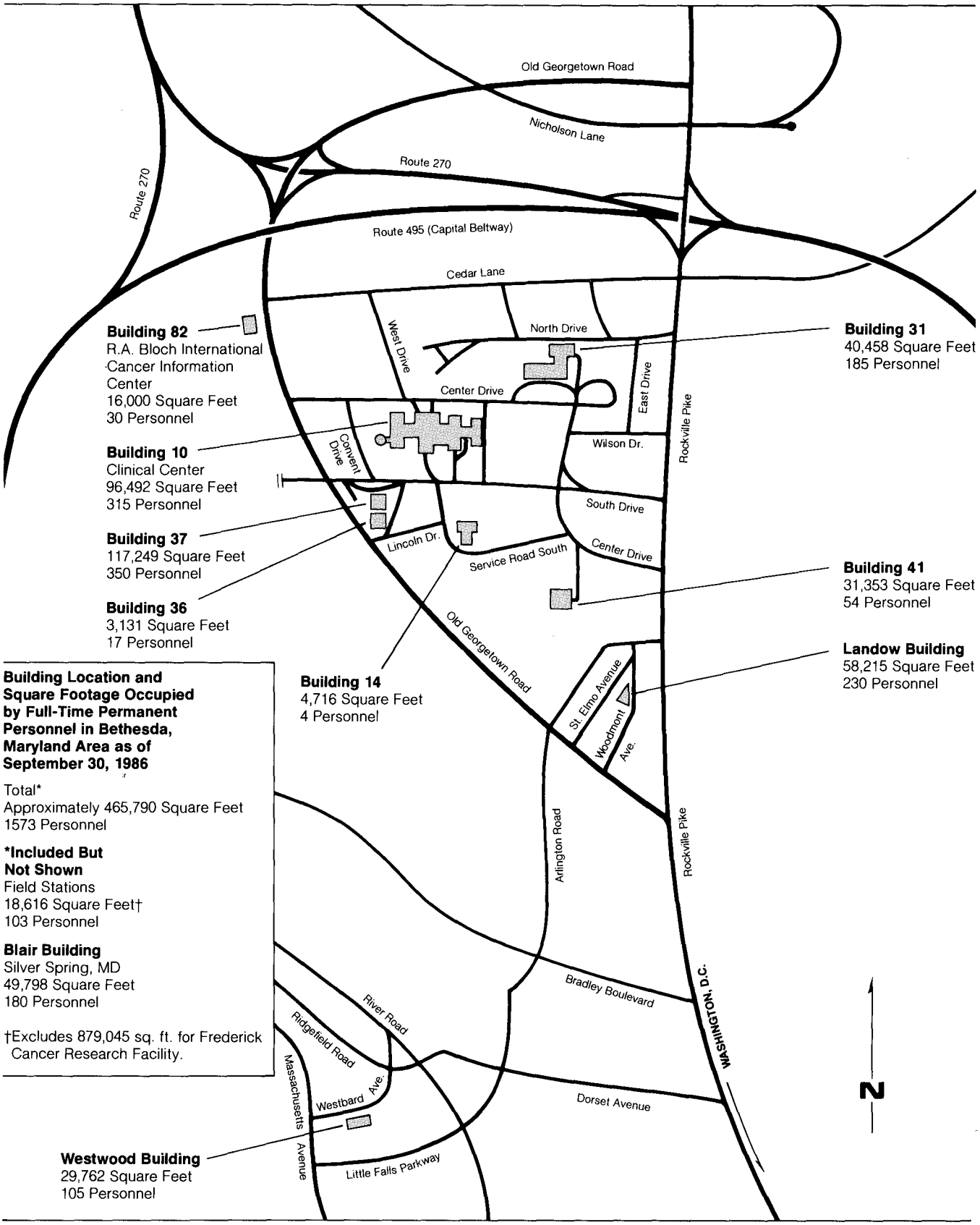
Cancer Nurse Training Program

Why Needed:

- To offer a comprehensive perspective on current oncology practice and its implications in nursing.
- To meet the special needs of cancer patients and their families which demand a high level of nursing practices in meeting both the physical and psychological requirements of the patients.

Program Provisions:

- The program is offered as a clinical traineeship in oncology to new nursing graduates.
- Traineeeships are nine months in duration emphasizing both theoretical and practical aspects of cancer nursing and including classroom instruction as well as on-the-job training.
- The program is planning on a class of 12 to 16 trainees beginning each September.
- The curriculum will cover philosophy of cancer nursing, pathophysiology of cancer, epidemiology, diagnosis and staging, prevention/detection, psychosocial needs of the cancer patient and family, the child with cancer, current treatment modalities, specific cancers/major sites/current research, cancer nursing research, and issues in cancer care such as ambulatory care, use of current technology, aging, ethical dilemmas, costs of care, and hospice program.
- Candidates may apply to the Nurse Recruiter, Department of Nursing and will be reviewed and selected by a Candidate Selection Committee. Final approval is by the Director, DCT.



Building Location and Square Footage Occupied by Full-Time Permanent Personnel in Bethesda, Maryland Area as of September 30, 1986

Total*
Approximately 465,790 Square Feet
1573 Personnel

***Included But Not Shown**
Field Stations
18,616 Square Feet†
103 Personnel

Blair Building
Silver Spring, MD
49,798 Square Feet
180 Personnel

†Excludes 879,045 sq. ft. for Frederick Cancer Research Facility.

Cancer Research Gift Fund

The National Cancer Institute receives donations from the general public in support of its research mission through the Gift Fund. Originally authorized by the National Cancer Act of 1971, this authority was again renewed under the auspices of the Health Research Extension Act of 1985. Contributions to the NCI Gift Fund are used for a variety of worthwhile projects. Examples include special training fellowships for young scientists, the purchase of laboratory equipment, workshops and conferences on cancer research, and the publication of pamphlets about cancer for distribution to the general public. Recently, the Institute received donations that will be used in support of the following projects:

Breast Cancer Study Group

In 1986, Mr. Leonard Abramson, the President of United States Health Care Systems, Inc., Blue Bell, Pennsylvania, donated funds to support breast cancer research. As a result of this donation, a confederation of outstanding researchers has been formed under the leadership of Dr. Marc Lippman, Head of the Breast Cancer Section, NCI.

The Breast Cancer Study Group is comprised of physicians and scientists from within the National Institutes of Health and will focus its attention on bringing some of the exciting new work in breast cancer research from the level of molecular biology to testing in clinical trials and, if proven beneficial, to eventual widespread application as new treatment methodology.

Adoptive Immunotherapy

Dr. Armand Hammer, Chief Executive Officer, Occidental Petroluem Corporation, has donated funds in support of the research efforts of Dr. Steven Rosenberg, the Chief of the Surgery Branch, NCI. The donation will aid in supporting investigations into a new form of treatment called adoptive immunotherapy. This technique uses the patients' own white blood cells that have been treated with the growth factor Interleukin 2 (IL-2) to transform then into Lymphokine Activated Killer (LAK) cells. Cells are then transfused back into the patient along with additional doses of IL-2.

Adoptive immunotherapy has shown activity against drug resistant cancers of the kidney, malignant melanoma, and colon cancer. In addition, it has also been discovered that when white blood cells are isolated directly from patient tumor specimens, these so-called "tumor infiltrating lymphocytes" are up to 100 times more effective at specifically killing cancer cells than those taken from the patients' peripheral blood. These research findings represent an entirely new approach to cancer treatment and will continue to be actively pursued.

Major Steps in the Budget Formulation Review Process

	January	February	March	April	May	June	July	August	September	October	November	December
NCI STAFF[1]	NCI Director's Meeting—establish budget policy for upcoming fiscal year; review operating plans for current fiscal year Submit Congressional Justification for next fiscal year		Formulation of Preliminary Budget for two years in the future for both the By-Pass budget, which is submitted directly to the President, and the budget submitted within the Administration's guidelines Congressional testimony by Director, NCI			NCI Director's Meeting—establish specific division levels for upcoming fiscal year		Formulation of By-Pass Budget Formulation of budget within Administration guidelines		Formulation of President's Budget		
NCAB[2]					Review and revise Preliminary Budget for two fiscal years in future				Review By-Pass Budget Submitted Directly to President		Division presentations of program activity for fiscal year just completed	
BSC[3]	Review operating plans for current fiscal year and policies from NCI Director's Meeting					Review and advise on implementation of divisional programs			Annual Division Budget Review current and upcoming year			

[1]*Executive Committee and key administrative staff*
[2]*National Cancer Advisory Board—presidential appointees*
[3]*Board of Scientific Counselors—outside NCI peer review bodies for each of four operating divisions*

A. Actual Obligations Resulting From Appropriated Funds

FY 1986 Appropriation	$1,258,159
Plus:	
• Grants Carried Forward from FY 1985	3,714
• St. George, Utah, Screening Clinic (2nd and final year of current authority)	3,000
• Cancer Centers Supplement	6,000
Less:	
• Administrative Reduction	−922
• Consultant Services Reduction	−1,090
• Transfer to Departmental Management for Mary Babb Randolph Cancer Center	−4,500
• Gramm-Rudman Sequestration	−53,868
• Lapse	−209
Subtotal, Actual NCI Obligations	$1,210,284

B. Reimbursible Obligations

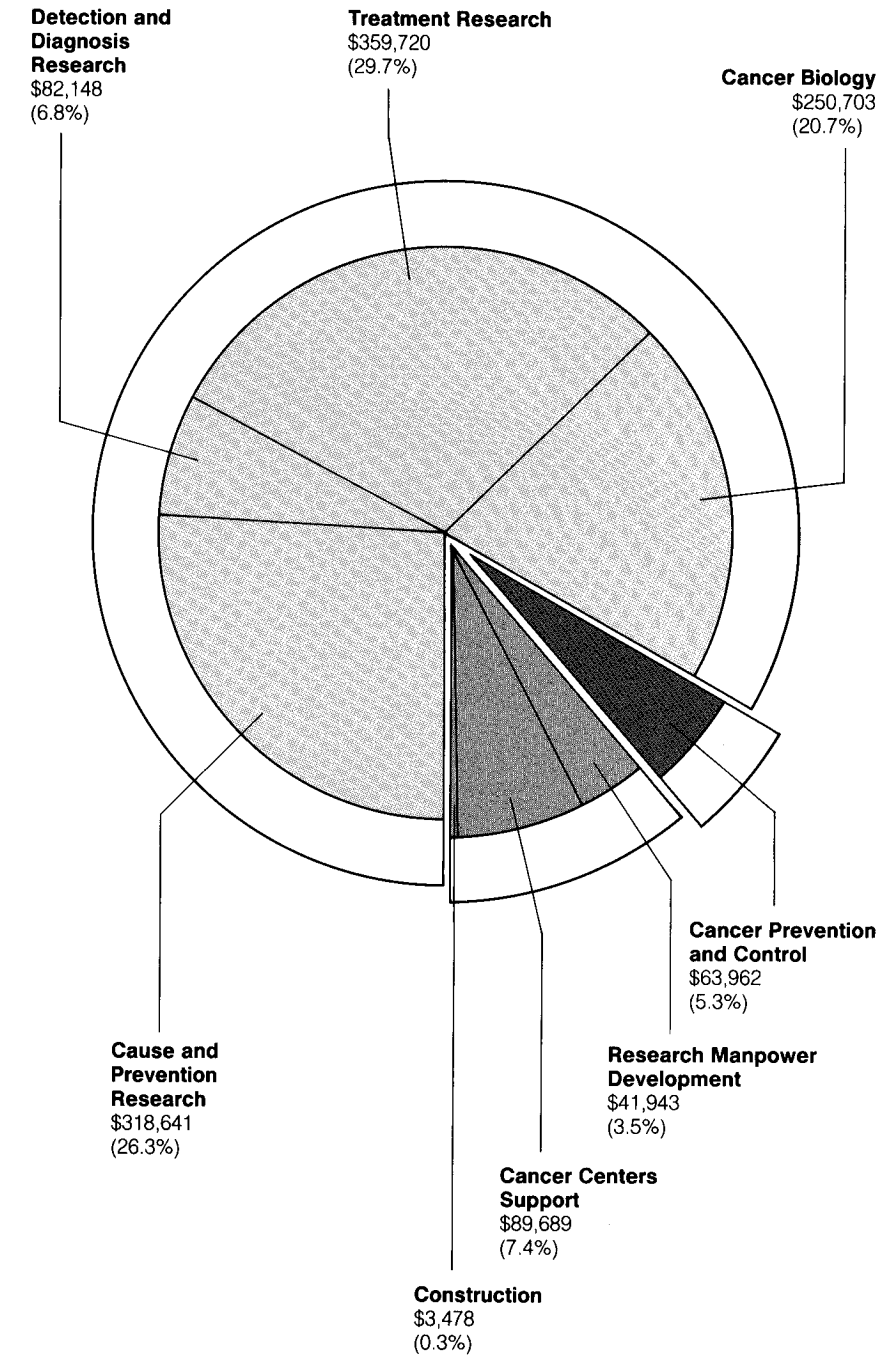
Major Components:	
• Acquired Immune Deficiency Syndrome (AIDS)	
Source of Funds:	
Office of the Director, NIH	$17,832
Department of the Army	860
• Academic Research Enhancements Award From Office of Director, NIH	1,129
Other Reimbursements	1,155
Subtotal, Reimbursements	$20,976

C. Total Obligations **$1,231,260**

NCI Program Structure —Fiscal Year 1986

(Dollars in Thousands)

TOTAL DOLLARS
$1,210,284

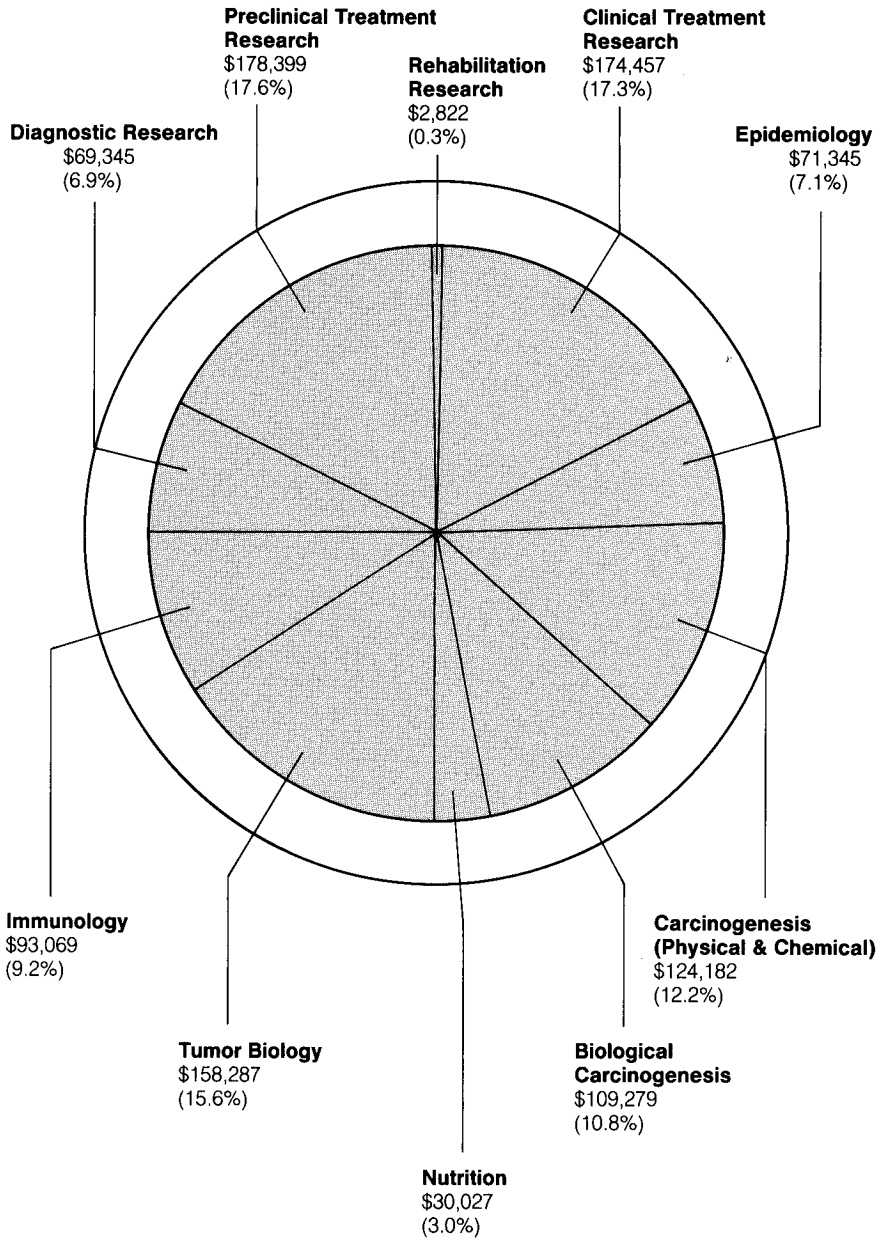


NCI Research Programs —Fiscal Year 1986

(Dollars in Thousands)

TOTAL RESEARCH PROGRAM DOLLARS
$1,011,212

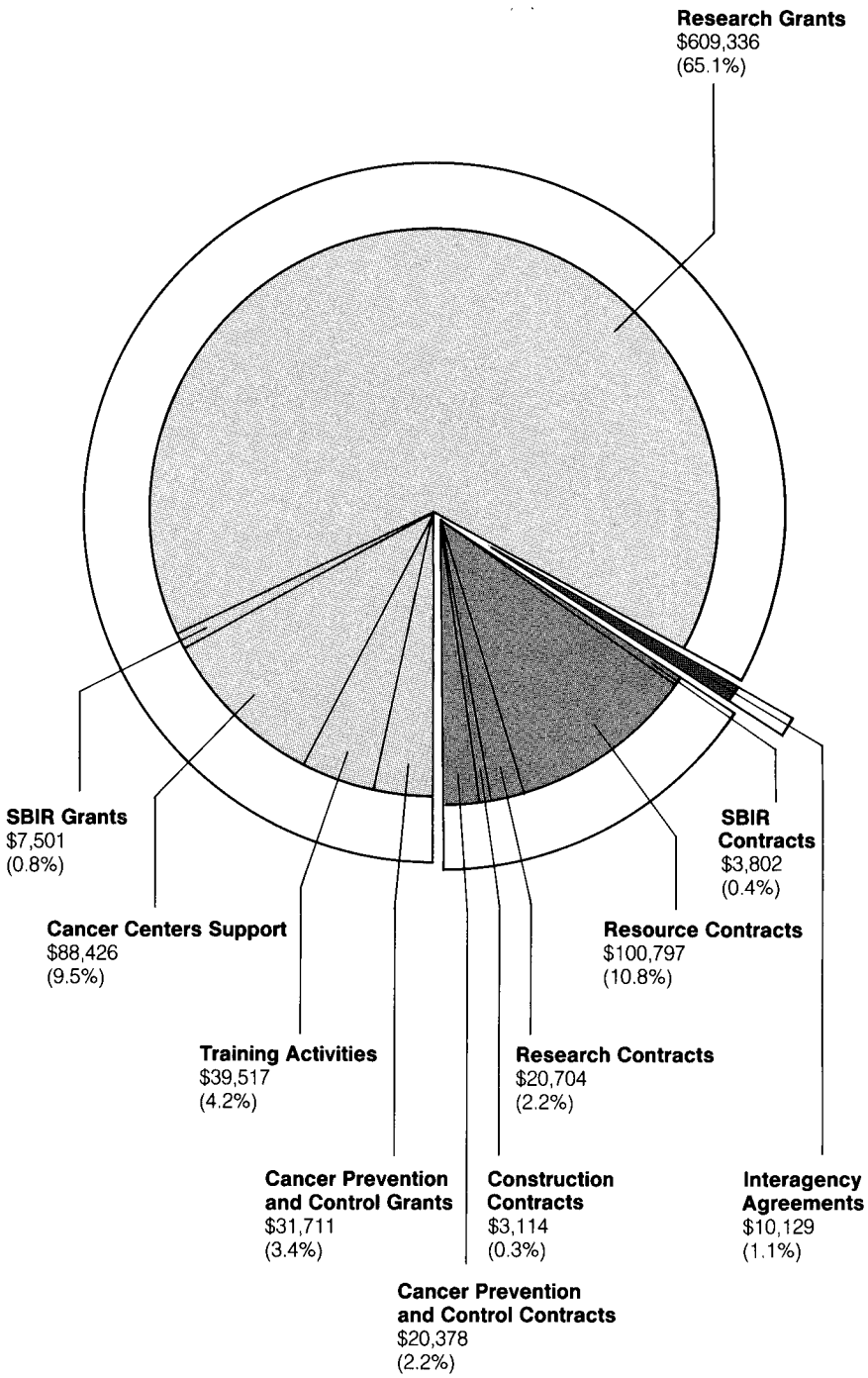
		Percent of Total
Research Programs	$1,011,212	83.5
Resource Development		
Cancer Centers Support	89,689	7.4
Research Manpower Development	41,943	3.5
Construction	3,478	0.3
Cancer Prevention and Control	63,962	5.3
Total NCI	$1,210,284	100.0



NCI Extramural Funds—Fiscal Year 1986

(Dollars in Thousands)

TOTAL EXTRAMURAL
$935,415



TOTAL INTRAMURAL
(NOT SHOWN) $274,869
TOTAL NCI $1,210,284

GRANTS $776,491 (83.0%)

CONTRACTS $148,795 (15.9%)

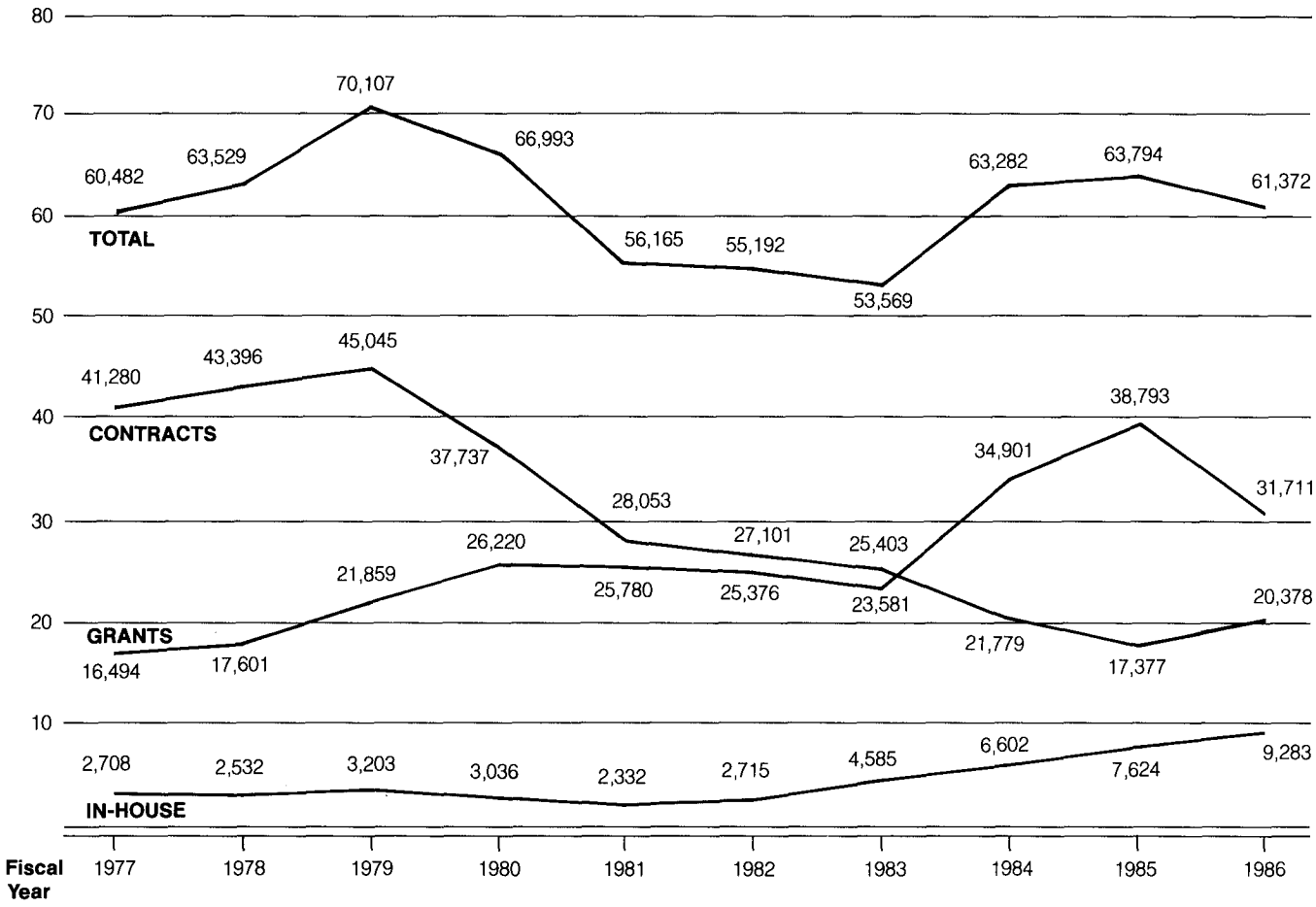
INTERAGENCY AGREEMENTS $10,129 (1.1%)

Total NCI Dollars by Mechanisms—Fiscal Year 1986

Amount	Mechanism	Percent of Total
Research Project Grants		
$355,862	Traditional	29.4
6,705	Young Investigators	0.6
12,557	RFA's	1.0
138,542	Program Projects	11.5
9,235	Coop Agreements	0.8
7,501	SBIR Grants	0.6
23,248	Outstanding Investigator	1.9
5,200	Merit Awards	0.4
310	Minority Supplements	0.0
559,160	Total	46.2
Cancer Centers Grants		
88,426	Center Core Grants	7.3
Other Research Grants		
3,368	Scientific Evaluation	0.3
457	Conference Grants	0.0
6,593	Research Career Programs	0.5
3,412	Clinical Education Program	0.3
49,338	Clinical Cooperative Groups	4.1
852	National Organ Systems Program	0.1
3,197	Comp. Min. Bio. Supp. Prog.	0.3
278	Surgical Oncology	0.0
187	Small Grants	0.0
67,682	Total	5.6
Training Program		
3,917	NRSA Individual	0.3
25,595	NRSA Institutional	2.1
29,512	Total	2.4
Research and Development Contracts		
$131,630	Research and Resource Contracts	10.9
3,802	SBIR Contracts	0.3
135,432	Total	11.2
Cancer Prevention and Control		
31,711	Cancer Control Grants	2.6
20,378	Cancer Control Contracts	1.7
9,283	Cancer Control Inhouse	0.8
61,372	Total	5.1
Construction		
3,114	Construction Contracts	0.3
Inhouse		
208.805	Intramural Research	17.2
56,781	Research Management and Support	4.7
265,586	Total	21.9
Total		
$1,210,284		100.0%

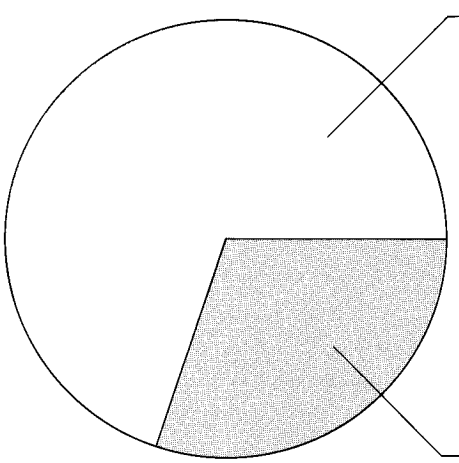
Cancer Prevention and Control Obligations by Mechanism—Fiscal Year 1977-1986

(Dollars in Thousands)



Reimbursement to NIH Management Fund— Fiscal Year 1986

TOTAL NIH SERVICES
$231,800



DISTRIBUTION OF NCI SERVICES $69,882

Standard Level User Charges (SLUC)
$2,156 (3.1%)
Building usage including utilities
Major renovations
Guard services for rental buildings

Other Research Services $15,595 (22.3%)
Procurement Services
Safety Services
Engineering Services
Biomedical Engineering Services
Veterinary Resources Services
Library Services

Division of Research Grants $3,588 (5.1%)
Initial Scientific Review of Applications
Assignment of Research Grant Applications
Among Institutes

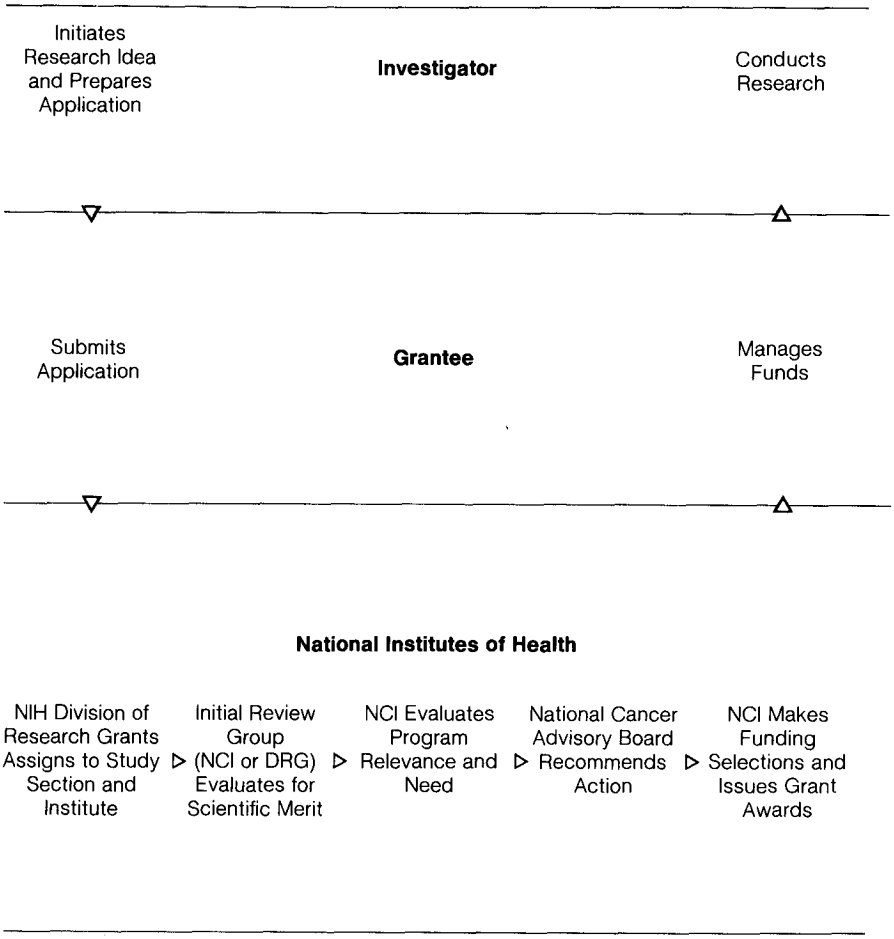
Clinical Center $45,280 (64.8%)
Employee Health Services
Service Functions
Social Work
Professional Services
- Consultative Services
- Admissions and Follow-up
- Anesthesiology
- Diagnostic X-Ray
- Nuclear Medicine
- Clinical Pathology
- Blood Bank
- Rehabilitation Service
- Pharmacy Service
- Medical Records

Nursing Service
Patient Nutrition Service
Environmental Sanitation Control
Laundry

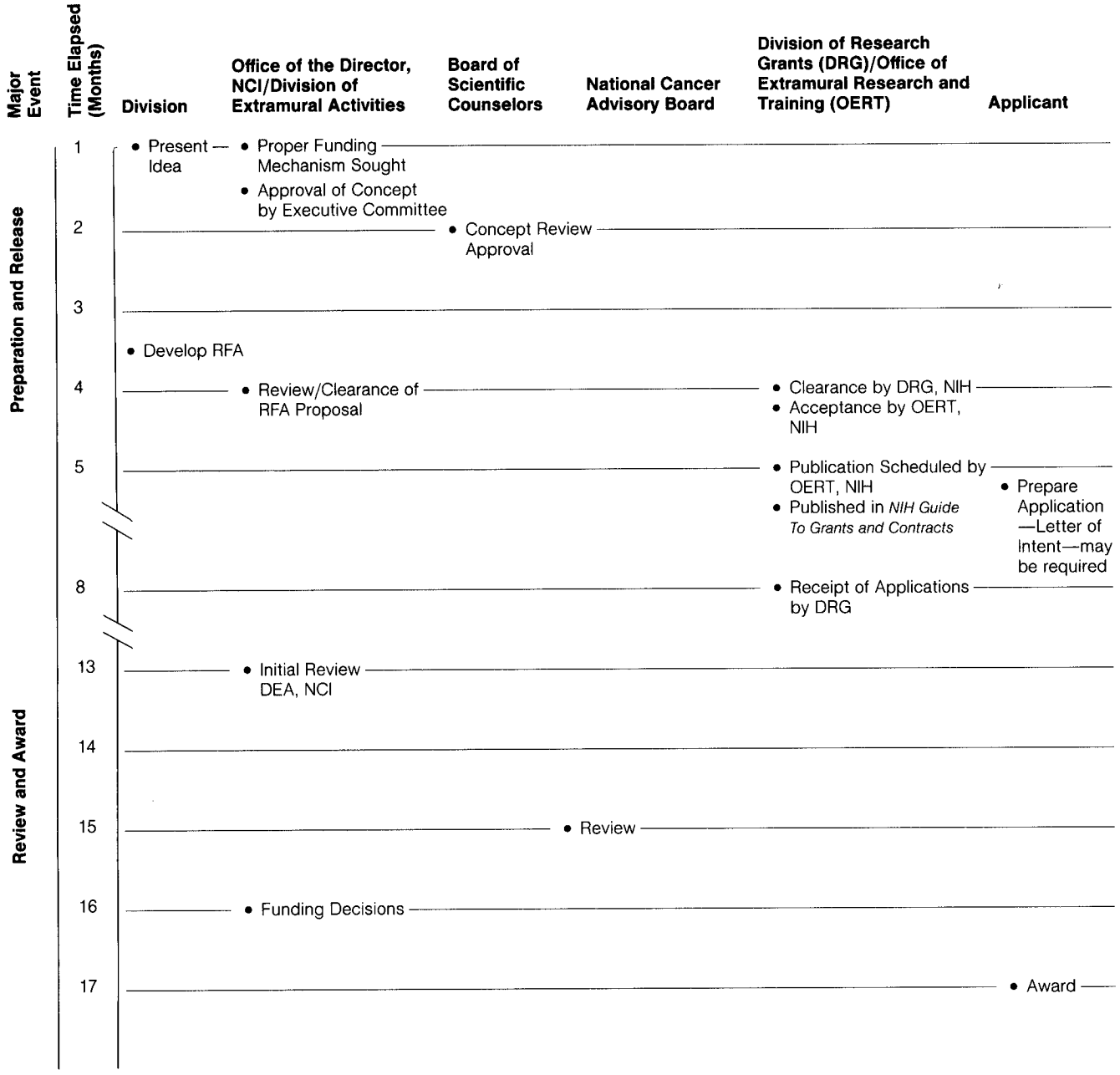
Division of Computer Research and Technology $3,263 (4.7%)
Research & development program in which concepts & methods of computer science are applied to biomedical problems
(In addition, services are rendered to the NIH community on a fee-for-service basis.)

The Management Fund provides for the financing of certain common research support services and administrative activities which are required in the operations of NIH.

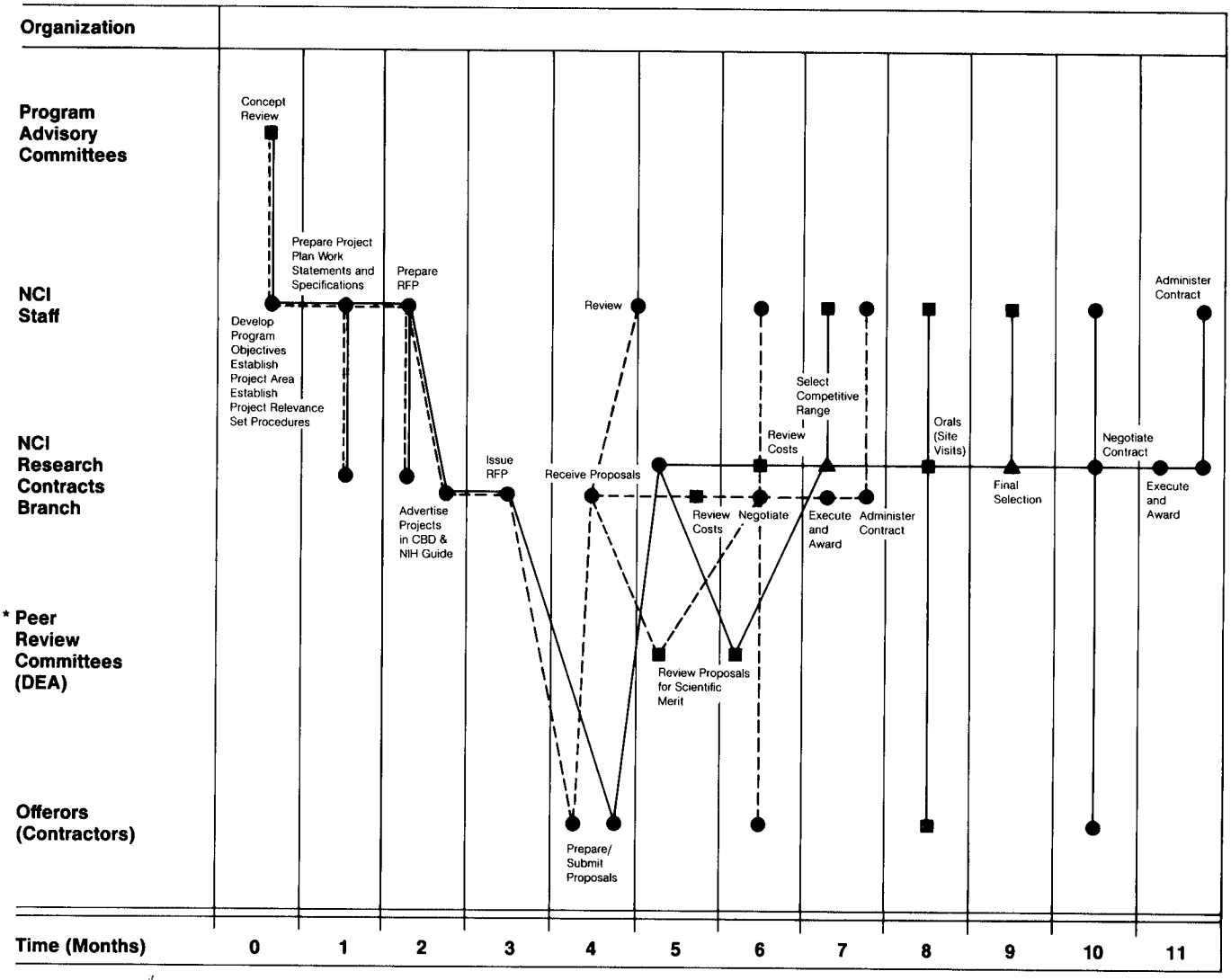
NCI Grant Process



NCI Request for Application (RFA): The Process



NCI Contract Award Process—Under Cancer Act of 1971



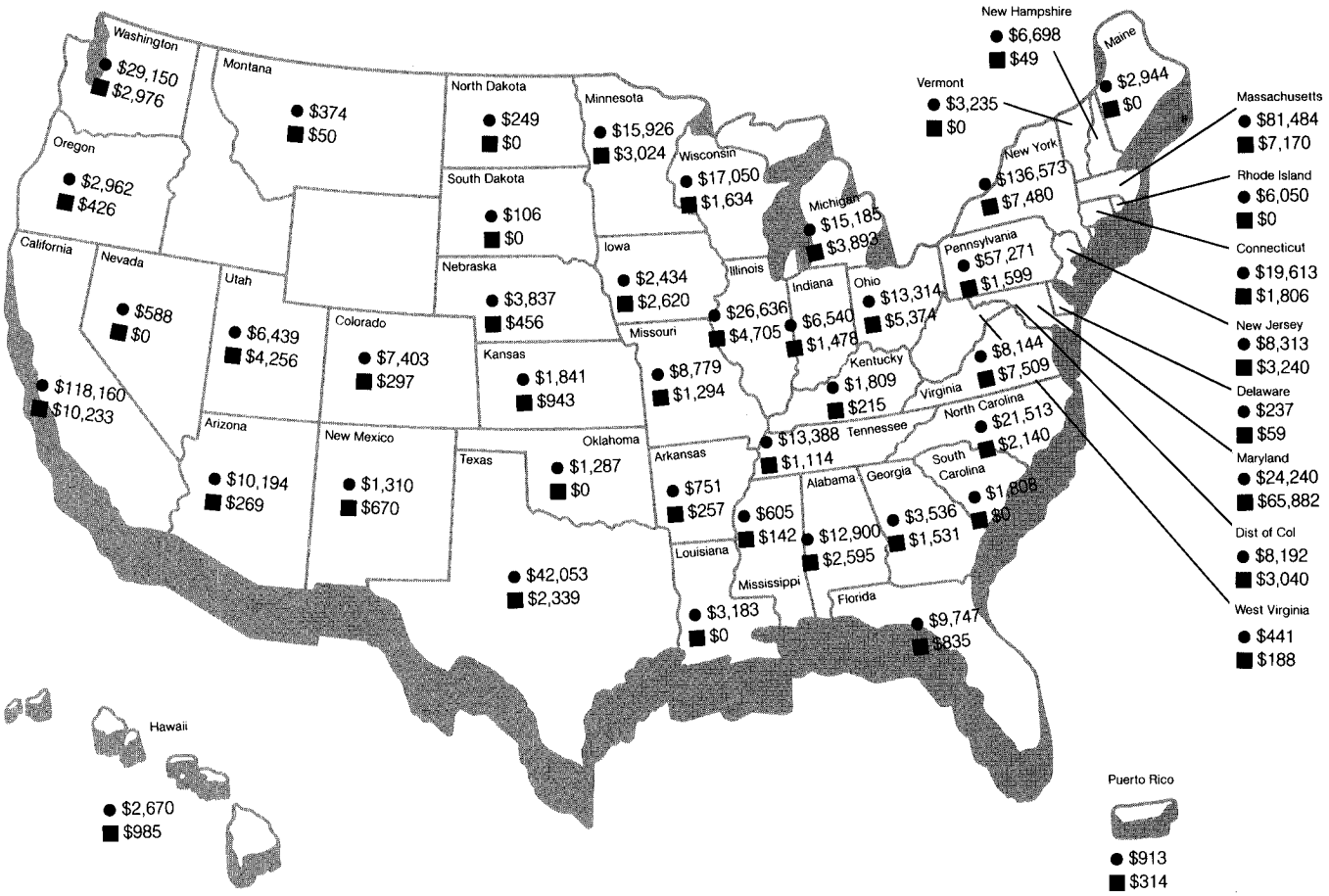
Note: Simultaneous Activities By More Than One Organization Indicate Cooperative Efforts

Legend:

- ● Operation
- ■ Review
- ▲ Decision
- ——— Normal Competitive Flow
- — — — Non-Competitive Contracts
- * Ad-Hoc Committees May Be Used
  Includes Non-Government Employees

NCI Grant and Contract Awards by State FY 1986

(Dollars in Thousands)

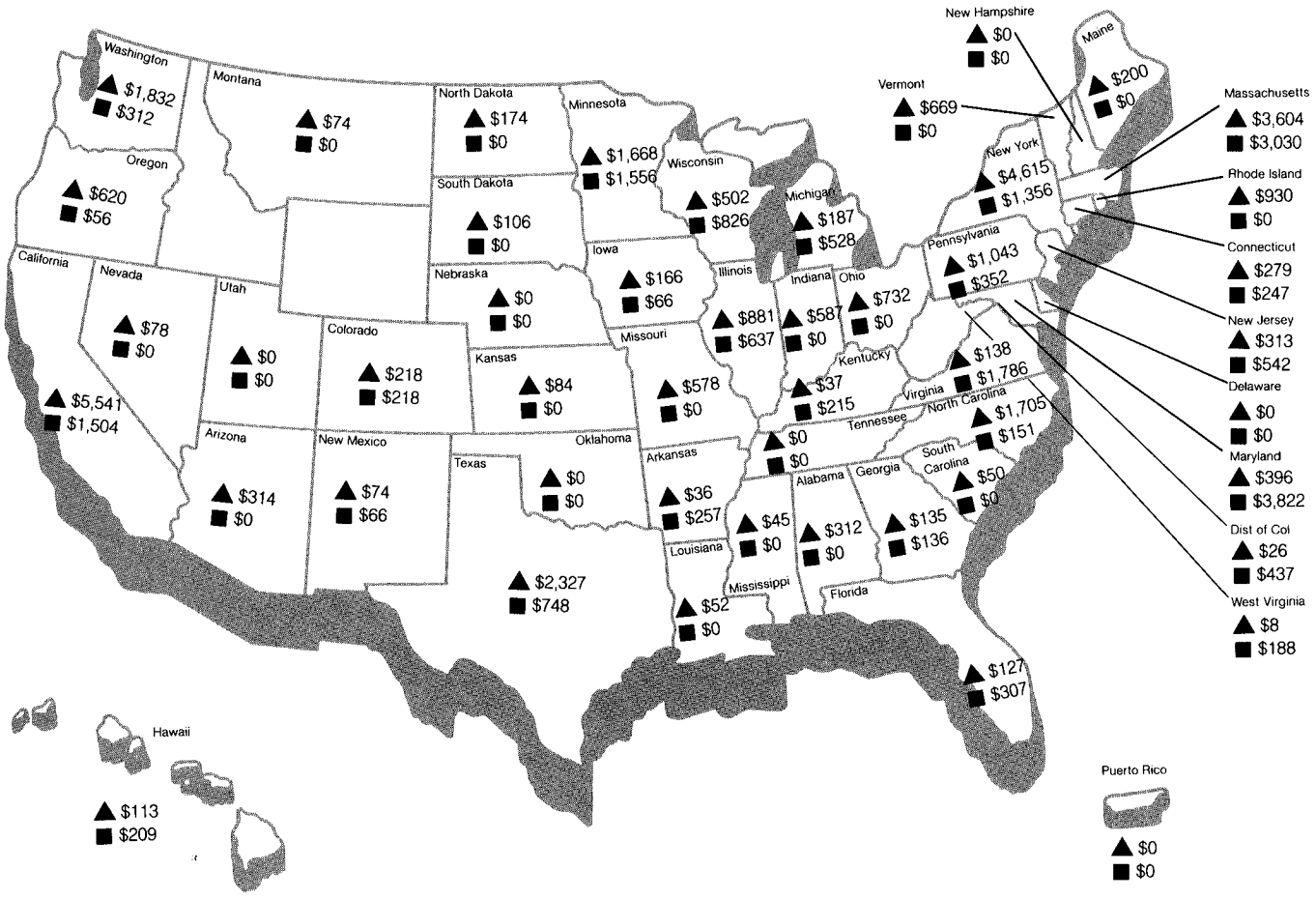


● **Grant**	$768,075
■ **Contract**	$155,087
Total U.S.	$923,162

Note: Contract figures exclude foreign contracts: $3,837; grant figures exclude foreign grants: $5,048, and Scientific Evaluation $3,368.

NCI Cancer Prevention and Control Grant and Contract Awards by State FY 1986

(Dollars in Thousands)

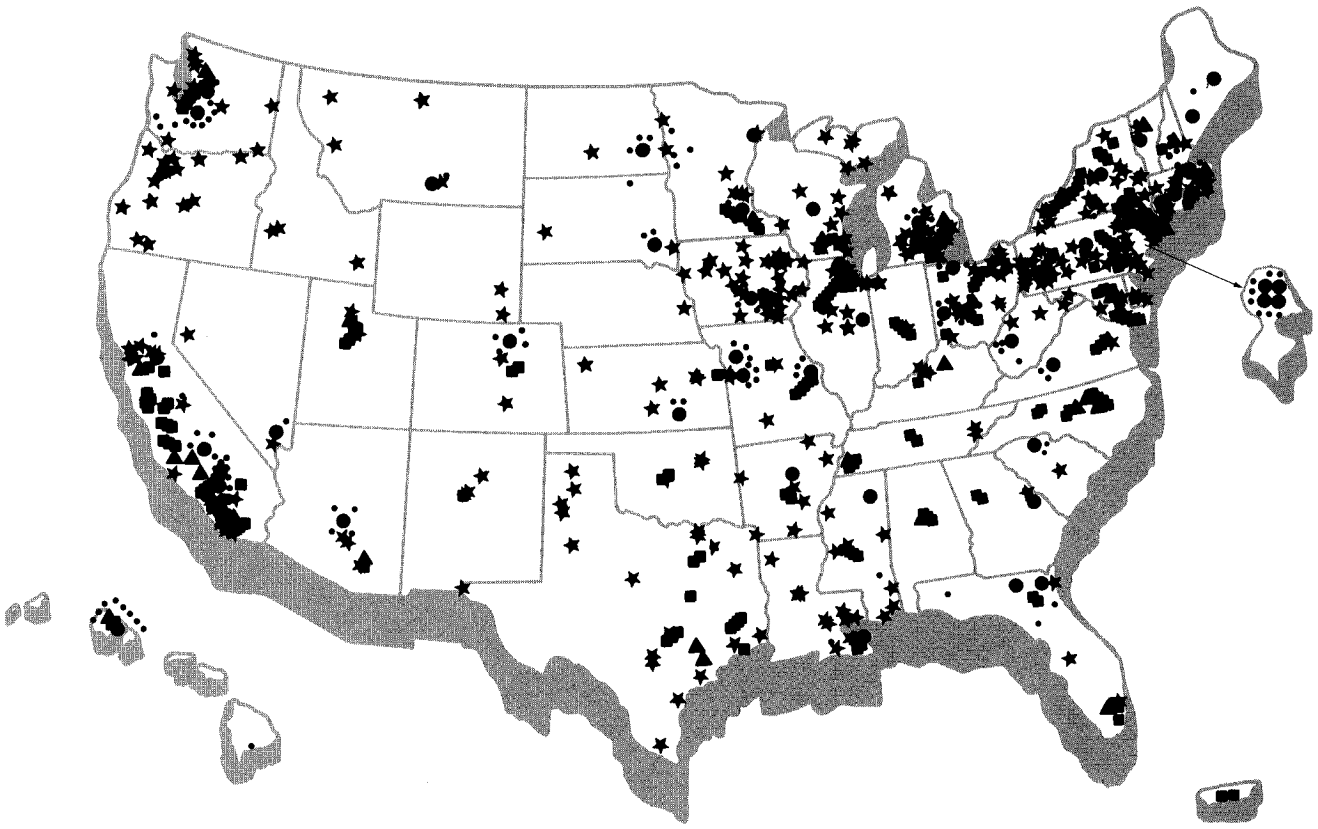


▲ **Grant**	$31,576
■ **Contract**	$19,552
Total U.S.	$51,128

Note: Contract figures exclude foreign contracts: $826; Grant figures exclude foreign grants: $135.

National Cancer Network

•● Community Clinical Oncology Program (CCOP) and Hospital Components
▲ Cancer Centers
■ Clinical Cooperative Group Members
★ Cooperative Group Outreach Program (CGOP) Components



Institutions Receiving More Than Three Million Dollars in NCI Support

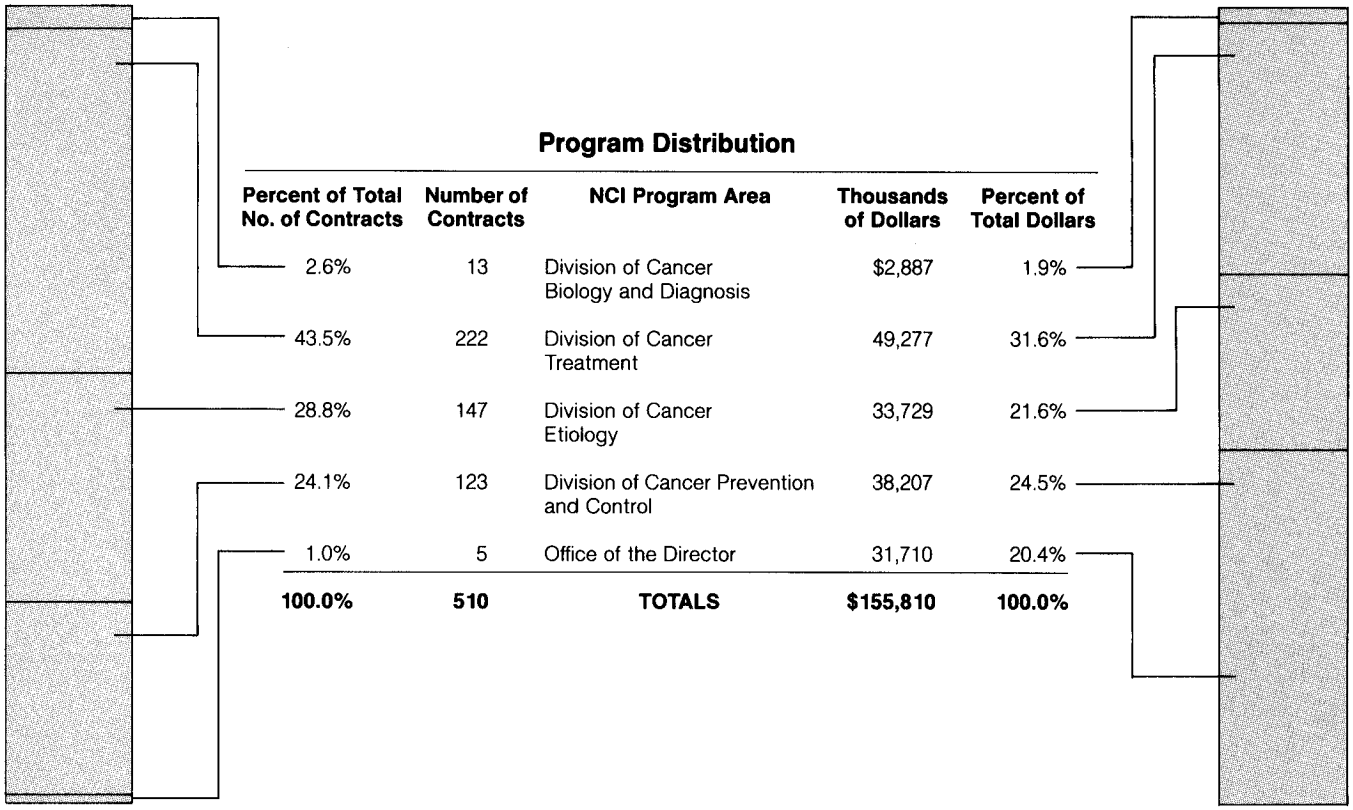
Institution	Grants	Contracts	Construction	Total NCI	State
University of Alabama System	$8,330	$51	$0	$8,381	Alabama
Southern Research Institute	3,704	2,521	0	6,225	Alabama
University of Arizona	8,880	269	0	9,149	Arizona
University of California	54,136	1,530	0	55,666	California
Litton Industries	0	12,080	0	12,080	California
Northern California Cancer Program, Inc.	3,340	2,017	0	5,357	California
La Jolla Cancer Research Foundation	4,497	0	0	4,497	California
Salk Institute for Biological Studies	5,567	0	0	5,567	California
Scripps Clinic and Research Foundation	6,558	639	0	7,197	California
University of Southern California	15,178	736	0	15,914	California
SRI International	1,748	1,336	0	3,084	California
Stanford University	14,183	0	0	14,183	California
Colorado State University	3,108	0	0	3,108	Colorado
Yale University	17,990	429	0	18,419	Connecticut
State University System of Florida	4,311	243	0	4,554	Florida
University of Miami	4,750	439	0	5,189	Florida
Emory University	2,081	1,080	0	3,161	Georgia
University of Illinois	4,279	623	0	4,902	Illinois
IIT Research Institute	593	2,439	0	3,032	Illinois
Illinois Cancer Council	3,335	414	0	3,749	Illinois
University of Chicago	10,864	129	0	10,993	Illinois
Northwestern University	3,114	140	0	3,254	Illinois
Indiana University	3,392	0	0	3,392	Indiana
University of Iowa	2,080	2,620	0	4,700	Iowa
Information Management Services	0	3,522	0	3,522	Maryland
Program Resources, Inc.	0	20,123	1,729	21,852	Maryland
Johns Hopkins University	19,291	585	0	19,876	Maryland
Westat, Inc.	0	6,063	0	6,063	Maryland
U.S. Department of the Army—Ft. Detrick	0	5,466	0	5,466	Maryland
University of Massachusetts	3,582	399	0	3,981	Massachusetts
Boston University	3,903	0	0	3,903	Massachusetts
Brigham and Women's Hospital	3,576	0	0	3,576	Massachusetts
Dana-Farber Cancer Institute	19,250	243	0	19,493	Massachusetts
Harvard University	12,569	145	0	12,714	Massachusetts
Massachusetts General Hospital	7,921	548	0	8,469	Massachusetts
Massachusetts Institute of Technology	10,461	987	0	11,448	Massachusetts
Tufts University	4,552	0	0	4,552	Massachusetts
Michigan Cancer Foundation	2,772	2,569	0	5,341	Michigan
University of Michigan	6,215	68	0	6,283	Michigan
Wayne State University	3,043	0	0	3,043	Michigan
University of Minnesota	8,682	1,774	0	10,456	Minnesota
Mayo Foundation	6,647	1,250	0	7,897	Minnesota
Washington University	5,529	0	0	5,529	Missouri
University of Nebraska System	3,614	456	0	4,070	Nebraska
Dartmouth College	6,498	0	0	6,498	New Hampshire
Princeton University	3,156	0	0	3,156	New Jersey
Cornell University	4,158	927	0	5,085	New York

(continued on next page)

Institutions Receiving More Than Three Million Dollars in NCI Support

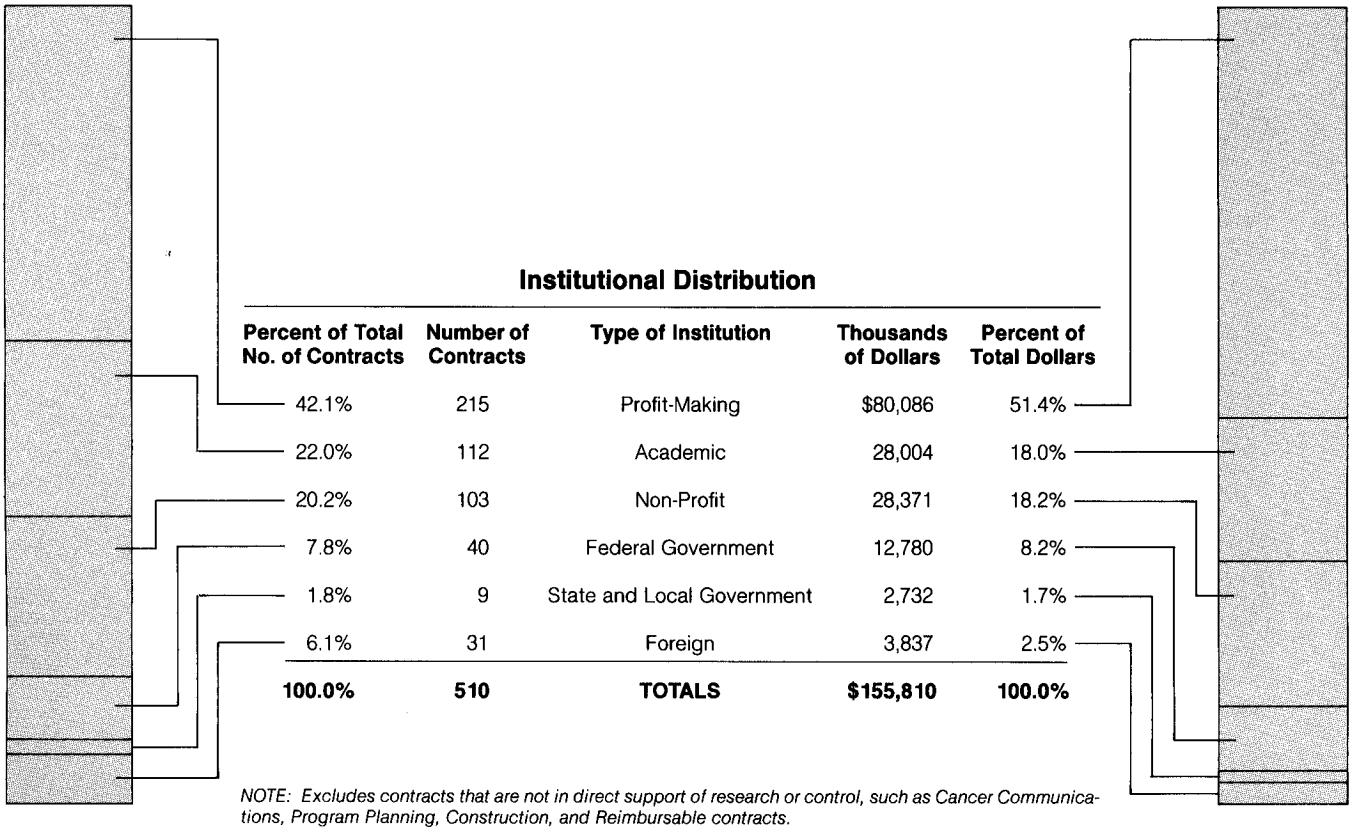
Institution	Grants	Contracts	Construction	Total NCI	State
City University of New York	4,815	0	0	4,815	New York
Columbia University	14,305	0	0	14,305	New York
Cold Spring Harbor Laboratory	6,216	0	0	6,216	New York
Memorial Sloan-Kettering Cancer Center	29,552	1,474	0	31,026	New York
New York State Dept of Health	14,525	680	0	15,205	New York
State University of New York	7,119	0	0	7,119	New York
New York University	9,714	0	0	9,714	New York
University of Rochester	10,926	0	0	10,926	New York
Rockefeller University	4,391	0	0	4,391	New York
Yeshiva University	10,722	0	0	10,722	New York
American Health Foundation	8,102	673	0	8,775	New York
University of North Carolina System	8,470	0	0	8,470	North Carolina
Duke University	10,116	216	0	10,332	North Carolina
Case Western Reserve University	3,227	0	0	3,227	Ohio
Battelle Memorial Institute	211	3,013	0	3,224	Ohio
Ohio State University	5,214	548	0	5,762	Ohio
Pennsylvania State University	5,918	0	0	5,918	Pennsylvania
Hahnemann University	3,144	0	0	3,144	Pennsylvania
Institute for Cancer Research	10,557	0	0	10,557	Pennsylvania
University of Pennsylvania	9,502	230	0	9,732	Pennsylvania
University of Pittsburgh	6,228	500	0	6,728	Pennsylvania
Temple University	3,382	0	0	3,382	Pennsylvania
Wistar Institute of Anatomy and Biology	9,539	0	0	9,539	Pennsylvania
St. Jude Children's Research Hospital	8,100	0	0	8,100	Tennessee
Vanderbilt University	3,436	0	0	3,436	Tennessee
Baylor College of Medicine	6,092	0	0	6,092	Texas
University of Texas System	30,081	2,243	0	32,324	Texas
Cancer Therapy and Research Center	3,356	0	0	3,356	Texas
Utah State Higher Education System	6,322	3,056	1,200	10,578	Utah
University of Vermont & St. Agric College	3,167	0	0	3,167	Vermont
Fred Hutchinson Cancer Research Center	19,005	1,160	0	20,165	Washington
University of Washington	7,776	676	0	8,452	Washington
University of Wisconsin System	15,159	1,247	0	16,406	Wisconsin
Total	$619,826	$90,576	$2,929	$713,331	
Percent of Total	86.9%	12.7%	0.4%	100.0%	
Total NCI Fiscal Year 1986 obligations	$1,210,284				
Percent of Total NCI Obligations	51.2%	7.5%	0.2%	58.9%	

Distribution of NCI Contracts—Fiscal Year 1986



Program Distribution

Percent of Total No. of Contracts	Number of Contracts	NCI Program Area	Thousands of Dollars	Percent of Total Dollars
2.6%	13	Division of Cancer Biology and Diagnosis	$2,887	1.9%
43.5%	222	Division of Cancer Treatment	49,277	31.6%
28.8%	147	Division of Cancer Etiology	33,729	21.6%
24.1%	123	Division of Cancer Prevention and Control	38,207	24.5%
1.0%	5	Office of the Director	31,710	20.4%
100.0%	**510**	**TOTALS**	**$155,810**	**100.0%**



Institutional Distribution

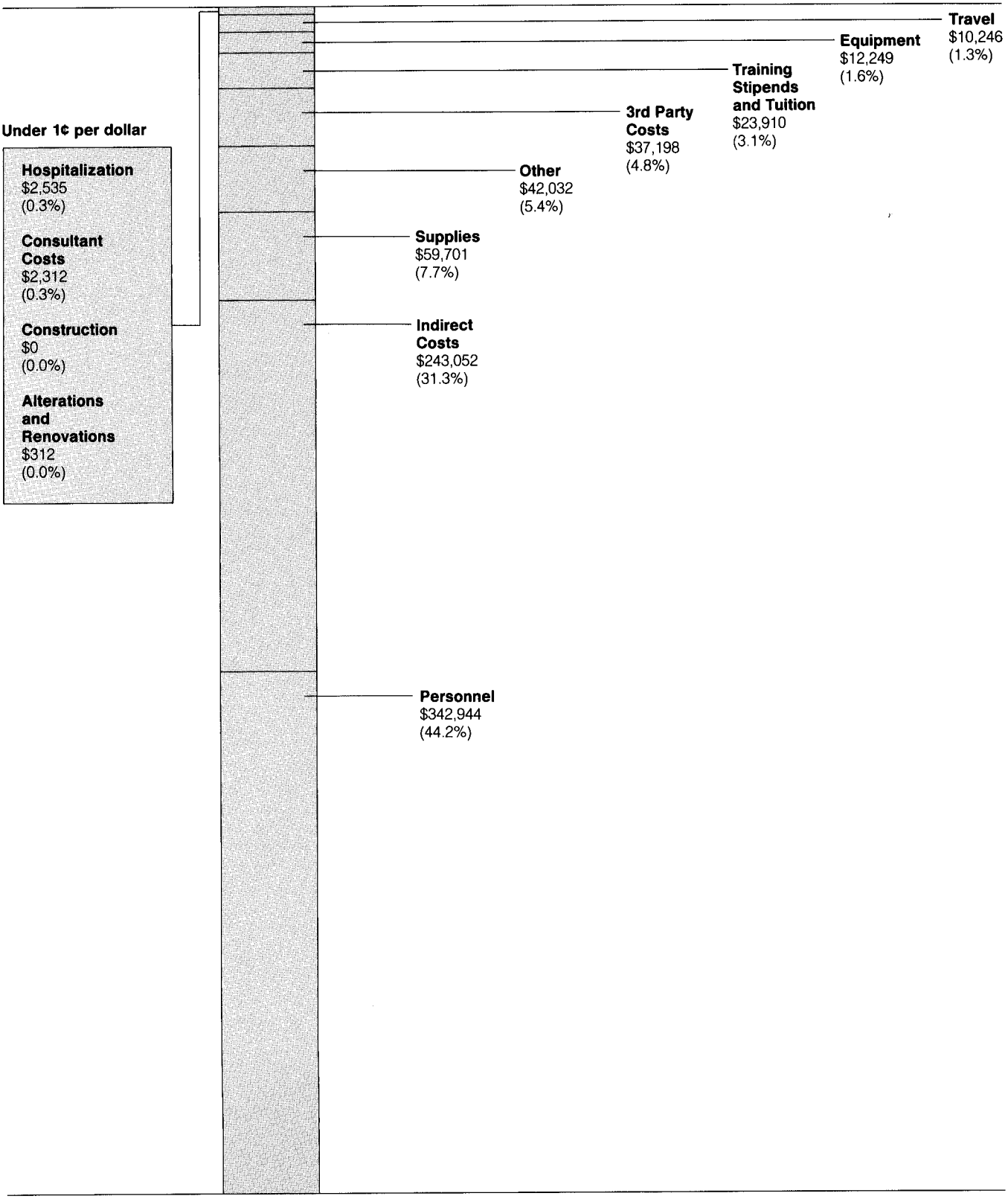
Percent of Total No. of Contracts	Number of Contracts	Type of Institution	Thousands of Dollars	Percent of Total Dollars
42.1%	215	Profit-Making	$80,086	51.4%
22.0%	112	Academic	28,004	18.0%
20.2%	103	Non-Profit	28,371	18.2%
7.8%	40	Federal Government	12,780	8.2%
1.8%	9	State and Local Government	2,732	1.7%
6.1%	31	Foreign	3,837	2.5%
100.0%	**510**	**TOTALS**	**$155,810**	**100.0%**

NOTE: Excludes contracts that are not in direct support of research or control, such as Cancer Communications, Program Planning, Construction, and Reimbursable contracts.

Distribution of the Grant Dollar— Fiscal Year 1986

(Dollars in Thousands)

TOTAL GRANT OBLIGATIONS
$776,491



NCI Foreign Grant and Contract Awards by Country—Fiscal Year 1986

(Dollars in Thousands)

Country	Number of Grants	Grant Dollars Awarded	Number of Contracts	Contract Dollars Awarded	Total Dollars Awarded	Percent of Total Dollar Awarded
Australia	3	183	0	0	183	2.1%
Belgium	1	259	1	209	468	5.3
Canada	27	1,963	5	118	2,081	23.8
China	0	0	7	1,320	1,320	15.1
Denmark	0	0	2	103	103	1.2
Finland	3	155	1	409	564	6.4
France	5	693	0	0	693	7.9
Germany Fed Republic	0	0	1	10	10	0.1
Ghana	0	0	1	45	45	0.5
Israel	7	546	3	140	686	7.8
Italy	2	51	0	0	51	0.6
Jamaica	0	0	1	311	311	3.6
Japan	1	54	1	9	63	0.7
Sweden	7	591	2	161	752	8.6
Switzerland	1	57	1	153	210	2.4
Tanzania	0	0	1	102	102	1.2
Trinidad/Tobago	0	0	1	173	173	2.0
United Kingdom	5	363	2	574	937	10.7
Total Foreign	**62**	**4,915**	**30**	**3,837**	**8,752**	**100.0%**

Note: Excludes Manpower Grants: Canada-$51; France-$27; Germany, Federal Rep. of-$19; Switzerland-$36.

Comprehensive Minority Biomedical Program (CMBP):

1. Promotes broadened participation by minorities in cancer-related research training.
2. Contributes to the support of NCI and clinical cooperative research groups to better enable NCI's research to reach and support minority populations that are particularly susceptible to cancer.
3. Provides additional support to NCI-funded investigators who wish to engage minority investigators in their research.
4. Encourages participation in annual meetings of the American Association for Cancer Research by providing travel support for minority scientists who are engaged in cancer research or who have training that could lead to contributions in this field.
5. Initiates, with the Office of Cancer Communications, model strategies for the dissemination of cancer information to the black population by utilizing minority institutions, especially historically black colleges.

Cancer Control Intervention Research Activities

Due to major differentials that exist in cancer incidence, mortality and survival between minority populations and non-minority populations, an intervention research program has been established. Current program initiatives include:

1. Primary prevention of cancer in black populations by identifying the long-term effectiveness of smoking prevention or cessation intervention programs.
2. Identification and remedy of key factors that contribute to avoidable mortality from specific cancer sites in black populations.
3. Establishment of a Research Network for Black Populations to stimulate research on important scientific and social issues relevant to this population.
4. Increased data collection efforts on cancer in Hispanics.
5. Development of a Hispanic community liaison function is being addressed in order to reach this population.

Appropriations of the NCI 1938-1987

13.6%
$2,296,568,783

1938 through 1966	*$1,331,538,220*
1967	175,656,000
1968	183,356,000
1969	185,149,500
1970	190,486,063
1971	230,383,000

86.4%
$14,548,998,500

1972	$ 378,794,000
1973	492,205,000
1974	551,191,500
1975	691,666,000[1]
1976	761,727,000
"TQ"	152,901,000[2]
1977	815,000,000
1978	872,388,000[3]
1979	937,129,000
1980	1,000,000,000[4]
1981	989,355,000[5]
1982	986,617,000[6]
1983	987,642,000[7]
1984	1,081,581,000[8]
1985	1,183,806,000
1986	1,264,159,000[9]
1987	1,402,837,000[10]

Total (1938-1987).... $16,845,567,283

Transition Quarter ("TQ")—July 1, 1976 through September 30, 1976. The Interim Period in the changing of the Federal Fiscal Year from July 1 through June 30 to October 1 through September 30.

[1] Includes $18,163,000 for training funds provided by Continuing Resolution.

[2] Includes $3,201,000 for training funds provided by Continuing Resolution.

[3] Includes $20,129,000 for training funds provided by Continuing Resolution.

[4] 1980 appropriation authorized under a Continuing Resolution.

[5] Reflects 1981 rescission of $11,975,000.

[6] Amount included in Continuing Resolution. Includes $47,988,000 transferred to the National Institute of Environmental Health Sciences for the National Toxicology Program.

[7] Appropriated under Continuing Resolution and Supplemental Appropriation Bill.

[8] Includes $23,861,000 for training funds provided by a Continuing Resolution and $4,278,000 in a Supplemental Appropriation Bill.

[9] Includes $6,000,000 from a Supplemental Appropriation Bill.

[10] Authorized under Omnibus Continuing Resolution.

NCI Budget History by Mechanism: Selected Fiscal Years 1972, 1980, 1986

(Dollars in Thousands)

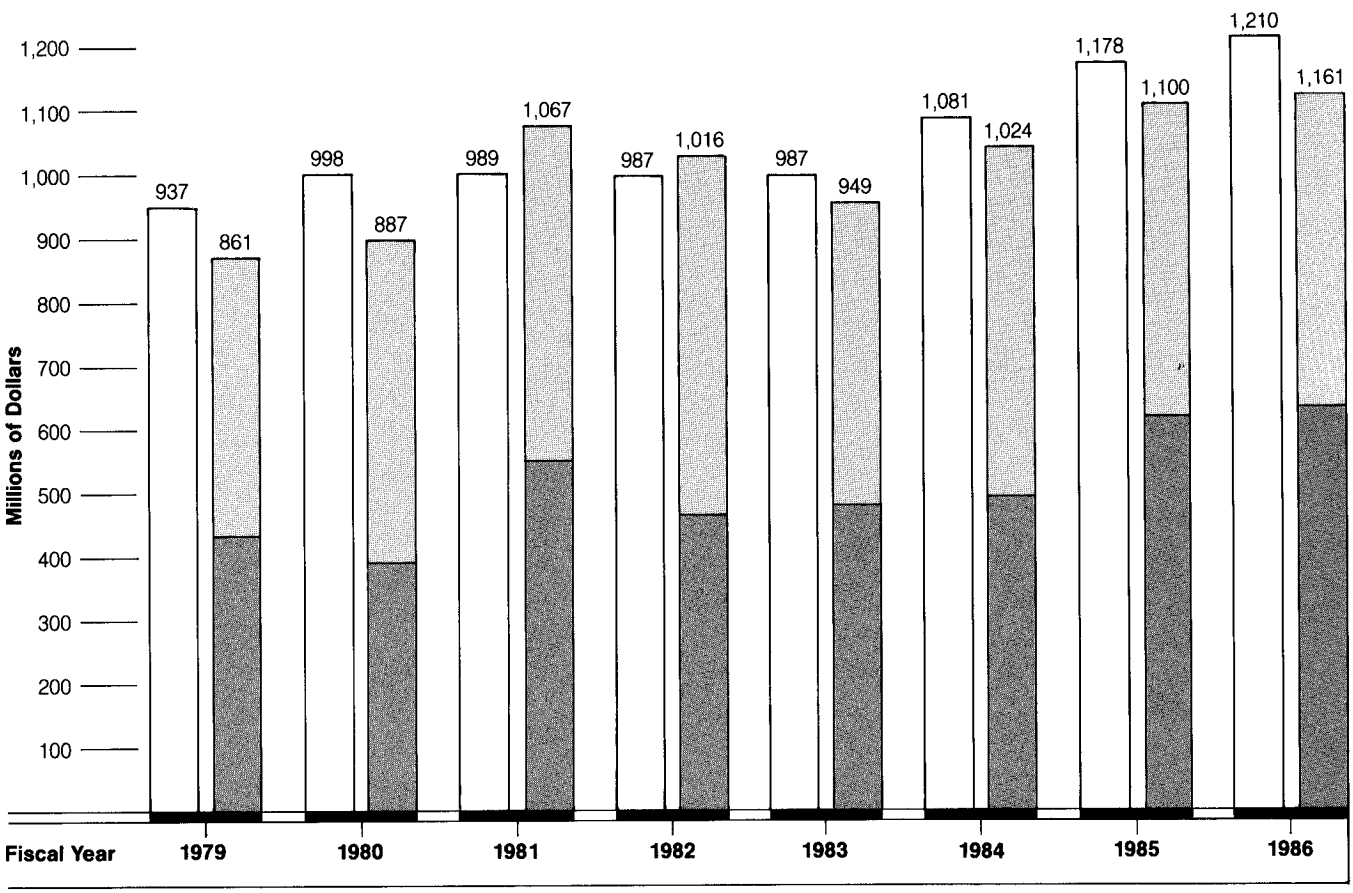
	1972 Actual		1980 Actual		1986 Actual	
	Dollars	**Percent of Total**	**Dollars**	**Percent of Total**	**Dollars**	**Percent of Total**
Group I—Investigator Initiated:						
Regular Research Grants	60,073	19.0	216,081	30.9	379,403	43.0
Small Grants					187	0.0
Clinical Cooperative Groups	10,102	3.2	36,884	5.3	49,338	5.6
Program Projects—PO1's	39,260	12.4	104,643	14.9	138,542	15.7
Clinical Education Program	—		10,906	1.6	3,412	0.4
Research Career Program	2,026	.6	5,014	0.7	6,593	0.8
Fellowships and Training	18,395	5.8	27,260	3.9	29,512	3.3
Organ Site	638	.2	17,554	2.5		
Cancer Centers-Core Support	10,090	3.2	67,421	9.6	88,426	10.0
Other Center Support Grants	1,089	.3	591	0.1		
Cooperative Agreements					9,235	1.0
Minority Biomedical Support			1,980	0.3	3,197	0.4
Organ System					852	0.1
Outstanding Investigator Grant					23,248	2.6
Subtotal	141,673	44.7	488,334	69.8	731,945	82.9
(Small Business Grants)					(7,501)	(0.8)
Group II—Co-Initiated:						
RFAs			6,683	1.0	12,557	1.4
Research Contracts	46,802	14.8	55,265	7.8	24,506	2.8
RFA R21's					278	0.0
Subtotal	46,802	14.8	61,948	8.8	37,341	4.2
(Small Business Contracts)					(3,802)	(0.4)
Group III—NCI/NCP Initiated						
Resource Support Contracts	63,194	20.0	115,425	16.5	100,797	11.4
Interagency Agreements	12,053	3.8	18,740	2.7	10,129	1.1
Subtotal	75,247	23.8	134,165	19.2	110,926	12.5
Group IV—Other Resources						
Planning Grants	1,698	.5	221	0.0		
Construction Grants	47,004	14.9	10,814	1.5		
Construction Contracts	3,999	1.3	4,618	0.7	3,114	0.4
Subtotal	52,701	16.7	15,653	2.2	3,114	0.4
Total	316,423	100.0	700,100	100.0	883,326	100.0
% Total		84.3		73.1		73.0
In-House Research	25,696	6.8	98,665	10.3	133,377	11.0
Management & Support	33,246	8.9	95,735	10.0	141,492	11.7
(NIH Management Fund)	(12,910)	(3.4)	(39,549)	(4.1)	(69,882)	(5.8)
Cancer Control (Grants & Contracts)			63,663	6.6	52,089	4.3
Subtotal	58,942	15.7	258,063	26.9	326,958	27.0
Total NCI	375,365	100.0	958,163	100.0	1,210,284	100.0
Transfers:						
Diagnostic Radiation	(2,800)	(.8)	(3,611)	0.4		
National Toxicology Program			(43,495)			

Comparison of Dollars, Positions and Space

	Dollars			Positions			Space		
	Obligations ($000's)	**Precent of Increase Over Base Year**	Percent of Increase Over Prior Year	Actual Full-Time Permanent Employees	**Percent of Increase Over Base Year**	Percent of Increase Over Prior Year	Allocated Space (Square Feet)*	**Percent of Increase Over Base Year**	Percent of Increase Over Prior Year
1971	232,855	Base Year	—	1426	Base Year	—	321,230	Base Year	—
1972	378,636	62.6	62.6	1665	16.8	16.8	329,587	2.6	2.6
1973	431,245	85.2	13.9	1736	21.7	4.3	357,972	11.4	8.6
1974	581,149	149.6	34.8	1805	26.6	4.0	381,436	18.7	6.6
1975	699,320	200.3	20.3	1849	29.7	2.4	382,485	19.1	0.3
1976	760,751	226.7	8.8	1955	37.1	5.7	387,324	20.6	1.3
1977	814,957	250.0	7.1	1986	39.3	1.6	428,285	33.3	10.6
1978	872,369	274.6	7.0	1969	38.1	−0.9	491,725	53.1	14.8
1979	936,969	302.4	7.4	1973	38.4	0.2	493,156	53.5	0.3
1980	998,047	328.6	6.5	1837	28.8	−6.9	467,730	45.6	−5.2
1981	989,338	324.9	−0.9	1815	27.3	−1.2	472,633	47.1	1.0
1982	986,564	323.7	−0.3	1703	19.4	−6.2	477,782	48.7	1.1
1983	986,811	323.8	0.02	1731	21.4	1.6	484,093	50.7	1.3
1984	1,081,460	364.4	9.6	1698	19.1	−1.9	466,890	45.3	−3.6
1985	1,177,853	405.8	8.9	1596	11.9	−6.0	466,890	45.3	.0
1986	1,210,284	419.8	2.8	1573	10.3	−1.4	465,790	45.0	−.2

**Does not include the Frederick Cancer Research Facility.*

National Cancer Institute Obligations and Outlays, Fiscal Years 1979-1986



Obligations

Outlays — Current Year Funds / Prior Year Funds

Obligations: *Orders placed, grants and contracts awarded, salaries earned and similar financial transactions which legally utilize or reserve an appropriation for expenditure.*
Outlays: *Payments (cash or checks) made from current or prior year appropriations.*

NCI Total Research Projects – 1981-1986

(Dollars in Thousands)

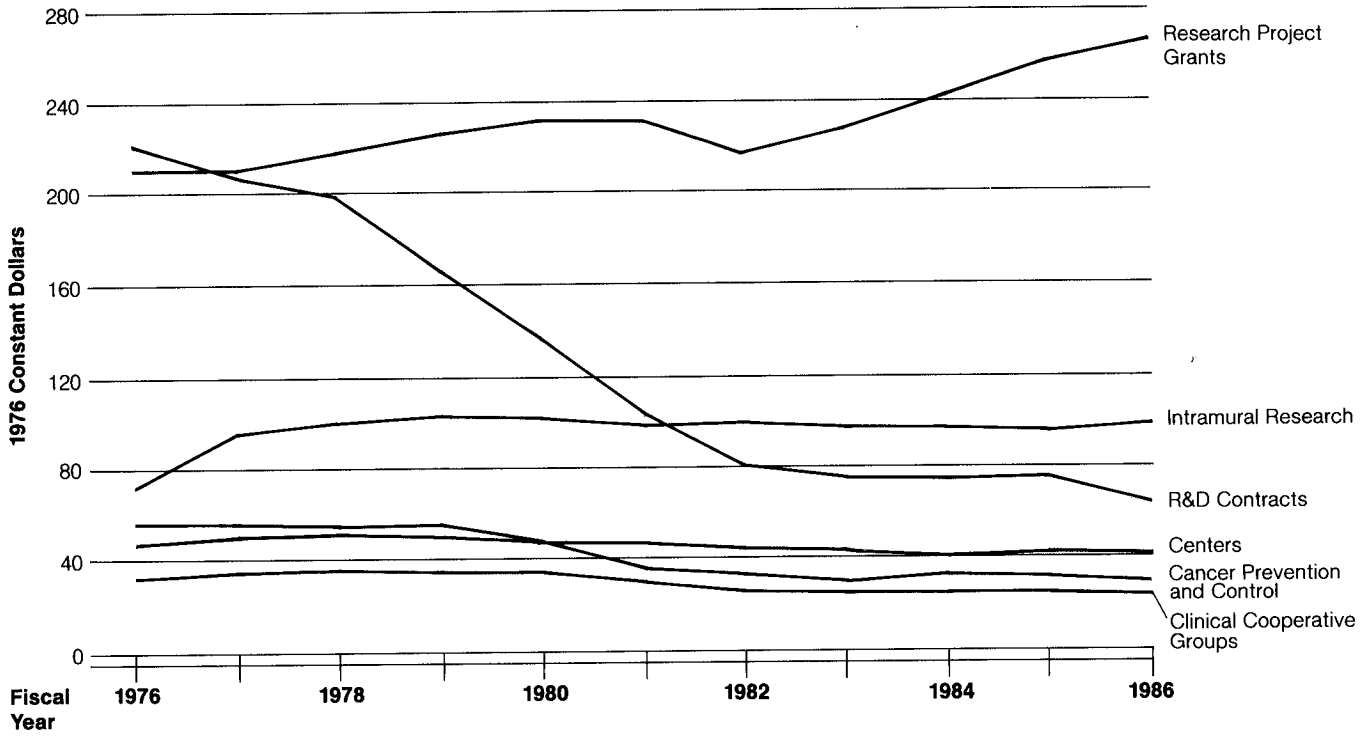
Fiscal Year	Type Awarded	Requested		Recommended		Awarded		Percent Funded[1]
		Number	Amount	Number	Amount	Number	Amount	
1981	Competing							
	New	2,017	$277,145	1,594	$156,704	483	$53,004	30.3%
	Renewal	687	131,355	653	91,034	311	48,122	47.6
	Board Supplement	61	3,776	47	1,738	32	940	68.1
	Subtotal	2,765	$412,276	2,294	$249,476	826	$102,066	36.0
	Noncompeting					1,802	253,389	
	Total					**2,628**	**$355,455**	
1982	Competing[2]							
	New	2,187	$308,153	1,784	$189,245	434	$47,224	24.3
	Renewal	730	174,573	706	117,099	323	50,186	45.7
	Board Supplement	28	2,266	24	1,289	4	86	16.7
	Subtotal	2,945	$484,992	2,514	$307,633	761	$97,496	30.3
	Noncompeting					1,797	260,853	
	Total					**2,558**	**$358,349**	
1983	Competing[2]							
	New	2,229	$323,572	1,844	$215,945	529	$55,316	28.7
	Renewal	783	160,881	763	113,664	358	56,698	46.9
	Board Supplement	23	2,492	15	727	3	110	20.0
	Subtotal	3,035	$486,945	2,622	$330,336	890	$112,124	33.9
	Noncompeting					1,923	294,019	
	Total					**2,813**	**$406,143**	
1984	Competing							
	New	2,113	$310,433	1,773	$207,996	558	$68,376	31.5
	Renewal	774	179,764	745	135,253	416	90,140	55.8
	Board Supplement	13	1,766	11	788	3	105	27.3
	Subtotal	2,900	$491,963	2,529	$344,037	977	$158,621	38.6
	Noncompeting					1,869	302,626	
	Total					**2,846**	**$461,247**	
1985	Competing							
	New	2,400	$398,621	2,042	$282,590	599	$83,691	29.3
	Renewal	782	183,483	758	140,472	416	84,708	54.9
	Board Supplement	19	1,659	13	850	2	65	15.4
	Subtotal	3,201	$583,763	2,813	$423,912	1,017	$168,464	36.2
	Noncompeting					1,964	348,011	
	Total					**2,981**	**$516,475**	
1986	Competing[2]							
	New	2,354	$392,028	1,997	$277,698	564	$84,470	28.2
	Renewal	787	198,814	765	160,021	385	77,012	50.3
	Board Supplement	12	775	10	366	1	14	10.0
	Subtotal	3,153	$591,617	2,772	$438,085	950	$161,496	34.3
	Noncompeting					2,111	397,664	
	Total					**3,061**	**$559,160**	

Note: Includes R01 traditional grants, P01 program projects, R23 new investigator research awards, R35 Outstanding Investigator Grants, R37 MERIT awards, U01 Cooperative agreement awards, R01 and U01 awards of RFA's and R43/R44 Small Business Innovative Research awards.

[1]*Percent Funded; Number Awarded ÷ Number Recommended*

[2]*Because of fiscal restraints, grants were awarded below recommended levels.*

NCI Historical Trends:
Obligations By Mechanism



National Cancer Institute